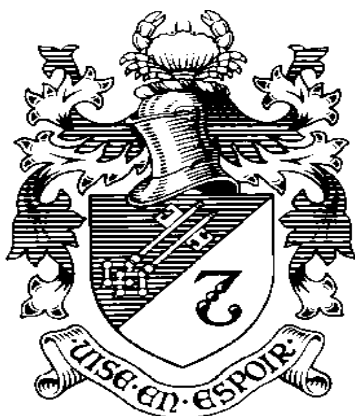




## **Cancer Screening Programmes**

**NHS BREAST SCREENING PROGRAMME**

**&**

**ASSOCIATION OF BREAST SURGERY  
AT BASO**

**AN AUDIT OF SCREEN DETECTED BREAST CANCERS  
FOR THE YEAR OF SCREENING  
APRIL 2002 TO MARCH 2003**

***PRESENTED AT THE  
ASSOCIATION OF BREAST SURGERY AT BASO MEETING***

***26th May 2004***

***EAST MIDLANDS CONFERENCE CENTRE, NOTTINGHAM***



# ***Cancer Screening Programmes***

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## **FOREWORDS**

The audit of screen detected breast cancers, which is carried out with the Association of Breast Surgery at BASO, has become a major part of the quality assurance of the UK NHS Breast Screening Programme. The audit enables us to track diagnostic standards in all our breast screening units and to see what has happened to the women we have screened.

The results of the audit enable each screening programme to compare itself with the rest of the country. Each programme can see if they are keeping up with trends, or whether extra effort is needed. This has contributed to the overall quality improvement we have seen over the years in the UK NHS Breast Screening Programme, and in diagnostic and treatment standards.

This year we will be following up the audit and the annual meeting with a workshop for QA teams later in the summer. This workshop will dissect those aspects of diagnosis and treatment where special attention is needed to ensure the improvement continues.

Thanks are due, as ever, to the team at the West Midlands Cancer Intelligence Unit, who put the data together, and to all the surgeons and their teams who contribute their own figures.

**Julietta Patnick**

**Director for the NHS Cancer Screening Programmes, April 2004**

Another year, another Herculean struggle to obtain data. For some reason collecting surgical data in the BASO audit never gets any easier. I don't think this is due to the unrealistic demands of your audit group but rather the continuing difficulties in implementing effective data collection systems for the non core screening data set. I therefore appreciate the work of all those in breast screening units, QA reference centres, breast units and oncology centres who are able to return data under these difficult circumstances. You are, despite the horrendous difficulties, contributing to a world class set of data that is slowly but steadily achieving international recognition as a significant data source within breast cancer screening. I commend these data to you.

Finally I wish to thank Dr Jackie Walton for her considerable contribution to the success of this project not least through achieving 10-year survival data. On behalf of the audit group I wish her a fond farewell and every joy in her new (and more challenging!) role as a parent.

**Hugh Bishop**

**Chairman, Breast Audit Group, Association of Breast Surgery at BASO, April 2004**

## ACKNOWLEDGEMENTS

The 2002/03 audit of screen detected breast cancers was designed and directed by the Breast Audit Group of the Association of Breast Surgery at the British Association of Surgical Oncology (BASO).

|                      |                                                                                                                       |
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| Mrs Margot Wheaton   | Chair of the National Breast Screening System Users Group and<br>Administration QA Co-ordinator, West Midlands NHSBSP |

The Breast Audit Group would like to extend their thanks to the following individuals and groups for their contribution to the 2002/03 audit of screen detected breast cancer.

NHSBSP Surgical QA Co-ordinators, QA Co-ordinators and QA Directors for overseeing regional data collection and validation at the regional QA Reference Centres.

QA Data Managers, Screening Office Managers and staff within the NHSBSP for collecting, collating and validating the regional data.

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The Breast Audit Group would also like to thank the NHSBSP national office for its financial assistance in support of the 2002/03 audit of screen detected breast cancer.

# CONTENTS

|                                                                                                  | <b>Page</b>   |
|--------------------------------------------------------------------------------------------------|---------------|
| <b>INTRODUCTION</b>                                                                              | <b>1</b>      |
| Aims and Objectives                                                                              | 1             |
| Organisation of the Audit                                                                        | 1             |
| Responsibility for Data Collection                                                               | 2             |
| Obtaining Complete and Valid Audit Data                                                          | 3             |
| Data Evaluation                                                                                  | 3             |
| Presentation and Publication of Audit Data                                                       | 3             |
| Referencing this Document                                                                        | 3             |
| Using the Audit Data to Improve Performance                                                      | 4             |
| Your Comments                                                                                    | 4             |
| Provision of Data for the 2002/03 Audit                                                          | 5             |
| <br><b>KEY FINDINGS AND RECOMMENDATIONS</b>                                                      | <br><b>6</b>  |
| Cancers Detected by Screening                                                                    | 6             |
| Pre-operative Diagnosis                                                                          | 6             |
| Diagnostic Open Biopsies                                                                         | 6             |
| Surgical Treatment                                                                               | 7             |
| Lymph Nodes and Invasive Grade                                                                   | 7             |
| Surgical Caseload                                                                                | 8             |
| Number and Sequence of Operations                                                                | 8             |
| Adjuvant Therapy                                                                                 | 9             |
| Survival                                                                                         | 10            |
| <br><b>RESULTS OF THE 2002/03 AUDIT OF SCREEN DETECTED BREAST CANCERS</b>                        | <br><b>11</b> |
| <b>1. ALL BREAST CANCERS DETECTED BY THE UK NHSBSP IN 2002/03</b>                                | <b>11</b>     |
| <b>1.1 Number and Invasive Status of Screen Detected Breast Cancers and Total Women Screened</b> | <b>11</b>     |
| <b>1.2 Age Profile of Women with Screen Detected Breast Cancer</b>                               | <b>13</b>     |
| <br><b>2. DIAGNOSIS OF CANCERS</b>                                                               | <br><b>14</b> |
| <b>2.1 Pre-operative Diagnosis</b>                                                               | <b>14</b>     |
| 2.1.1 Pre-operative Diagnosis Rate for All Cancers                                               | 14            |
| 2.1.2 Pre-operative Diagnosis Rate for Invasive and Non-invasive Cancers                         | 16            |
| 2.1.3 Invasive Status at Pre-operative Core Biopsy                                               | 17            |
| 2.1.4 Invasive Status at Pre-operative Core Biopsy Compared with Invasive Status After Surgery   | 18            |
| 2.1.5 Invasive Status of Cancers Diagnosed by C5 Cytology Only                                   | 20            |
| <b>2.2 Number of Visits for Core Biopsy/Cytology</b>                                             | <b>20</b>     |
| <b>2.3 Diagnostic Open Biopsies</b>                                                              | <b>22</b>     |
| 2.3.1 Status of Diagnostic Open Biopsies                                                         | 22            |
| 2.3.2 Pre-operative Histories for Cancers Diagnosed by Diagnostic Open Biopsy                    | 23            |
| <br><b>3. SURGICAL TREATMENT</b>                                                                 | <br><b>26</b> |
| <b>3.1 Treatment for Non-invasive and Micro-invasive Breast Cancer</b>                           | <b>26</b>     |
| <b>3.2 Treatment for Invasive Breast Cancer</b>                                                  | <b>30</b>     |
| 3.2.1 Treatment According to Invasive Size                                                       | 31            |
| 3.2.2 Treatment of Invasive Cancers with Invasive Component <15mm in Diameter                    | 31            |
| 3.2.3 Treatment of Invasive Cancers According to Whole Tumour Size                               | 32            |
| <b>3.3 Immediate Reconstruction Following Mastectomy</b>                                         | <b>34</b>     |

|                   |                                                                                                                                         |            |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>4.</b>         | <b>LYMPH NODE STATUS AND INVASIVE GRADE AND NPI</b>                                                                                     | <b>35</b>  |
| <b>4.1</b>        | <b>Lymph Node Status of Invasive Cancers</b>                                                                                            | <b>35</b>  |
| 4.1.1             | Availability of Nodal Status for Invasive Cancers                                                                                       | 35         |
| 4.1.2             | Number of Nodes Examined                                                                                                                | 36         |
| <b>4.2</b>        | <b>Lymph Node Status of Non-invasive Cancers</b>                                                                                        | <b>39</b>  |
| <b>4.3</b>        | <b>Grade of Invasive Cancers</b>                                                                                                        | <b>41</b>  |
| <b>4.4</b>        | <b>NPI of Invasive Cancers</b>                                                                                                          | <b>41</b>  |
| <b>5.</b>         | <b>SCREENING SURGICAL CASELOAD</b>                                                                                                      | <b>44</b>  |
| <b>6.</b>         | <b>NUMBER AND SEQUENCE OF THERAPEUTIC OPERATIONS</b>                                                                                    | <b>48</b>  |
| <b>6.1</b>        | <b>Repeat Therapeutic Operations</b>                                                                                                    | <b>48</b>  |
| <b>6.2</b>        | <b>Sequence of Operations for Cancers with B5b (Invasive) Core Biopsy Proved to be Invasive After Surgery</b>                           | <b>50</b>  |
| <b>6.3</b>        | <b>Sequence of Operations for Invasive Cancers with C5 Cytology Only</b>                                                                | <b>51</b>  |
| <b>6.4</b>        | <b>Sequence of Operations for Cancers with B5a (Non-invasive) Core Biopsy Determined to be Invasive After Surgery</b>                   | <b>51</b>  |
| <b>6.5</b>        | <b>Sequence of Operations for Cancers with B5a (Non-invasive) Core Biopsy Proved to be Non-invasive or Micro-invasive After Surgery</b> | <b>53</b>  |
| <b>6.6</b>        | <b>Summary of Repeat Operation Rates</b>                                                                                                | <b>54</b>  |
| <b>7.</b>         | <b>ADJUVANT THERAPY</b>                                                                                                                 | <b>57</b>  |
| <b>7.1</b>        | <b>Data Completeness for the Adjuvant Therapy Audit</b>                                                                                 | <b>57</b>  |
| <b>7.2</b>        | <b>Time Between Assessment, Surgery, Radiotherapy, Chemotherapy and Hormonal Therapy</b>                                                | <b>60</b>  |
| <b>7.3</b>        | <b>Order of Surgery, Radiotherapy and Chemotherapy</b>                                                                                  | <b>64</b>  |
| <b>7.4</b>        | <b>Variations in Combinations of Treatment According to Tumour Characteristics</b>                                                      | <b>66</b>  |
| <b>8.</b>         | <b>SURVIVAL ANALYSIS</b>                                                                                                                | <b>71</b>  |
| <b>8.1</b>        | <b>Survival Analysis Methods</b>                                                                                                        | <b>71</b>  |
| <b>8.2</b>        | <b>Eligibility of Cases for the Survival Analysis</b>                                                                                   | <b>71</b>  |
| <b>8.3</b>        | <b>Data Quality and Characteristics of Cases Included in the Analysis</b>                                                               | <b>72</b>  |
| <b>8.4</b>        | <b>Cause of Death</b>                                                                                                                   | <b>73</b>  |
| <b>8.5</b>        | <b>5 Year Relative Survival Rates For Cancers Diagnosed in 1997/98</b>                                                                  | <b>74</b>  |
| <b>8.6</b>        | <b>5 Year Relative Survival Rates For Cancers Diagnosed in 1992-98</b>                                                                  | <b>74</b>  |
| <b>8.7</b>        | <b>10 Year Relative Survival Rates For Cancers Diagnosed in 1992/93</b>                                                                 | <b>75</b>  |
| <b>8.8</b>        | <b>Relative Survival According to Tumour Characteristics</b>                                                                            | <b>76</b>  |
| 8.8.1             | Relative Survival of Invasive Cancers by Age Group                                                                                      | 76         |
| 8.8.2             | Relative Survival of Invasive Cancers by Tumour Size                                                                                    | 76         |
| 8.8.3             | Relative Survival of Invasive Cancers by Tumour Grade                                                                                   | 76         |
| 8.8.4             | Relative Survival of Invasive Cancers by Nodal Status                                                                                   | 76         |
| 8.8.5             | Relative Survival of Invasive Cancers by NPI Group                                                                                      | 77         |
|                   | <b>APPENDICES</b>                                                                                                                       |            |
| <b>Appendix 1</b> | <b>Timetable of Events</b>                                                                                                              | <b>79</b>  |
| <b>Appendix 2</b> | <b>Breast Audit Questionnaire with Guidance Notes and Data Checks</b>                                                                   | <b>80</b>  |
| <b>Appendix 3</b> | <b>Breast Audit Adjuvant Therapy Data Form Combined with Guidance Notes</b>                                                             | <b>92</b>  |
| <b>Appendix 4</b> | <b>Survival Audit Data Collection Sheet Combined with Guidance Notes</b>                                                                | <b>96</b>  |
| <b>Appendix 5</b> | <b>Questionnaire Data Tables</b>                                                                                                        | <b>101</b> |
| <b>Appendix 6</b> | <b>Sequence of Operations Data Tables</b>                                                                                               | <b>123</b> |
| <b>Appendix 7</b> | <b>Adjuvant Therapy Data Tables</b>                                                                                                     | <b>127</b> |
| <b>Appendix 8</b> | <b>Survival Analysis Data Tables</b>                                                                                                    | <b>145</b> |

## **INTRODUCTION**

### **AIMS AND OBJECTIVES**

The 2002/03 Association of Breast Surgery at BASO (ABS at BASO) audit of screen detected breast cancer was undertaken to examine NHS Breast Screening Programme (NHSBSP) surgical activity in the period 1<sup>st</sup> April 2002 to 31<sup>st</sup> March 2003. The audit was designed to assess surgical performance by comparison of data with as many as possible of the surgical Quality Assurance (QA) standards recommended by the UK NHS Breast Screening Programme. These include the standards set in the following publications:

- Quality Assurance Guidelines for Surgeons in Breast Cancer Screening  
NHSBSP Publication No. 20 Revised November 2003
- Guidelines for Quality Assurance Visits  
NHSBSP Publication No. 40 Revised October 2000

Reference is also made to guidelines intended for symptomatic breast cancer:

- Guidelines for Surgeons in the Management of Symptomatic Breast Disease in the United Kingdom, European Journal of Surgical Oncology 1995, updated 1998

The audit covers the main topic areas:

- the number and invasive status of screen detected breast cancers
- pre-operative diagnosis and use of diagnostic open biopsy
- treatment and size of all cancers
- lymph node status, invasive grade and NPI score
- surgical caseload
- repeat therapeutic operations
- adjuvant therapy
- survival

### **ORGANISATION OF THE AUDIT**

#### **Organisation of Data Collection**

As in previous years, responsibility for regional data collection was devolved to Regional QA Reference Centres under the direction of Surgical QA Co-ordinators, QA Directors and QA Co-ordinators. Prior to the start of data collection an information pack was sent to all Surgical QA Co-ordinators, QA Directors, QA Co-ordinators and Directors of Regional Cancer Registries. This pack included, in both electronic and paper format:

- a timetable of events (Appendix 1)
- a main ABS at BASO breast audit questionnaire with guidance notes (Appendix 2)
- an adjuvant therapy data collection form with guidance notes (Appendix 3)
- a survival audit data collection form with guidance notes (Appendix 4)

The format of the audit was designed by the Breast Audit Group and was subject to comment from the Surgical QA Co-ordinator, QA Directors and QA Co-ordinators in an attempt to ensure that, as far as possible, ambiguities were eliminated. Guidance notes and data checks, designed to assist the collection of consistent data, were incorporated.

## **ABS at BASO Breast Audit Questionnaire**

The ABS at BASO breast audit questionnaire was designed to enable collection of data describing surgical screening activity in the 2002/03 screening year. The cohort of women included in this period was selected to be identical to that included in the statistical KC62 reports for 2002/03, from which UK NHSBSP core screening measures are routinely calculated. Information was sought in such a way as to allow comparison of findings with current QA standards.

### **Screening Surgical Caseload**

In order to calculate the screening caseload of every surgeon working within the UK NHSBSP, each woman was assigned the GMC code relating to her consultant surgeon to eliminate double-counting of surgeons across screening services.

### **Adjuvant Therapy Audit**

Each screening surgeon was asked to collect information for those women with a date of first offered appointment from 1<sup>st</sup> April 2001 to 31<sup>st</sup> March 2002 inclusive. Information was sought regarding start dates for radiotherapy, chemotherapy and hormone therapy, where applicable. These data were linked to data collected in the main audit for 2001/02 to provide information on waiting times for adjuvant therapy and patterns of treatment.

### **Survival Audit**

The survival audit utilised existing links between QA Reference Centres and Regional Cancer Registries to obtain death data for women with screen detected cancer. Details of the women with screen detected breast cancer diagnosed between 1<sup>st</sup> April 1997 and 31<sup>st</sup> March 1998 were obtained by the breast screening services and matched with databases held at regional cancer registries to identify the date of death for any woman who died on or before 31<sup>st</sup> March 2003. Death data collected in previous audits for women with screen detected breast cancer diagnosed between 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1997 were updated in order to provide relative survival probabilities for a period of up to 10 years post diagnosis. For the first time, cancer registries were asked to provide the diagnosis date of the primary tumour corresponding to the screen detected cancer so that only primary screen detected cancers were included in the survival analysis.

Responsibility for survival audit data collection rested with Regional Breast Screening QA Co-ordinators. Effective communication and collaboration with regional cancer registries was a vital element in the success of the survival audit.

## **RESPONSIBILITY FOR DATA COLLECTION**

ABS at BASO breast audit information packs were sent to NHSBSP representatives in each NHS region in England and to Wales, Scotland and Northern Ireland. Data for the 8 English regions and data for Wales, Northern Ireland and Scotland are presented in this document. Data for the South East region have been subdivided in the audit into South East (East) and South East (West) (see the map on Page 5).

In each region the Surgical QA Co-ordinator, QA Director and QA Co-ordinator were responsible for working together to ensure that the data were collected from their breast screening services. Lead surgeons in each breast screening service were responsible for making sure that the data were available and complete. Lead surgeons in each screening service were asked to give confirmation to their QA Co-ordinator that the data for their breast screening service were a fair representation of screening activity in the audit period (to “sign off” the data). The QA Co-ordinator in each region was given the responsibility for ensuring that data were signed off before submission.

Identifying people responsible for ensuring that data are gathered and are a true reflection of surgical work is intended to clarify ownership of the information for this audit. Ownership of the information is essential if a need for change is highlighted which must be accepted and implemented.

The ground level data collection was carried out by a range of staff, including individual surgeons, QA reference centre staff, breast screening service office staff, staff at regional cancer registries, oncology staff, some non-surgical clinicians who have an interest in QA and some dedicated surgical data collection officers. For those screening services supported by the National Breast Screening System a set of standard analytical co-writer reports was designed to allow the audit data to be retrieved from screening computer systems. These reports were created by Mrs Margot Wheaton and were available to all regions. Data were collated on a regional basis by QA Reference Centres under the direction of the Surgical QA Co-ordinators, QA Directors and QA Co-ordinators and submitted to the West Midlands QA Reference Centre for collation and evaluation.

## **OBTAINING COMPLETE AND VALID AUDIT DATA**

Ensuring that audit data were supplied in a consistent format was essential to the validation process. The West Midlands QA Reference Centre developed specialist spreadsheets in Microsoft Excel which were used by each regional QA Reference Centre to collate regional data in a standard format. Individual screening services could either provide the data to their regional QA Reference Centre in the Excel spreadsheet or by hand on a paper copy. The spreadsheet included data validation checks. A specially designed spreadsheet was also provided for the survival audit. The collection of data at breast screening service/unit level involved detailed consideration of cases and cross checks against existing KC62 reports.

## **DATA EVALUATION**

The West Midlands QA Reference Centre, guided by the Breast Audit Group, acted as the central collection and collation point for national data. During the collation of national data, extensive validation checks were used to ensure that the data were an accurate reflection of surgical activity in the UK NHSBSP. National data were evaluated in comparison to current QA standards where these were available. Commentary and recommendations have been made by the ABS at BASO Breast Audit Group.

## **PRESENTATION AND PUBLICATION OF AUDIT DATA**

The ABS at BASO 2002/03 audit of screen detected breast cancers is published as a booklet with financial assistance from NHSBSP National Office and presented at the annual ABS at BASO meeting on 26<sup>th</sup> May 2004 by Dr Gill Lawrence with commentary by Professor Jan Frisell.

Following the ABS at BASO meeting, the booklet and presentation will be available to download from the following web sites.

West Midlands Cancer Intelligence Unit  
NHS Cancer Screening Programmes

[www.wmpho.org.uk/wmcui/](http://www.wmpho.org.uk/wmcui/)  
[www.cancerscreening.nhs.uk](http://www.cancerscreening.nhs.uk)

## **REFERENCING THIS DOCUMENT**

This document, and the presentation, should be cited in the following way. "An audit of screen detected breast cancers for the year of screening April 2002 to March 2003", NHSBSP, ABS at BASO, 26<sup>th</sup> May 2004.

## **USING THE AUDIT DATA TO IMPROVE PERFORMANCE**

Recommended uses of the ABS at BASO breast audit data are as follows:

### **At National Level**

- The ABS at BASO breast audit data should be considered formally at a meeting of the Regional Breast Screening QA Directors to identify recommendations for action, where performance does not meet a QA standard. This may include suggestions for training and recommendations for the management and organisation of services.

### **At Local/Regional Level**

- The annual ABS at BASO breast audit data should be considered formally at a meeting of the Regional Breast Screening QA Team and preferably also at a regional workshop where the data for individual screening units in each region are analysed and presented.
- Where the audit identifies a screening service as an 'outlier' in a particular area, Regional QA Reference Centres and Regional QA Surgeons should encourage screening services to audit the cases involved to establish whether the results reflect a data collection or recording problem. If the data are found to represent clinical practice correctly, the reasons for the failure to follow recommended guidelines should be ascertained.
- Regional QA Reference Centres and Regional QA Surgeons should follow up any failures to meet national QA standards with individual screening services. There should be formal recording of the plans put in place to achieve each of the standards failed, and routine monitoring to ensure that action has been taken to rectify the problem.
- The annual ABS at BASO breast audit data should also be used to celebrate high quality services. Attention should not only be focused on failure to meet QA standards. Achievement of standards should also be recorded and recognition for high quality work given. It is important that audits such as this do not demoralise the dedicated professionals within the breast cancer screening and treatment teams.

## **YOUR COMMENTS**

The ABS at BASO audit of screen detected breast cancer has developed over the years, with improvements in design and organisation resulting in improved data quality and increasingly useful audit results. To continue this development process your comments and suggestions are extremely useful. If you have any comments or suggestions about the 2002/03 audit; about this document or about the development of future ABS at BASO breast audits please put them in writing to:

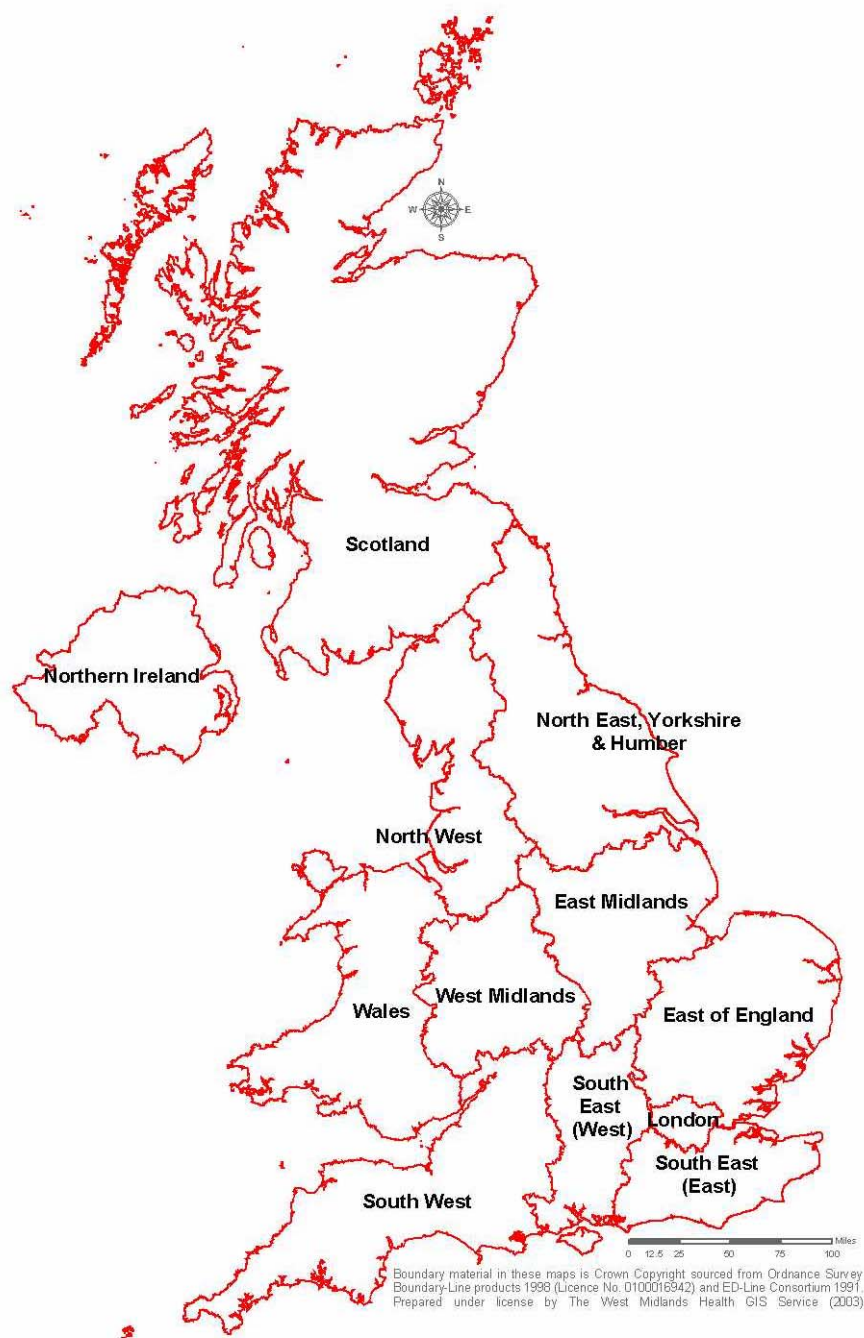
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## PROVISION OF DATA FOR THE 2002/03 AUDIT

The map below shows the 8 NHS regions, Wales, Scotland and Northern Ireland for the boundaries revised on 1<sup>st</sup> April 2003. Data for the South East health region are subdivided into the 2 QA Reference Centre boundaries, South East (East) and South East (West). Boundary changes affected the North West, North East, Yorkshire & Humber, East Midlands and South East (West) QA Reference Centres.

All regions submitted data for 2002/03 and adjuvant therapy data for 2001/02. 9 out of 12 QA Reference Centres supplied complete data for the 1992/98 survival audit. Scotland did not submit data for the survival audit due to cancer registry linkage problems. East of England and London only submitted 1997/98 data to the survival audit due to cancer registry linkage problems.



## **KEY FINDINGS AND RECOMMENDATIONS**

### **CANCERS DETECTED BY SCREENING**

1,582,269 women were screened by the UK NHSBSP in England, Wales, Northern Ireland and Scotland between 1<sup>st</sup> April 2002 and 31<sup>st</sup> March 2003. 11,593 cancers were detected in women of all ages. This equates to a cancer detection rate of 7.3 cancers per 1000 women screened. 81% of women with a screen detected breast cancer were aged between 50 and 64 when they were invited for the screening appointment leading to their diagnosis.

### **PRE-OPERATIVE DIAGNOSIS**

In 2002/03, 91% of cancers detected in the UK NHSBSP were diagnosed pre-operatively, exceeding the 90% target for the first time. The pre-operative diagnosis rates for invasive and non-invasive cancers were 95% and 76% respectively. 55 screening units met or exceeded the pre-operative diagnosis rate target of 90%. It is very good to see that all but 4 screening units met the new 80% minimum standard. In the UK as a whole, the increase in the pre-operative diagnosis rate from 87% in 2000/01 to 91% in 2002/03 has been accompanied by a fall from 19% to 10% in the proportion of cancers diagnosed by C5 cytology alone.

For 24% of cancers with a B5a (Non-invasive) pre-operative diagnosis, invasive disease was found at surgery. This varied between 0 cases and 69% in the individual screening units with more than 15 cancers diagnosed by core biopsy. 97% of the cancers with a B5b (Invasive) pre-operative diagnosis had surgical confirmation of invasive cancer, the invasive status predicted by core biopsy. 69 cases (1%) with a B5b (Invasive) pre-operative diagnosis were found to have non-invasive or micro-invasive cancer with no associated invasive disease following surgery. 93% of cancers diagnosed by C5 cytology alone were found to be invasive after surgery.

It is possible that increases in pre-operative diagnosis have led to more anxiety, with women having to return to the assessment clinic for repeat diagnostic tests before receiving a definitive diagnosis. However, this year's audit has shown that 84% of women with screen detected breast cancer had all attempts at core biopsy and/or cytology performed at 1 assessment clinic visit. 78% of the cancers detected by the screening programme had a pre-operative diagnosis of cancer determined from a single assessment clinic visit. This value is 81% if East of England, which had difficulty providing the data, is excluded. Of the remaining regions, 5 had a pre-operative diagnosis rate below the 80% minimum standard after the first assessment clinic visit. All 5 achieved the minimum standard when repeat assessment clinic visits were included and 4 achieved the 90% target.

### **DIAGNOSTIC OPEN BIOPSIES**

In the UK as a whole, 2,919 diagnostic open biopsies were performed in 2002/03. Of these 65% were benign and 35% were malignant. The benign open biopsy rate was 1.20 per 1000 women screened and the malignant open biopsy rate was 0.64 per 1000 women screened. The malignant open biopsy rate has fallen from 2.04 per 1000 in 1996/97 as the pre-operative diagnosis rate has increased from 63% to 91%.

Of the 445 invasive cancers diagnosed by open biopsy, 36 (8%) had no pre-operative procedure recorded. Of the 560 non-invasive cancers diagnosed by open biopsy, 17 (3%) had no pre-operative procedure recorded. Regional QA Reference Centres and Regional QA Surgeons should audit these 53 cases to establish whether they reflect a data collection problem. If the data are found to represent clinical practice correctly, the reasons for the failure to attempt pre-operative diagnosis should be ascertained. 42% of invasive cancers diagnosed by malignant open biopsy following

cytology or core biopsy performed during the assessment process had C4 cytology or B4 core biopsy indicating suspicion of malignant disease.

## **SURGICAL TREATMENT**

Overall, 69% of non-invasive and micro-invasive cancers were treated with conservation surgery, varying from 58% in Wales and 62% in North East, Yorkshire & Humber to 76% in London and 79% in Northern Ireland. 32 screening units were able to provide grade and size data for all non-invasive cancers. In the screening units with complete data, 55% of non-invasive cancers were high grade and 47% were <15mm in diameter. 239 high grade multi-focal, large multi-focal, large high grade and potentially large high grade non-invasive cancers were treated with conservation surgery. Regional QA Reference Centres and Regional QA Surgeons should review the data recorded for these cases to ensure that they were not under-treated.

In the UK as a whole, the mastectomy rate for invasive cancers was 27%. This varied between 12% and 57% in individual screening units. 81% of 50+mm invasive cancers were treated with mastectomy compared with 19% of small (<15mm) invasive cancers. For 7 screening units, with between 7 and 67 small (<15mm) invasive cancers, the mastectomy rate was 35% or more. Only 15% of cancers with whole size <15mm were treated with mastectomy compared with 19% of cancers with invasive size <15mm. These data suggest that the presence of *in situ* disease accounts for a proportion of the mastectomies performed on tumours with invasive size <15mm. 8% of cancers treated with mastectomy were recorded as having immediate reconstruction.

## **LYMPH NODES AND INVASIVE GRADE**

In the UK as a whole, 95% of invasive cancers had known nodal status. This varied between 86% in Northern Ireland and 99% in Wales and West Midlands. At 10 screening services nodal status was ascertained for 100% of invasive cancers. In 2 screening units diagnosing 31 and 89 invasive cancers, more than 25% of cases had unknown nodal status. For the fourth consecutive year, 25% of invasive cancers had positive nodal status, but this varied between 10% and 47% in individual screening units.

Overall, 8.8% of invasive cancers had unknown nodal status, or had negative nodal status determined without a sentinel procedure on the basis of fewer than 4 nodes. This varied from 4.0% in Scotland and 4.1% in West Midlands, to 17.7% in London and 14.7% in Northern Ireland. Regional QA Reference Centres and Regional QA Surgeons should audit these cases to ascertain whether the data are a true reflection of clinical practice, as these cancers may have had an insufficient diagnostic work-up.

Although nodal assessment is not usually indicated for non-invasive cancers, 26% of non-invasive cancers had known nodal status. 2% of non-invasive cancers with known nodal status had positive nodal status recorded. This is consistent with previous studies suggesting that 2% of non-invasive breast cancers have non-identified invasive disease removed during the diagnostic process. The mastectomy rate for non-invasive cancers with known nodal status was much higher than for non-invasive cancers with no nodes obtained (76% and 13% respectively in the UK as a whole). 56% of conservatively treated non-invasive cancers with known nodal status had non-invasive disease predicted by B5a core biopsy. Radiological or clinical factors may have influenced the decision to take nodes for these cases.

Overall, 32% of invasive cancers were Grade I, 47% were Grade II and 16% were Grade III. In Northern Ireland, 24% of cancers were Grade III. Grade was not assessable for 78 cases (1%) and unknown for 309 cases (3%). The proportion of Grade I cancers varied between 7% and 65% in

individual screening units, suggesting that there are local variations in the interpretation of invasive grade definitions.

Data were available to calculate the Nottingham Prognostic Index (NPI) for 92% of invasive cancers. As expected with cancers detected by screening, the majority (61%) of cancers fell into the two best prognostic groups, EPG (Excellent Prognostic Group) and GPG (Good Prognostic Group). The proportion of EPG and GPG cancers varied from 54% in Northern Ireland to 65% in Wales. The relatively low proportion of EPG and GPG cancers in Northern Ireland is due to the high proportion of Grade III cancers compared with the UK as a whole.

## **SURGICAL CASELOAD**

There were 472 consultant breast surgeons working in the UK NHSBSP in 2002/03, a rise of 13% from 419 surgeons in 2000/01. 86% of women were seen by a surgeon with a screening caseload of at least 20 cases. Of the 174 surgeons with a screening caseload of less than 10 cases, 52 (30%) treated more than 30 symptomatic breast cancers during 2002/03. Information was unavailable to explain the low caseload of 55 surgeons. These surgeons treated a total of 164 women.

## **NUMBER AND SEQUENCE OF OPERATIONS**

In the UK as a whole, 15% of cancers with a proven pre-operative diagnosis by C5 cytology and/or B5 core biopsy underwent more than one therapeutic operation. 14% of invasive cancers and 16% of non-invasive cancers underwent more than one therapeutic operation. Invasive cancers with B5b (Invasive) core biopsy had fewest repeat operations (12%), followed by invasive cancers diagnosed by C5 cytology only (13%).

Invasive cancers with a B5a (Non-invasive) core biopsy had the highest repeat operation rate (41%). 62% of invasive cancers with a B5b (invasive) core biopsy underwent a single therapeutic operation consisting of conservation surgery with an axillary procedure. A further 5% of cases had conservation surgery with an axillary procedure followed by conservation surgery, presumably to clear involved or close margins. Only 1% of invasive cancers with a B5b (Invasive) core biopsy had a repeat operation to obtain axillary lymph nodes, compared to 3% diagnosed by C5 cytology only and 34% with a B5a (Non-invasive) core biopsy.

5% of invasive cancers with a B5b (Invasive) core biopsy or a C5 cytology had no axillary procedure recorded. For invasive cancers with a B5a (Non-invasive) core biopsy, this was 14%. This could be a data collection problem. However, if the data do correctly reflect clinical practice, these cases should be audited by Regional QA Reference Centres and Regional QA Surgeons as they may have had insufficient diagnostic work-up.

64% of invasive cancers diagnosed by C5 cytology only underwent a single therapeutic operation consisting of conservation surgery with an axillary procedure. A further 16% these cancers underwent a single therapeutic operation consisting of a mastectomy and an axillary procedure. Presumably in these cases, the clinical and radiological signs were strongly supportive of the presence of invasive disease.

23% of invasive cancers with a B5a (Non-invasive) core biopsy underwent a single operation consisting of conservation surgery with an axillary procedure. Presumably in these cases, contrary to the core biopsy result, the clinical and radiological signs were strongly supportive of the presence of an invasive cancer. 24% of non-invasive or micro-invasive cancers with a B5a (Non-invasive) core biopsy underwent axillary surgery at the first therapeutic operation. It would be interesting to

know the reasons for undertaking surgery to the axilla at the first operation as it would appear that these women may have undergone an unnecessary axillary procedure.

## **ADJUVANT THERAPY**

The proportion of cases with radiotherapy, chemotherapy or hormonal therapy data supplied varied from 54% in East of England to 97% in Wales and 100% in East Midlands. This shows that regions with established systems for data collection find it easier to collect these data than regions that rely on surgeons reviewing case notes to complete the ABS at BASO adjuvant audit.

For 4% of cases in the audit, ER status was not done. ER status was unknown for 17% of cases. 9% of invasive cancers had unknown or not done ER status, compared to 63% of non-invasive cancers. Given the importance of ER status in determining adjuvant therapy, Regional QA Reference Centres and Regional QA Surgeons should ascertain the reasons why ER status was not available. For the 79% of cases with known ER status, the ratio of ER positive to ER negative cases was 7:1. PgR status data were available for only 30% of all cases but 50% of ER negative cancers, suggesting that in some regions PgR status was not requested routinely but only when ER status was negative. Cerb-B2/HER-2 status data were available for only 11% of cases included in the audit.

Only 51% of cases undergoing diagnostic surgery had this surgery within 30 days of assessment. Only 60% of cases with a pre-operative diagnosis underwent therapeutic surgery within 30 days of assessment. Only 33% of cases with 1 operation received radiotherapy within 60 days of this surgery. For cases with more than 1 operation, only 7% of cases received radiotherapy within 60 days of first surgery. 86% of cases with 1 operation received chemotherapy within 60 days of this surgery. For cases with more than 1 operation, only 39% of cases received radiotherapy within 60 days of first surgery. In 2001/02, Women in London and South East (East) were experiencing the longest waiting times for treatments. Wales had particularly short waiting times for surgery, while Scotland and East Midlands had relatively short waiting times for radiotherapy. 10% of cases receiving hormonal therapy started this therapy before surgery. Given the potential thromboembolic effects of tamoxifen, Regional QA Reference Centres and Regional QA Surgeons should ascertain whether this practise has now ceased.

The most popular treatment order for screen detected breast cancers was one or more operations followed by radiotherapy alone without chemotherapy, followed by 50% of cases. The median number of days from the first assessment appointment to the start of the final therapy was 94 days, varying from 84 days in Scotland to 124 days in South East (East). The median time in days from assessment to final therapy was 33 days for women undergoing surgery alone, compared to 108 days for assessment to surgery followed by radiotherapy and 218 days for assessment to surgery followed by chemotherapy followed by radiotherapy. The median time from assessment to surgery to chemotherapy was 76 days. The good practice in East Midlands and Scotland which in 2001/02 led to the shortest intervals between assessment and final therapy should be shared throughout the UK.

89% of women with invasive cancers treated with conservation surgery received radiotherapy, compared to only 48% of women with conservatively treated non-invasive cancer. The majority of conservatively treated cancers without radiotherapy were small (<15mm diameter) 65% invasive, 58% non-invasive). 62% of conservatively treated non-invasive cancers not given radiotherapy were other (low or intermediate) grade. Regional QA Reference Centres and Regional QA Surgeons should audit larger invasive cancers and large or high grade non-invasive tumours that did not receive radiotherapy to ensure that these cancers did not have less than optimal treatment.

85% of women with ER negative, node positive invasive cancers received chemotherapy compared to 49% of ER negative, node negative invasive cancers. This implies that nodal status was taken into account when deciding whether ER negative tumours would benefit from chemotherapy. 84% of ER negative, node negative tumours given chemotherapy were Grade III. It would be interesting to examine the size of these Grade III cancers and the size and grade of the node positive cancers that did not receive chemotherapy to see if these factors also influenced the decision not to give chemotherapy.

Overall, 9% of ER positive cancers did not receive hormone therapy. 7% of ER positive invasive cancers did not receive hormone therapy (Table 123), compared to 33% of ER positive non-invasive cancers. Regional QA Reference Centres and Regional QA Surgeons should determine the reasons why hormone therapy was not given to these cancers. They should also determine why and 16% of ER negative cancers did receive hormone therapy. Although the decision to give hormone therapy appeared to depend ER status and PgR status, some cancers were given hormone therapy when ER or PgR status was not done or unknown. 67% of ER negative, PgR positive cancers did receive hormone therapy compared with only 14% of ER negative, PgR negative cancers. The number of cancers with known PgR status was, however, very small so these data should be treated with caution.

## **SURVIVAL**

Of the 31,200 cancers with known invasive status submitted to the survival analysis for the period 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1998, 885 (3%) were excluded because they were not registered at the cancer registry. A further 919 cancers (3%) were excluded because the cancer registry could not confirm that the cancer detected by screening was the primary tumour. The survival analysis included 29,396 screen detected cancers. Of these, 23,756 were invasive cancers, 617 micro-invasive cancers and 5023 non-invasive cancers.

Data completeness has improved markedly in the 6 year period studied. The proportion of invasive cancers with unknown size has fallen from 7% in 1992/93 to 2% in 1997/98. The proportion of invasive cancers with unknown NPI score has decreased from 54% in 1992/93 to 20% in 1997/98. Cause-specific survival was not performed due to regional differences in the proportion of breast cancer deaths.

5 year relative survival for invasive cancers screen detected in 1997/98 was 95.8% (95%CI 95.0-96.5). 5 year relative survival for invasive cancers screen detected in 1997/98 was highest for small (<10mm diameter), node negative, Grade I cancers. 10 year relative survival for invasive cancers screen detected in 1992/93 was 87.8% (95%CI 86.3-89.3).

The 5 year relative survival rate in 1995-98 for tumours in the excellent prognostic group (EPG) was 100.9% (95% CI 100.1%-101.6%), indicating that their chance of survival was no worse than that of the general UK female population. For women with tumours in the poor prognostic group (PPG) the 5 year relative survival rate increased from 57.8% (95% CI 52.8%-62.8%) in 1992-95 to 66.7% (95% CI 62.6%-70.8%) in 1995-98.

## RESULTS OF THE 2002/03 AUDIT OF SCREEN DETECTED BREAST CANCERS

Detailed tables giving full audit results are provided in Appendices 5-8 starting on p101

### DATA RELATING TO BREAST CANCERS DETECTED IN WOMEN OF ALL AGES DURING THE PERIOD 1<sup>ST</sup> APRIL 2002 - 31<sup>ST</sup> MARCH 2003

#### 1. ALL BREAST CANCERS DETECTED BY THE UK NHSBSP IN 2002/03

##### 1.1 Number and Invasive Status of Screen Detected Breast Cancers and Total Women Screened

The 2002/03 BASO breast audit examined surgical screening activity undertaken for the 1,582,269 women screened in England, Wales, Northern Ireland and Scotland between 1<sup>st</sup> April 2002 and 31<sup>st</sup> March 2003. All 11,593 cancers detected by the UK NHSBSP in women of all ages were examined. This equates to a cancer detection rate of 7.3 cancers per 1000 women screened. Figure 1 shows the invasive status of these 11,593 breast cancers. Overall, 9,086 (78%) were invasive, 2,348 (20%) non-invasive and 114 (1%) micro-invasive. The invasive status of 45 cancers was unknown. 25 (55%) of these were in East of England.

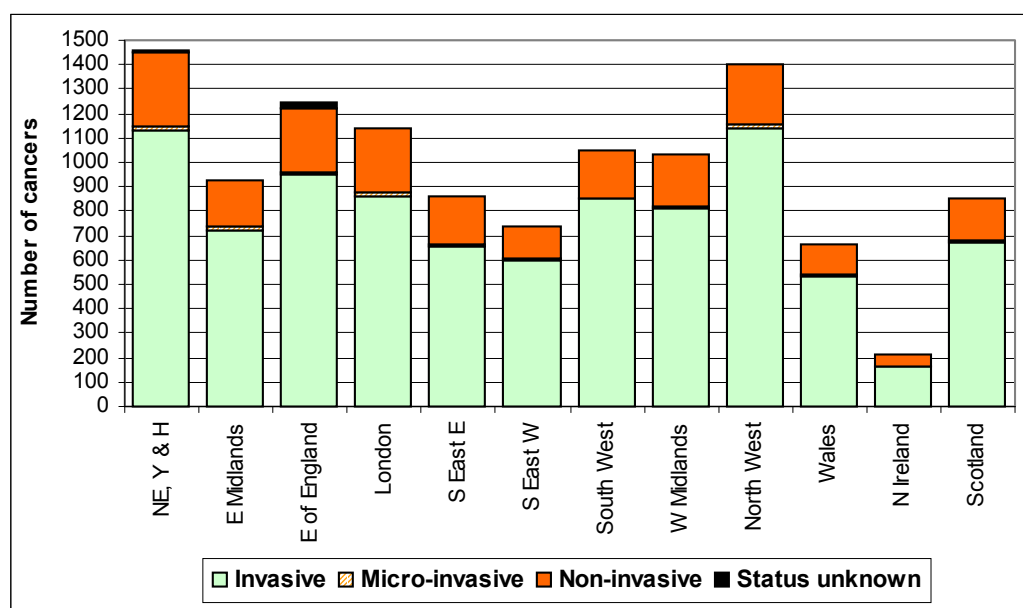
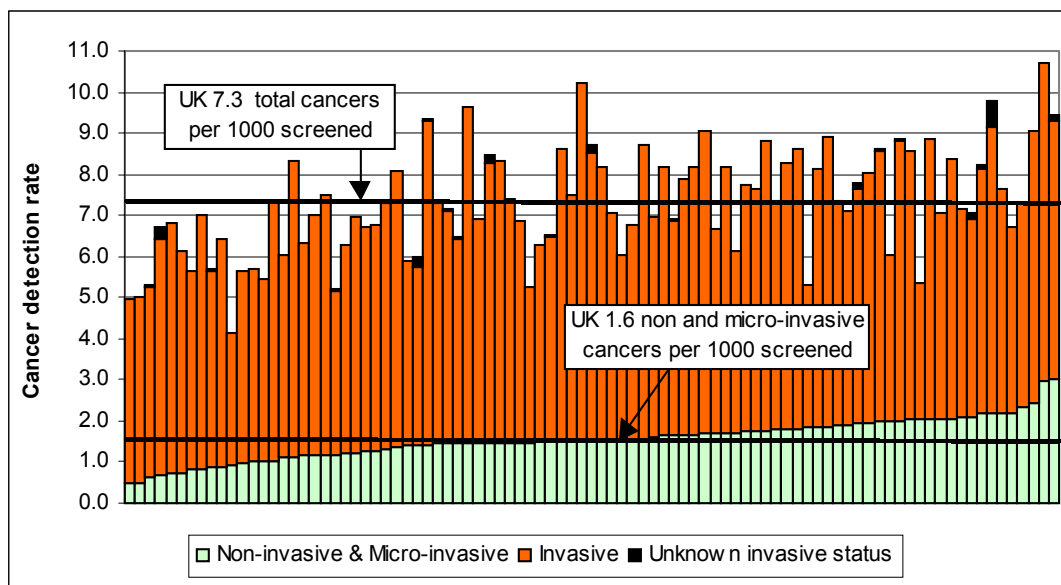


Figure 1 (Table 1): Variation in the number and invasive status of screen detected breast cancers in each region and country contributing to the 2002/03 BASO breast audit

The UK invasive cancer detection rate was 5.7 per 1000 women screened, varying between 5.1 per 1000 in Northern Ireland and 6.8 per 1000 in Wales.

The UK non-invasive cancer detection rate of 1.6 per 1000 women screened includes both non-invasive and micro-invasive cancers. This rate varied from 1.3 per 1000 women screened in South East (West) to 1.8 per 1000 in London.

Figure 2 shows the cancer detection rate in each screening unit according to invasive status. In Figure 2, as with all others depicting individual screening unit data, Scotland appears as one unit, and is not divided into 6 screening centres. The non-invasive cancer rate varied from 0.5 per 1000 women screened to 3.0 per 1000 women screened. The total cancer detection rate varied from 4.2 per 1000 women screened in a unit screening 5,688 women to 10.7 per 1000 women screened in a unit screening 11,866 women.



**Figure 2: Variation by screening unit in the overall cancer detection rate expressed as the number of cancers detected per 1000 women screened**

The following table shows that invasive and non-invasive cancer detection rates have risen steadily since 1996/97. The non-invasive cancer detection rate has risen by 40% and the invasive cancer detection rate has risen by 29% since 1996/97. The overall cancer detection rate has risen by 35% since 1996/97.

| <b>7 YEAR COMPARISON:<br/>NUMBER OF CANCERS DETECTED</b> |                                           |                                                                           |                          |                                         |                                                           |                     |              |
|----------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------|--------------------------|-----------------------------------------|-----------------------------------------------------------|---------------------|--------------|
| <b>Year of<br/>data<br/>collection</b>                   | <b>Number of<br/>invasive<br/>cancers</b> | <b>Number of<br/>non-invasive<br/>and micro-<br/>invasive<br/>cancers</b> | <b>Total<br/>cancers</b> | <b>Number of<br/>women<br/>screened</b> | <b>Cancer detection rates per<br/>1000 women screened</b> |                     |              |
|                                                          |                                           |                                                                           |                          |                                         | <b>Invasive</b>                                           | <b>Non-invasive</b> | <b>Total</b> |
| 1996/97                                                  | 5860                                      | 1468                                                                      | 7310                     | 1,340,175                               | 4.4                                                       | 1.1                 | 5.5          |
| 1997/98                                                  | 6427                                      | 1726                                                                      | 8215                     | 1,419,287                               | 4.5                                                       | 1.2                 | 5.8          |
| 1998/99                                                  | 6337h                                     | 1634                                                                      | 8028                     | 1,308,751                               | 4.7                                                       | 1.2                 | 6.1          |
| 1999/00                                                  | 7675                                      | 2076                                                                      | 9797                     | 1,550,285                               | 5.0                                                       | 1.3                 | 6.3          |
| 2000/01                                                  | 7945                                      | 2080                                                                      | 10079                    | 1,535,019                               | 5.2                                                       | 1.4                 | 6.6          |
| 2002/03                                                  | 7911                                      | 2218                                                                      | 10191                    | 1,507,987                               | 5.2                                                       | 1.5                 | 6.8          |
| 2002/03                                                  | 8931                                      | 2416                                                                      | 11593                    | 1,579,165                               | 5.7                                                       | 1.6                 | 7.3          |

Data from Scotland are absent in 1998/99

## 1.2 Age Profile of Women with Screen Detected Breast Cancer

The NHSBSP is in the process of expanding the screening programme to invite women up to the age of 70. The date of birth has been collected for the first time in the 2002/03 audit so that regional QA Reference Centres can monitor the effect that the new age range has on their audit results.

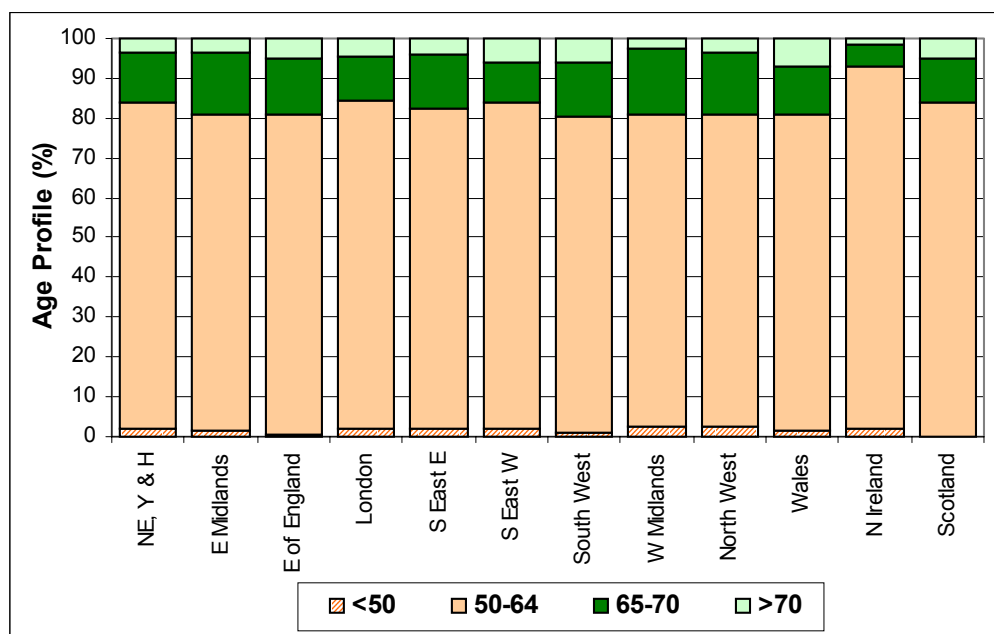


Figure 3 (Table 2): Age at screening appointment

The majority (81%) of women with a screen detected breast cancer were aged between 50 and 64 when they were invited for the screening appointment leading to their diagnosis. 13% were aged 65-70. The proportion of screen detected breast cancers in women aged 65-70 varied from 6% in Northern Ireland to 16% in East Midlands and 17% in West Midlands. In West Midlands the largest screening service, which covers over 20% of the regional population, was a pilot site for the age extension. The table below shows that, in the UK as a whole, 17% of screen detected breast cancers were detected in women aged 50-52 and 16% each in women aged 53-55, 56-58, 59-61 and 62-64. The proportion of screen detected breast cancers in women aged 65-67 was 7% and in women aged 68-70 was 6%. In 2002/03, the majority of these women self referred into the screening programme. With the expansion of the screening programme, more women in this age band will be invited for screening and the proportion of cancers detected in women in these age bands is expected to rise.

| <b>AGE OF SCREEN DETECTED BREAST CANCERS</b> |              |            |
|----------------------------------------------|--------------|------------|
| <b>Age</b>                                   | <b>No</b>    | <b>%</b>   |
| <50                                          | 204          | 2          |
| 50-52                                        | 1922         | 17         |
| 53-55                                        | 1807         | 16         |
| 56-58                                        | 1878         | 16         |
| 59-61                                        | 1908         | 16         |
| 62-64                                        | 1828         | 16         |
| 65-67                                        | 843          | 7          |
| 68-70                                        | 688          | 6          |
| 70+                                          | 515          | 4          |
| <b>Total</b>                                 | <b>11593</b> | <b>100</b> |

## 2. DIAGNOSIS OF CANCERS

The following are mutually exclusive diagnostic categories into which all screen detected breast cancers fall:

| DIAGNOSTIC CATEGORIES                                                |                       |                                                                         |
|----------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------|
| Pre-operative diagnosis by C5 cytology or malignant core biopsy (B5) | Malignant open biopsy | Clinical and/or radiological grounds only, referred direct to treatment |

The UK NHSBSP definition of a non-operative diagnosis is a diagnosis by C5 cytology or B5 core biopsy. Although “non-operative” is becoming the accepted terminology in the NHSBSP, core biopsy and cytology were referred to as pre-operative procedures in the 2002/03 audit documentation (see Appendix 2) and therefore the term “pre-operative diagnosis” is used throughout this document.

Other than cancers diagnosed by diagnostic open biopsy, the only remaining diagnostic category is that of diagnosis on radiological and/or clinical grounds alone. Such cancers are rare in the UK NHSBSP. They are only included in Table 3 of this audit, which shows there were 10 such cancers in 2002/03.

### 2.1 Pre-operative Diagnosis

#### 2.1.1 Pre-operative Diagnosis Rate for All Cancers

The pre-operative diagnosis standards have been revised. The minimum standard is 70% in the current version of the National Standards. The revision of the minimum standard to 80% has been agreed and will be published later in the year. The standard has already been updated in the third edition of the surgical guidelines.

**Quality Objective:** To ensure that the majority of breast cancers receive a non-operative tissue diagnosis of cancer

**Minimum Standard:**  $\geq 70\%$  of breast cancers should have a pre-operative diagnosis by fine needle cytology or needle histology.

**Target Standard:**  $\geq 90\%$  of breast cancers should have a pre-operative diagnosis by fine needle cytology or needle histology.

(Guidelines on Quality Assurance Visit. Sheffield, NHS Cancer Screening Programmes, 2000 (NHSBSP Publication No 40, second edition))

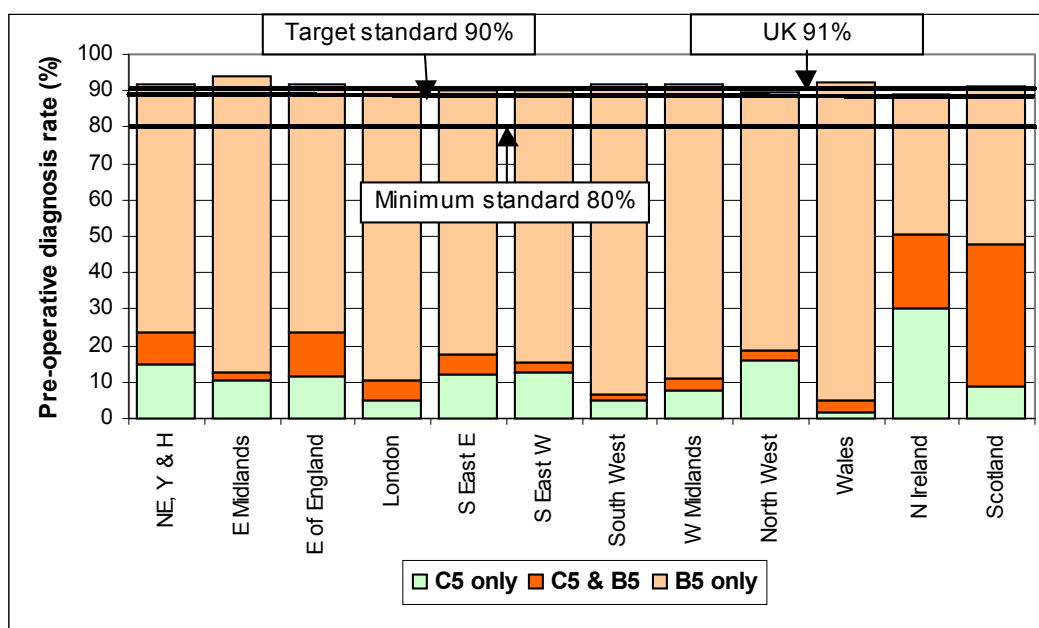
**Quality Objective:** To minimise unnecessary surgery  
(ie open surgical biopsies that prove to be benign)

**Outcome Measure:** More than 80% of breast cancers should have a pre-operative pathological diagnosis

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, November 2003)

In 2002/03, 91% of cancers detected in the UK NHSBSP were diagnosed pre-operatively, exceeding the 90% target for the first time. Figure 4 shows the pre-operative diagnosis rate by C5 cytology, by both C5 cytology and B5 core biopsy and by B5 core biopsy alone. All the regions

met the target of 90% except Northern Ireland and North West where the pre-operative diagnosis rates were both 89%. These 2 regions had the highest proportion of cancers diagnosed by C5 cytology only (30% and 16% respectively). The highest pre-operative diagnosis rate (94%) was recorded in East Midlands.



**Figure 4 (Table 4): Variation in pre-operative diagnosis rate and the proportion of cancers detected by cytology alone, core biopsy alone or cytology and core biopsy, as a percentage of cancers detected**

Over the last 7 years, the pre-operative diagnosis rate for the UK as a whole has risen from 63% to 91%. This rise has been accompanied by an increase from 17% to 73% in the proportion of cancers diagnosed by B5 core biopsy alone.

| <b>7 YEAR COMPARISON:<br/>PRE-OPERATIVE DIAGNOSIS RATES</b> |                      |                                            |                                          |                  |                    |                        |                                         |
|-------------------------------------------------------------|----------------------|--------------------------------------------|------------------------------------------|------------------|--------------------|------------------------|-----------------------------------------|
| <b>Year</b>                                                 | <b>Total cancers</b> | <b>Number of cancers with C5 and/or B5</b> | <b>% with pre-operative diagnosis by</b> |                  |                    |                        | <b>Pre-operative diagnosis rate (%)</b> |
|                                                             |                      |                                            | <b>C5 only</b>                           | <b>C5 and B5</b> | <b>C5 (+/- B5)</b> | <b>B5 only (no C5)</b> |                                         |
| 1996/97                                                     | 7310                 | 4576                                       | -                                        | -                | 45                 | 17                     | 63                                      |
| 1997/98                                                     | 8215                 | 5866                                       | -                                        | -                | 42                 | 29                     | 71                                      |
| 1998/99                                                     | 8002                 | 6449                                       | -                                        | -                | 36                 | 44                     | 81                                      |
| 1999/00                                                     | 8906                 | 7590                                       | -                                        | -                | 31                 | 54                     | 85                                      |
| 2000/01                                                     | 10079                | 8775                                       | 19                                       | 8                | -                  | 60                     | 87                                      |
| 2002/03                                                     | 10191                | 9043                                       | 13                                       | 9                | -                  | 66                     | 89                                      |
| 2002/03                                                     | 11593                | 10575                                      | 10                                       | 8                | -                  | 73                     | 91                                      |

Data from Scotland are absent in 1998/99 and 1999/00

The following summary table shows how the pre-operative diagnosis rates in each region have changed over the last 3 years. It is clear from these data that, in the three regions with the lowest pre-operative diagnosis rates in 2000/01, increases in pre-operative diagnosis have been accompanied by large decreases in the proportion of cancers diagnosed by C5 cytology alone. Thus, in North West, as the pre-operative diagnosis rate has risen by 10% from 81% to 89%, the proportion of cancers diagnosed by cytology alone has fallen by 30%. Similarly, in Wales and Scotland where the pre-operative diagnosis rates have risen from 86% to 92% and 91% respectively, there have been 85% and 70% decreases in the proportion of cancers diagnosed by C5 cytology alone.

| <b>3 YEAR SUMMARY:<br/>PRE-OPERATIVE DIAGNOSIS RATES</b> |                                         |                |                |                           |                                         |                |                |                           |
|----------------------------------------------------------|-----------------------------------------|----------------|----------------|---------------------------|-----------------------------------------|----------------|----------------|---------------------------|
| <b>Region</b>                                            | <b>Pre-operative diagnosis rate (%)</b> |                |                |                           | <b>Cancers diagnosed by C5 only (%)</b> |                |                |                           |
|                                                          | <b>2000/01</b>                          | <b>2001/02</b> | <b>2002/03</b> | <b>3 Year<br/>2000-03</b> | <b>2000/01</b>                          | <b>2001/02</b> | <b>2002/03</b> | <b>3 Year<br/>2000-03</b> |
| <i>N East, Yorks &amp; Humber</i>                        | 87                                      | 88             | 92             | 89                        | 25                                      | 16             | 15             | 18                        |
| <i>East Midlands</i>                                     | 90                                      | 91             | 94             | 92                        | 18                                      | 10             | 10             | 13                        |
| <i>East of England</i>                                   | 87                                      | 90             | 91             | 90                        | 13                                      | 12             | 11             | 12                        |
| <i>London</i>                                            | 88                                      | 89             | 91             | 89                        | 9                                       | 7              | 5              | 7                         |
| <i>South East (East)</i>                                 | 90                                      | 91             | 90             | 91                        | 16                                      | 8              | 12             | 12                        |
| <i>South East (West)</i>                                 | 87                                      | 85             | 90             | 87                        | 19                                      | 15             | 12             | 16                        |
| <i>South West</i>                                        | 89                                      | 90             | 92             | 90                        | 18                                      | 12             | 5              | 11                        |
| <i>West Midlands</i>                                     | 88                                      | 90             | 92             | 90                        | 19                                      | 10             | 8              | 12                        |
| <i>North West</i>                                        | 81                                      | 87             | 89             | 86                        | 22                                      | 21             | 16             | 19                        |
| <i>Wales</i>                                             | 86                                      | 92             | 92             | 90                        | 13                                      | 7              | 2              | 7                         |
| <i>Northern Ireland</i>                                  | 89                                      | 85             | 89             | 88                        | 29                                      | 30             | 30             | 30                        |
| <i>Scotland</i>                                          | 86                                      | 86             | 91             | 88                        | 30                                      | 19             | 9              | 20                        |
| <b>United Kingdom</b>                                    | <b>87</b>                               | <b>89</b>      | <b>91</b>      | <b>89</b>                 | <b>19</b>                               | <b>13</b>      | <b>10</b>      | <b>14</b>                 |

Data reflects boundary changes

Figure 5 shows the pre-operative diagnosis rates achieved by individual screening units, varying from 68% in a screening unit with a total of 31 cancers to 100% in a screening unit with 57 cancers. It is very good to see that all but 4 screening units met the new 80% minimum standard for pre-operative diagnosis. 55 screening units met or exceeded the pre-operative diagnosis rate target of 90%. The screening unit with the lowest pre-operative diagnosis rate in 2000/01 (63%) had a pre-operative diagnosis rate of 85% in 2002/03.

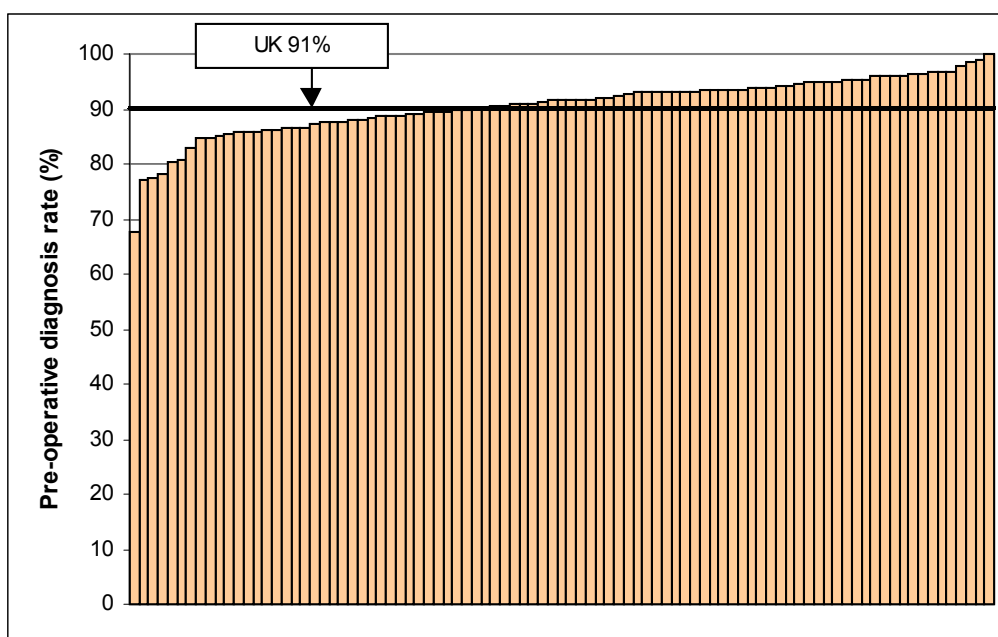
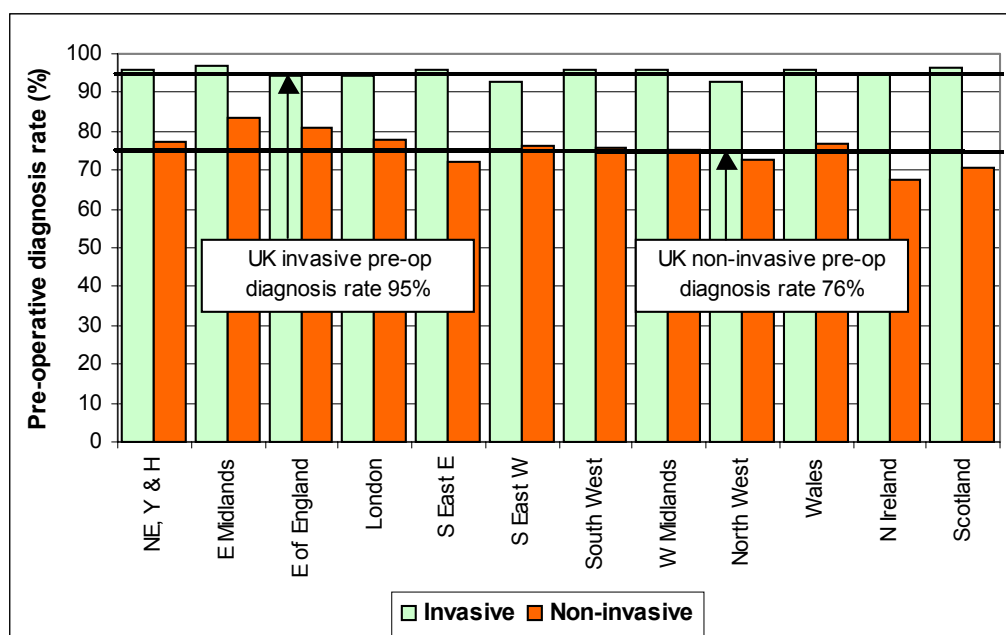


Figure 5: Variation by screening unit in pre-operative diagnosis rate, expressed as a proportion of cancers detected

### 2.1.2 Pre-operative Diagnosis Rate for Invasive and Non-invasive Cancers

The 90% target for pre-operative diagnosis which applies to all cancers was also achieved for invasive cancers. Overall, the pre-operative diagnosis rates for invasive and non-invasive cancers were 95% and 76% respectively. Figure 6 shows the regional variation in these pre-operative diagnosis rates. The pre-operative diagnosis rate for invasive cancers varied from 93% in South East (West) and North West to 97% in Scotland and East Midlands. The pre-operative diagnosis rate for non-invasive cancers varied from 67% in Northern Ireland to 83% in East Midlands.



**Figure 6 (Tables 5, 6): Variation by region in pre-operative diagnosis rates for invasive cancers and non-invasive cancers**

#### **COMMENT:**

- In 2002/03, 91% of cancers detected in the UK NHSBSP were diagnosed pre-operatively, exceeding the 90% target for the first time. The pre-operative diagnosis rates for invasive and non-invasive cancers were 95% and 76% respectively.
- 55 screening units met or exceeded the pre-operative diagnosis rate target of 90%. It is very good to see that all but 4 screening units met the new 80% minimum standard.
- In the UK as a whole, the increase in the pre-operative diagnosis rate from 87% in 2000/01 to 91% in 2002/03 has been accompanied by a fall from 19% to 10% in the proportion of cancers diagnosed by C5 cytology alone.

### **2.1.3 Invasive Status at Pre-operative Core Biopsy**

Screening units were asked to supply the invasive status predicted at core biopsy for those cancers with a B5 diagnosis. Of the 9,370 cancers with a B5 diagnosis, 2,274 (24%) were B5a (Non-invasive), 6,921 (74%) were B5b (Invasive) and 23 cancers had invasive status B5c (Not assessable) at core biopsy. Data on the invasive status at core biopsy were unavailable for 152 (2%) of cases with a B5 diagnosis, of which 75 (49%) were in East of England and 22 (14%) in North West.

Figure 7 shows the variation by region in the invasive status at core biopsy. Northern Ireland had the highest proportion of cancers with B5a (Non-invasive) at core biopsy (35%). This may be related to the relatively high proportion of cancers diagnosed by C5 cytology alone in Northern Ireland (30%, Table 4) and suggests that core biopsy may be used preferentially to diagnose cancers suspected to be non-invasive on the basis of imaging.

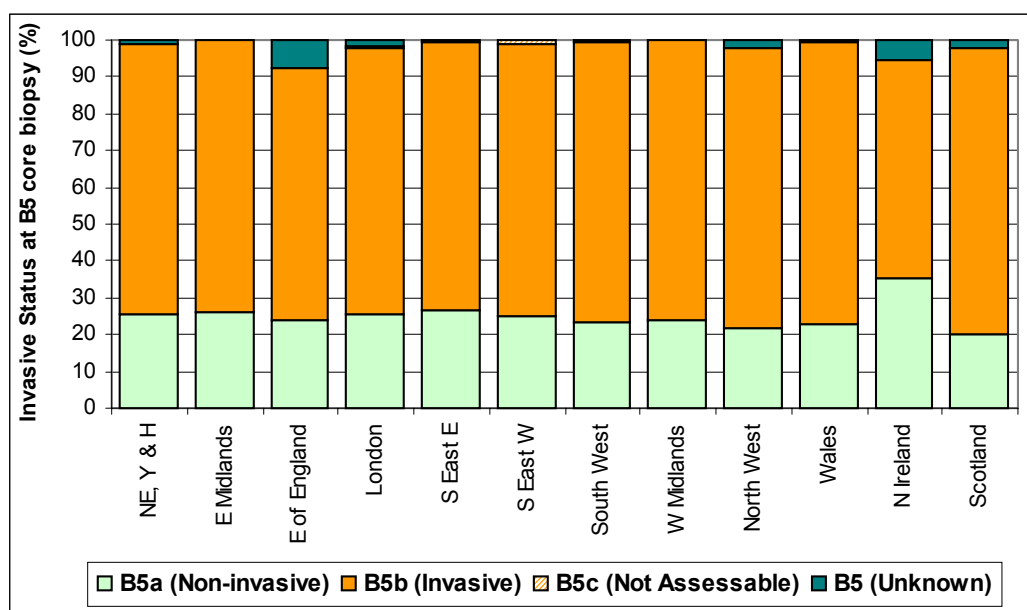


Figure 7 (Table 7): Variation in the proportion of cancers with B5a (Non-invasive), B5b (Invasive) and B5c (Not Assessable) core biopsy diagnosis, expressed as a percentage of cancers diagnosed by core biopsy

#### 2.1.4 Invasive Status at Pre-operative Core Biopsy Compared with Invasive Status After Surgery

The majority of cancers diagnosed by core biopsy go on to have surgery, at which a definitive invasive status is determined. Figure 8 shows, for each region, the invasive status after surgery of the cases with a B5a (Non-invasive) pre-operative diagnosis. Of the 2,274 cancers with a B5a (Non-invasive) pre-operative diagnosis, 1,600 (70%) had surgical confirmation of non-invasive cancer and 87 (4%) had a diagnosis of micro-invasive cancer following surgery. A further 29 cases (1%) had no surgery so the pre-operative diagnosis of non-invasive cancer was retained. For 10 cases with B5a (Non-invasive) core biopsy the invasive status after surgery was unknown. 9 of these were in East of England.

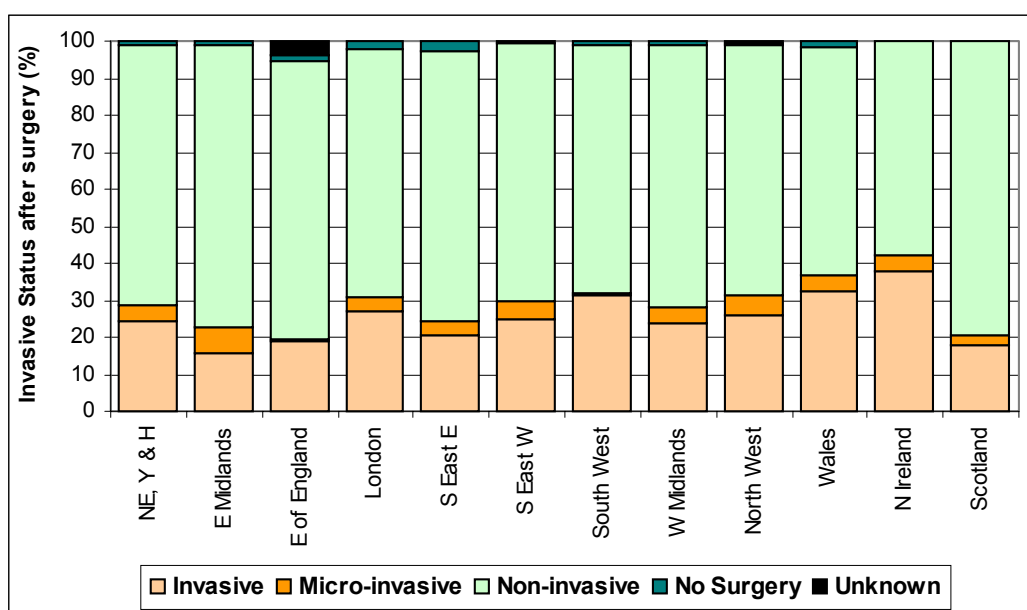


Figure 8 (Table 8): Variation in the invasive status after surgery of cases with B5a (Non-invasive), expressed as a percentage of cancers diagnosed with B5a

For 548 (24%) of the 2,274 cancers with a B5a (Non-invasive) pre-operative diagnosis, invasive disease was found at surgery. This varied from 16% in East Midlands and 18% in Scotland to 33% in Wales and 38% in Northern Ireland. The low rate of 19% in East of England could be affected by data completeness since for 4% of cases (9 in total) the status after surgery was unknown. These data illustrate the importance of taking into account radiological and clinical factors when making management decisions at multi-disciplinary meetings.

Figure 9 shows the variation by screening unit in the invasive status after surgery of cases with B5a (Non-invasive) core biopsy. The wide variation is affected by small numbers. For units which had 15 or more cancers diagnosed B5 core biopsy, the proportion of B5a (Non-invasive) cancers found to be invasive after surgery varied from 0% (0 cases) to 69% (25 cases).

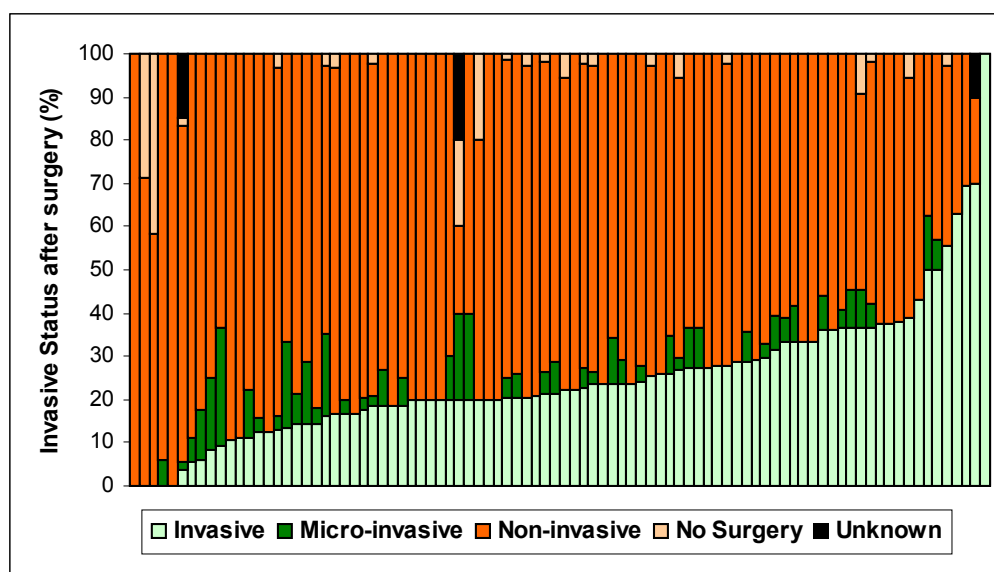


Figure 9: Variation by screening unit in the invasive status after surgery of cases with B5a (Non-invasive), expressed as a percentage of cancers diagnosed with B5a

Of the 6,921 cancers with a B5b (Invasive) pre-operative diagnosis, 6,743 (97%) had surgical confirmation of invasive cancer, the invasive status predicted by core biopsy. These data are shown for each region in Table 9. In the UK as a whole, 104 (2%) of these cases had no surgery recorded, so the invasive status of the core biopsy was retained. For 5 cases with B5a (Non-invasive) core biopsy the invasive status after surgery was unknown. 3 of these were in East of England. 69 (1%) cases with a B5b (Invasive) pre-operative diagnosis were found to have non-invasive or micro-invasive cancer with no associated invasive disease following surgery.

The proportion of cancers which have the predicted core biopsy invasive status confirmed after surgery has remained stable for the last 3 years.

| <b>3 YEAR COMPARISON: INVASIVE STATUS FOLLOWING CORE BIOPSY</b> |                           |                                                     |          |                       |                               |          |
|-----------------------------------------------------------------|---------------------------|-----------------------------------------------------|----------|-----------------------|-------------------------------|----------|
| <b>Year</b>                                                     | <b>B5a (Non-invasive)</b> |                                                     |          | <b>B5b (Invasive)</b> |                               |          |
|                                                                 | <b>Total</b>              | <b>Non-invasive or micro-invasive after surgery</b> |          | <b>Total</b>          | <b>Invasive after surgery</b> |          |
|                                                                 |                           | <b>No.</b>                                          | <b>%</b> |                       | <b>No.</b>                    | <b>%</b> |
| 2000/01                                                         | 1660                      | 1226                                                | 74       | 5026                  | 4893                          | 97       |
| 2001/02                                                         | 1881                      | 1393                                                | 74       | 5405                  | 5287                          | 98       |
| 2002/03                                                         | 2274                      | 1687                                                | 74       | 6743                  | 6921                          | 97       |

## 2.1.5 Invasive Status of Cancers Diagnosed by C5 Cytology Only

Table 10 shows the invasive status of the 1,205 cancers diagnosed by cytology only, not including cases diagnosed by both C5 cytology and B5 core biopsy. Overall, 93% of cancers diagnosed by C5 cytology alone were invasive, varying from 80% in Wales to 99% in South East (West). In the UK as a whole, 64 (5%) cancers diagnosed by C5 cytology alone were non-invasive and 5 (0.4%) micro-invasive. The invasive status of 10 cancers (1%) was unknown.

### COMMENT:

- For 24% of cancers with a B5a (Non-invasive) pre-operative diagnosis, invasive disease was found at surgery. This varied between 0 cases and 69% in the individual screening units with more than 15 cancers diagnosed by core biopsy.
- 97% of the cancers with a B5b (Invasive) pre-operative diagnosis had surgical confirmation of invasive cancer, the invasive status predicted by core biopsy. 69 cases (1%) with a B5b (Invasive) pre-operative diagnosis were found to have non-invasive or micro-invasive cancer with no associated invasive disease following surgery.
- 93% of cancers diagnosed by C5 cytology alone were found to be invasive after surgery.

## 2.2 Number of Visits for Core Biopsy/Cytology

It is possible that increases in pre-operative diagnosis have led to more anxiety, with women having to return to the assessment clinic for repeat diagnostic tests before receiving a definitive diagnosis. Therefore, in this audit for the first time, the number of visits for core biopsy/cytology was requested. The majority (84%) of women with screen detected breast cancer had all attempts at core biopsy and/or cytology performed at 1 assessment clinic visit. 1,357 women (12%) had 2 visits to obtain the definitive core biopsy result and 83 women (1%) had 3 or more visits. For 41 women, no attempt at core biopsy or cytology during the assessment process was recorded. These data are shown in Figure 10.

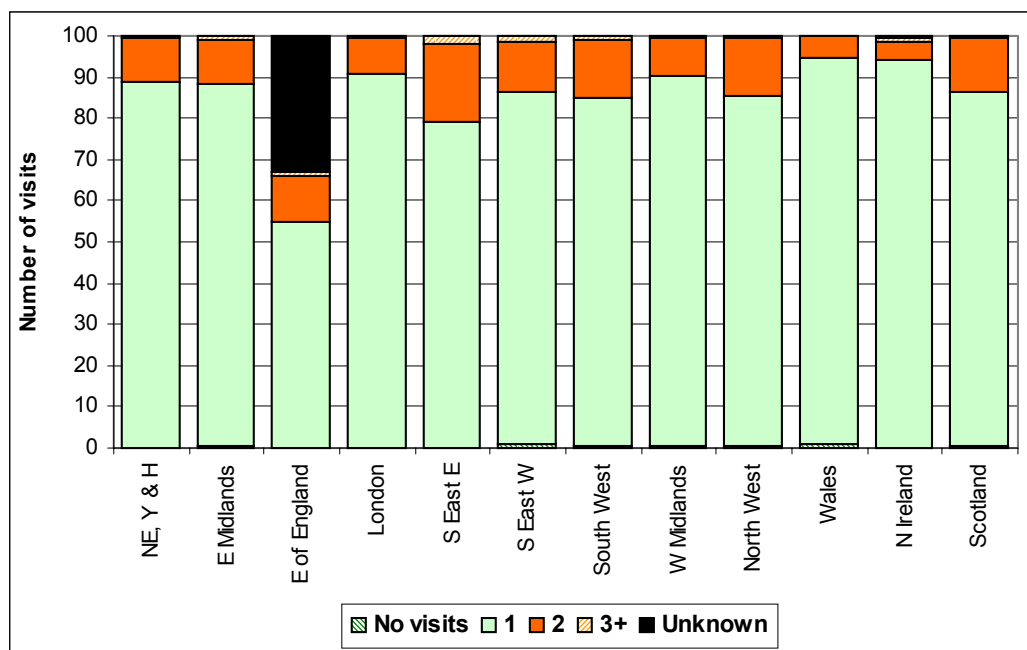


Figure 10 (Table 11): Number of visits for core biopsy/cytology

In East of England the number of visits was unknown for 33% of cancers. In South East (East) 21% of women with screen detected breast cancer had more than 1 visit for core biopsy and/or cytology

during the assessment process. The maximum number of assessment clinic visits for cytology or core biopsy was 5 for two women in South West (Table 12).

Figure 11 shows how the pre-operative diagnosis rate in each region is affected by repeat visits to an assessment clinic. In the UK as a whole, 78% of the 11,593 cancers detected by the screening programme had a pre-operative diagnosis of cancer determined from a single assessment clinic visit. This value is 81% if East of England, which had difficulty providing the data, is excluded. Of the remaining regions, 5 had a pre-operative diagnosis rate below the 80% minimum standard after the first assessment clinic visit. All 5 achieved the minimum standard when repeat assessment clinic visits were included and 4 achieved the 90% target. In South East (East) the pre-operative diagnosis rate was increased from 75% to 90% through repeat assessment clinic visits.

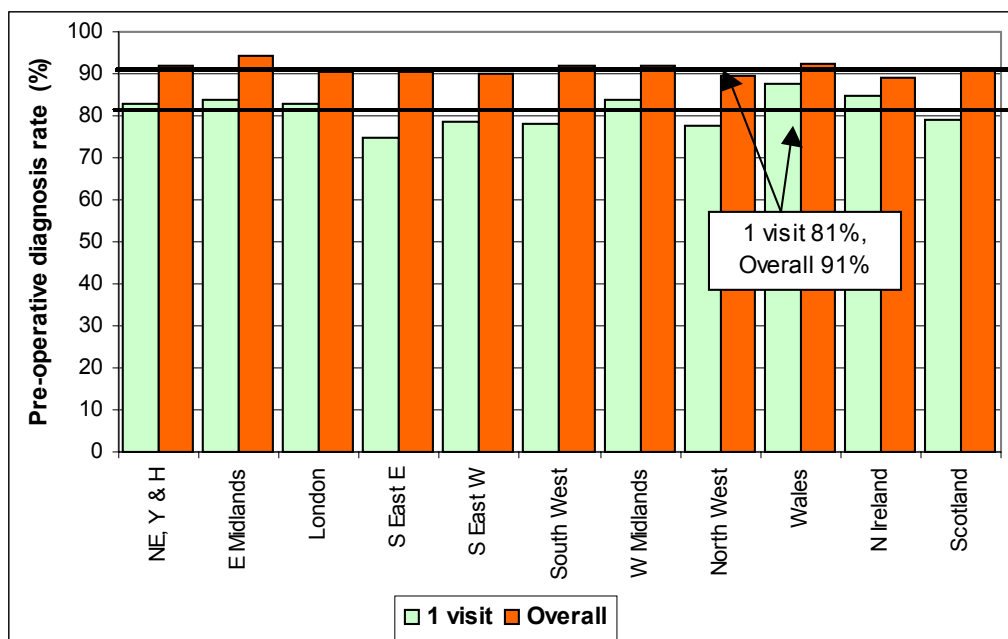


Figure 11 (Table 13): Variation in the proportion of cancers diagnosed by C5 and/or B5 in 1 visit, as a proportion of all screen detected cancers, compared to the overall pre-operative diagnosis rate

**COMMENT:**

- 84% of women with screen detected breast cancer had all attempts at core biopsy and/or cytology performed at 1 assessment clinic visit.
- 78% of the cancers detected by the screening programme had a pre-operative diagnosis of cancer determined from a single assessment clinic visit. This value is 81% if East of England, which had difficulty providing the data, is excluded.
- Of the remaining regions, 5 had a pre-operative diagnosis rate below the 80% minimum standard after the first assessment clinic visit. All 5 achieved the minimum standard when repeat assessment clinic visits were included and 4 achieved the 90% target.

## 2.3 Diagnostic Open Biopsies

### 2.3.1 Status of Diagnostic Open Biopsies

**Quality Objective:** To minimise unnecessary surgery, ie open surgical biopsies that prove to be benign

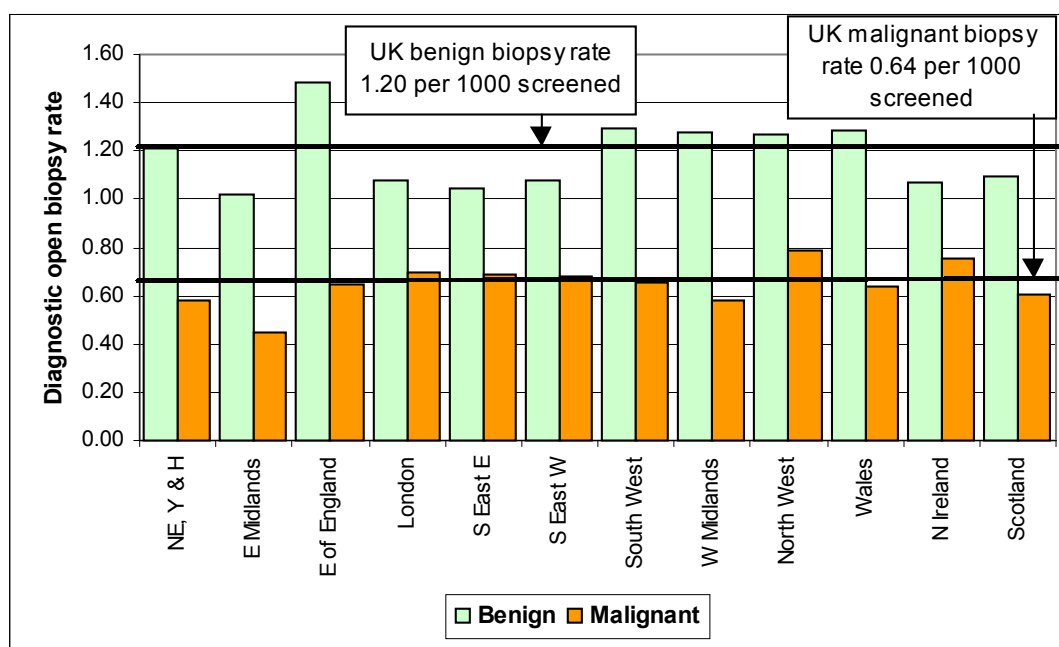
**Outcome Measure:** Benign open diagnostic biopsies should be:

<15 per 10,000 prevalent screen

<10 per 10,000 incident screen

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication 20, November 2003)

Figure 12 shows the regional variation in benign and malignant diagnostic open biopsy rates. In the UK as a whole, 2,919 diagnostic open biopsies were performed, compared to 3,166 in 2001/02. Of these, 1,901 (65%) were benign and 1,018 (35%) were malignant.



**Figure 12 (Table 14): Variation in benign and malignant diagnostic open biopsy rates expressed as the number of diagnostic open biopsies undertaken per 1000 women screened**

The benign open biopsy rate was 1.20 per 1000 women screened, varying from 1.02 per 1000 in East Midlands to 1.49 per 1000 in East of England. Overall, the malignant open biopsy rate was 0.64 per 1000 women screened, varying from 0.44 per 1000 in East Midlands to 0.79 per 1000 in North West.

The following summary table shows that the benign open biopsy rate has fallen over 7 years from 1.50 per 1000 women screened to 1.20 per 1000 women screened. Over the same period, the malignant open biopsy rate has fallen from 2.04 per 1000 to 0.64 per 1000 as the pre-operative diagnosis rate has increased from 63% to 91%.

| <b>7 YEAR COMPARISON:<br/>BENIGN AND MALIGNANT DIAGNOSTIC OPEN BIOPSY RATES</b> |                                 |                                       |                                          |                                                        |                                                           |
|---------------------------------------------------------------------------------|---------------------------------|---------------------------------------|------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------|
| <b>Year of data collection</b>                                                  | <b>Number of women screened</b> | <b>Number of benign open biopsies</b> | <b>Number of malignant open biopsies</b> | <b>Benign open biopsy rate per 1000 women screened</b> | <b>Malignant open biopsy rate per 1000 women screened</b> |
| 1996/97                                                                         | 1,340,175                       | 2015                                  | 2734                                     | 1.50                                                   | 2.04                                                      |
| 1997/98                                                                         | 1,419,287                       | 2251                                  | 2349                                     | 1.59                                                   | 1.66                                                      |
| 1998/99                                                                         | 1,308,751                       | 1830                                  | 1553                                     | 1.40                                                   | 1.19                                                      |
| 1999/00                                                                         | 1,429,905                       | 1838                                  | 1316                                     | 1.29                                                   | 0.92                                                      |
| 2000/01                                                                         | 1,535,019                       | 2042                                  | 1304                                     | 1.33                                                   | 0.85                                                      |
| 2001/02                                                                         | 1,507,987                       | 2018                                  | 1148                                     | 1.34                                                   | 0.76                                                      |
| 2002/03                                                                         | 1,582,269                       | 1901                                  | 1018                                     | 1.20                                                   | 0.64                                                      |

Data from Scotland are absent in 1998/99 and 1999/00

1996/97 data revised since previous publication to include malignant open biopsies with pre-operative C4 cytology.

### 2.3.2 Pre-operative Histories for Cancers Diagnosed by Diagnostic Open Biopsy

Due to the rising pre-operative diagnosis rate, only 1,018 cancers were diagnosed by open biopsy in 2002/03. Of these, 445 (44%) were invasive, 12 (1%) micro-invasive and 560 (55%) non-invasive. Invasive status was unknown for 1 case. These data are shown by region in Table 15.

Tables 16 and 17 describe the pre-operative history of cancers diagnosed by open biopsy according to whether the women had no pre-operative cell or tissue sample, cytology only, core biopsy only or both cytology and core biopsy. For 55% of invasive cancers diagnosed by open biopsy there had been unsuccessful attempts to obtain a pre-operative core diagnosis using core biopsy alone (Table 16). For non-invasive cancers the proportion of cases where pre-operative diagnosis had been attempted with core biopsy alone was higher at 80% (Table 17).

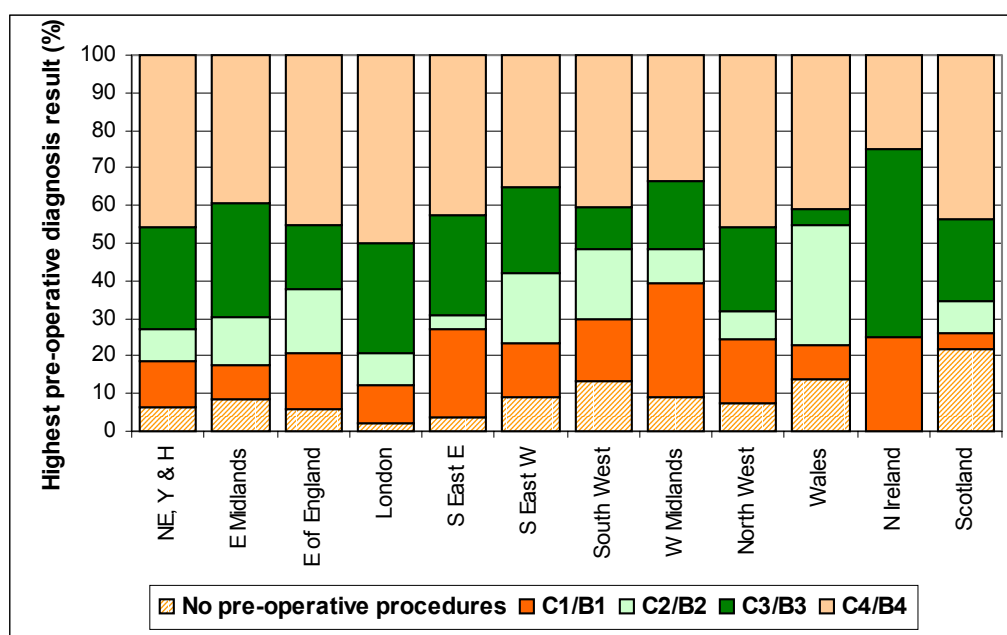
Table 16 also shows that, of the 445 invasive cancers diagnosed by open biopsy, 36 (8%) had no pre-operative procedure recorded. Of the 560 non-invasive cancers diagnosed by open biopsy, 17 (3%) had no pre-operative procedure recorded. Regional QA Reference Centres and Regional QA Surgeons should audit these 53 cases to establish whether they reflect a data collection problem. If the data are found to represent clinical practice correctly, the reasons for the failure to attempt pre-operative diagnosis should be ascertained.

Since 2000/01, the proportion of cancers which underwent cytology as the only procedure prior to diagnostic open biopsy has decreased from 31% to 16%, while the proportion undergoing core biopsy alone has risen from 36% to 55%.

| <b>3 YEAR COMPARISON :<br/>PRE-OPERATIVE HISTORY OF INVASIVE CANCERS DIAGNOSED BY OPEN BIOPSY</b> |                               |                                 |                                   |          |                      |          |                         |          |                                      |          |
|---------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|-----------------------------------|----------|----------------------|----------|-------------------------|----------|--------------------------------------|----------|
| <b>Year</b>                                                                                       | <b>Total invasive cancers</b> | <b>Diagnosed by open biopsy</b> | <b>No pre-operative procedure</b> |          | <b>Cytology only</b> |          | <b>Core biopsy only</b> |          | <b>Both cytology and core biopsy</b> |          |
|                                                                                                   |                               |                                 | <b>No</b>                         | <b>%</b> | <b>No</b>            | <b>%</b> | <b>No</b>               | <b>%</b> | <b>No</b>                            | <b>%</b> |
| 2000/01                                                                                           | 7945                          | 691                             | 68                                | 10       | 212                  | 31       | 248                     | 36       | 163                                  | 24       |
| 2001/02                                                                                           | 7911                          | 558                             | 50                                | 9        | 129                  | 23       | 240                     | 43       | 139                                  | 25       |
| 2002/03                                                                                           | 9086                          | 445                             | 36                                | 8        | 71                   | 16       | 244                     | 55       | 94                                   | 21       |

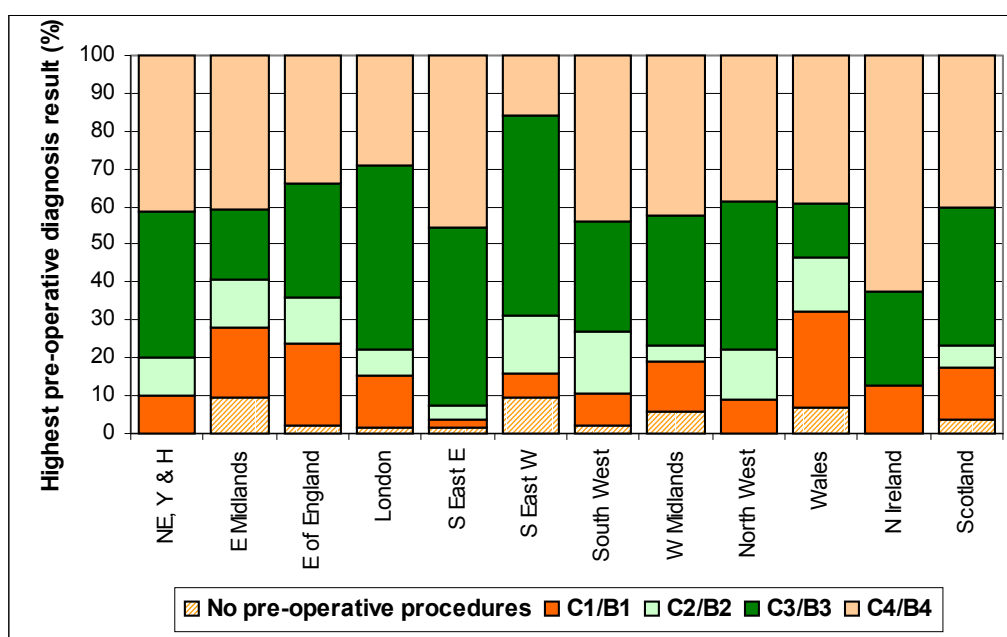
Figure 13 shows the highest pre-operative diagnosis result for cancers ultimately determined to be invasive. Overall, 15% of invasive cancers diagnosed by open biopsy had an inadequate (C1) cytology sample or a normal (B1) core biopsy sample, varying from 4% in Scotland to 30% in West Midlands. 12% had a benign (C2/B2) result, 22% were suspicious of benign disease (C3/B3) and

42% were suspicious of malignant disease (C4/B4). In London, 50% of the 48 cancers diagnosed by open biopsy received a B4 core biopsy or C4 cytology result indicating suspicion of malignancy prior to diagnostic surgery. In Wales, 32% of the 22 cancers diagnosed by open biopsy were determined to be benign (C2 or B2) prior to diagnostic surgery.



**Figure 13 (Table 18): Variation by region in the highest pre-operative diagnosis result for invasive cancers diagnosed by open biopsy, expressed as a percentage of invasive malignant diagnostic open biopsies**

Figure 14 shows the highest pre-operative diagnosis result for cancers ultimately determined to be non-invasive. In Wales and East of England, 25% and 22% respectively of the 28 and 50 non-invasive cancers diagnosed by open biopsy had an inadequate (C1) cytology sample or a normal (B1) core biopsy sample, compared to 12% in the UK as a whole.



**Figure 14 (Table 19): Variation by region in the highest pre-operative diagnosis result for non-invasive cancers diagnosed by open biopsy, as a percentage of non-invasive malignant diagnostic open biopsies**

The following summary table shows the changes that have occurred since 2000/01 in the highest pre-operative diagnosis results for cancers that had a core biopsy or cytology sample taken prior to a diagnostic open biopsy. Throughout the three year period studied the highest proportion (45%) of cancers diagnosed by malignant open biopsy were those with C4 cytology or B4 core biopsy. The proportion of cancers with C3 cytology or B3 core biopsy has increased over the 3 year period from 18% to 24% while the proportion with C1 cytology or B1 core biopsy has fallen from 22% to 17%.

| <b>3 YEAR COMPARISON :</b>                                                     |                            |              |          |              |          |              |          |              |          |
|--------------------------------------------------------------------------------|----------------------------|--------------|----------|--------------|----------|--------------|----------|--------------|----------|
| <b>HIGHEST CYTOLOGY AND CORE BIOPSY FOR MALIGNANT OPEN BIOPSIES (INVASIVE)</b> |                            |              |          |              |          |              |          |              |          |
| <b>Year</b>                                                                    | <b>Total with core/cyt</b> | <b>C1/B1</b> |          | <b>C2/B2</b> |          | <b>C3/B3</b> |          | <b>C4/B4</b> |          |
|                                                                                |                            | <b>No</b>    | <b>%</b> | <b>No</b>    | <b>%</b> | <b>No</b>    | <b>%</b> | <b>No</b>    | <b>%</b> |
| 2000/01                                                                        | 623                        | 134          | 22       | 93           | 15       | 111          | 18       | 285          | 46       |
| 2001/02                                                                        | 508                        | 88           | 17       | 94           | 19       | 113          | 22       | 213          | 42       |
| 2002/03                                                                        | 409                        | 68           | 17       | 54           | 13       | 98           | 24       | 189          | 46       |

**COMMENT:**

- In the UK as a whole, 2,919 diagnostic open biopsies were performed in 2002/03. Of these 65% were benign and 35% were malignant.
- The benign open biopsy rate was 1.20 per 1000 women screened and the malignant open biopsy rate was 0.64 per 1000 women screened. The malignant open biopsy rate has fallen from 2.04 per 1000 in 1996/97 as the pre-operative diagnosis rate has increased from 63% to 91%.
- Of the 445 invasive cancers diagnosed by open biopsy, 36 (8%) had no pre-operative procedure recorded. Of the 560 non-invasive cancers diagnosed by open biopsy, 17 (3%) had no pre-operative procedure recorded. Regional QA Reference Centres and Regional QA Surgeons should audit these 53 cases to establish whether they reflect a data collection problem. If the data are found to represent clinical practice correctly, the reasons for the failure to attempt pre-operative diagnosis should be ascertained.
- 42% of invasive cancers diagnosed by malignant open biopsy following cytology or core biopsy performed during the assessment process had C4 cytology or B4 core biopsy indicating suspicion of malignant disease.

### 3. SURGICAL TREATMENT

#### 3.1 Treatment for Non-invasive and Micro-invasive Breast Cancer

The variation in treatment type for non-invasive and micro-invasive breast cancers is shown by region in Figure 15 and by individual screening unit in Figure 16. 32 cancers (1%) apparently received no surgery. Regional QA Reference Centres and Regional QA Surgeons should review the tumour data for these cases to ensure that invasive disease has not been left untreated. Overall 69% of non-invasive and micro-invasive cancers were treated with conservation surgery, varying from 58% in Wales and 62% in North East, Yorkshire & Humber to 76% in London and 79% in Northern Ireland. Conservation surgery rates in individual screening units varied between 33% and 100%. The 4 units with conservation surgery rates under 50% treated 3, 5, 14 and 9 non-invasive or micro-invasive cancers. The 3 units with 100% conservation surgery treated between 3 and 10 non-invasive or micro-invasive cancers.

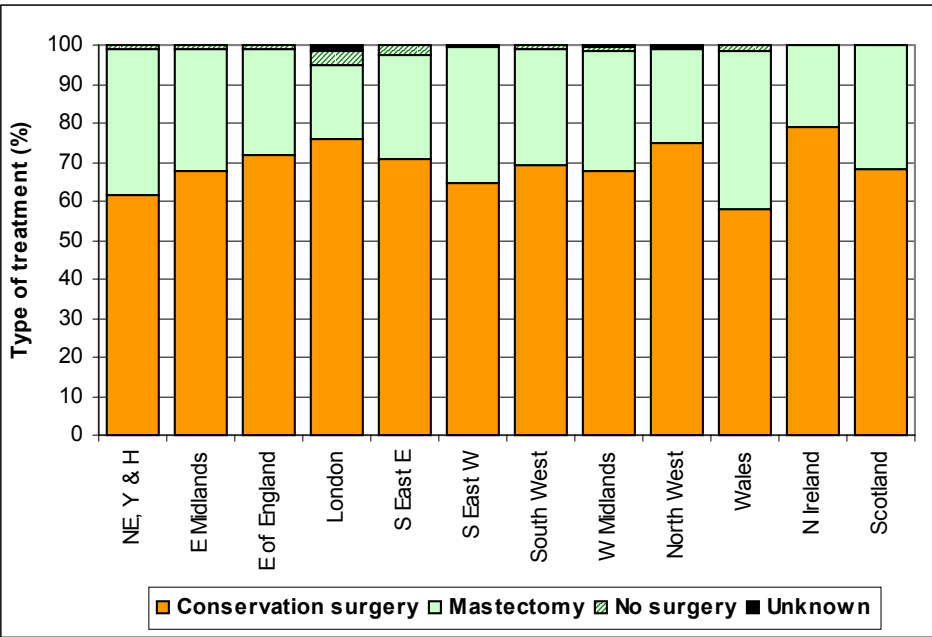


Figure 15 (Table 20): Variation in treatment for non-invasive and micro-invasive cancers

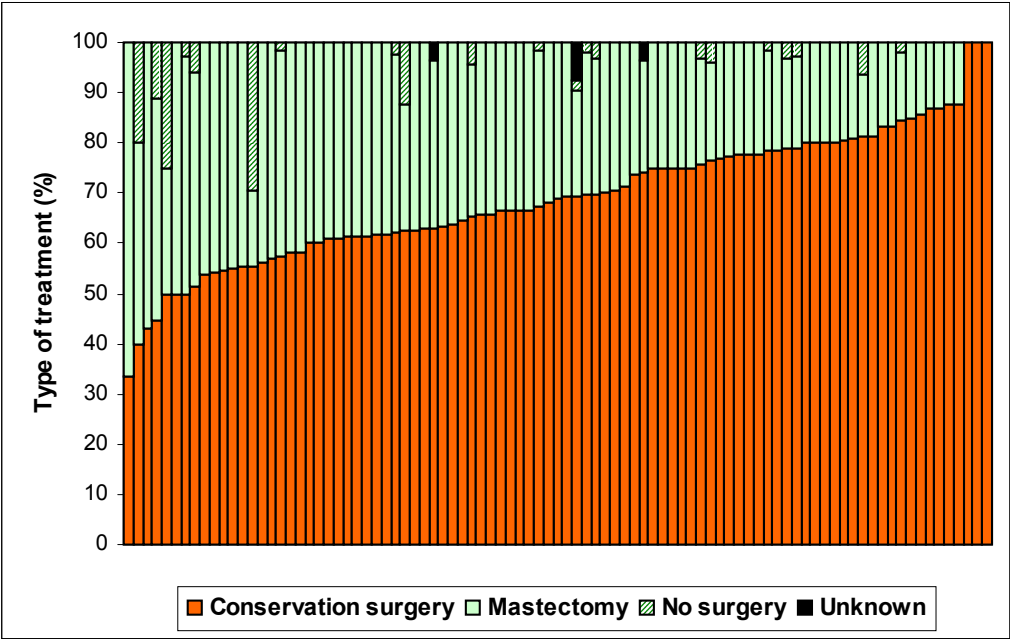


Figure 16: Variation by screening unit in treatment for non-invasive and micro-invasive cancers

In the UK as a whole, 1,122 (48%) of the 2348 non-invasive cancers were high grade, 906 (39%) other grade and for 50 (2%) grade was not assessable. 270 non-invasive cancers (11%) had unknown nuclear grade (Table 21). In 6 units the proportion of cancers with unknown nuclear grade was 73% or above. These units treated between 11 and 32 non-invasive cancers. The variation in the nuclear grade of non-invasive cancers in each screening unit is shown in Figure 17. 53 screening services supplied grade for 100% of cases. In these 53 units, 55% of non-invasive cancers were high grade.

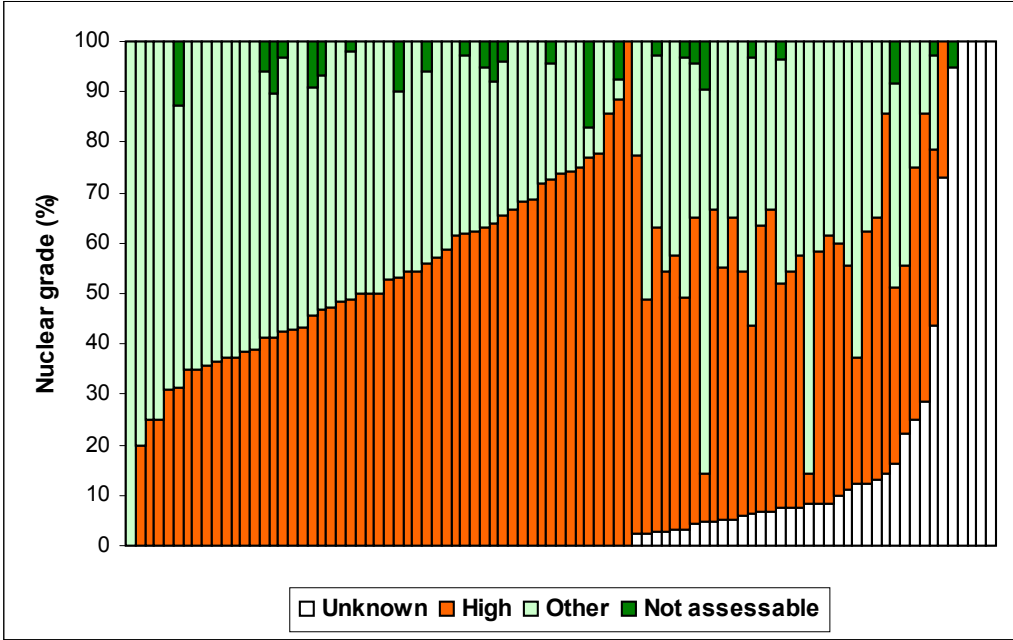


Figure 17: Variation by unit in the nuclear grade of non-invasive cancers

The regional variation in the size of non-invasive cancers is provided in Table 23. Figure 18 shows the variation in size in each screening unit. In 6 screening units the proportion of non-invasive cancers with unknown size was 50% or more. These units treated between 8 and 30 non-invasive cancers. 33 screening services supplied size for all non-invasive cancers. In these 33 units, 47% of non-invasive cancers measured <15mm.

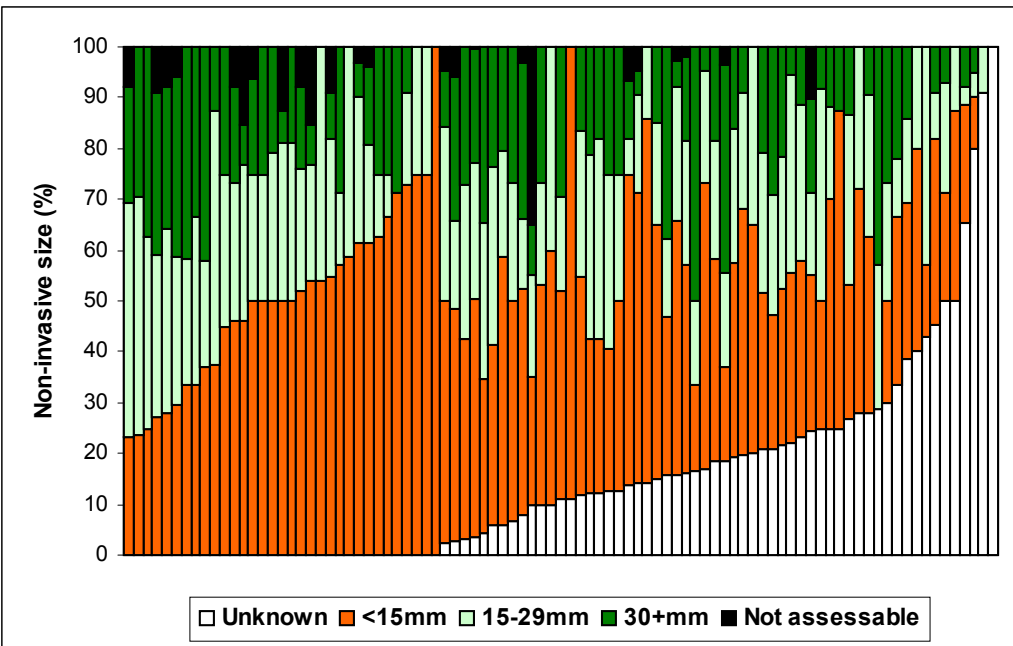
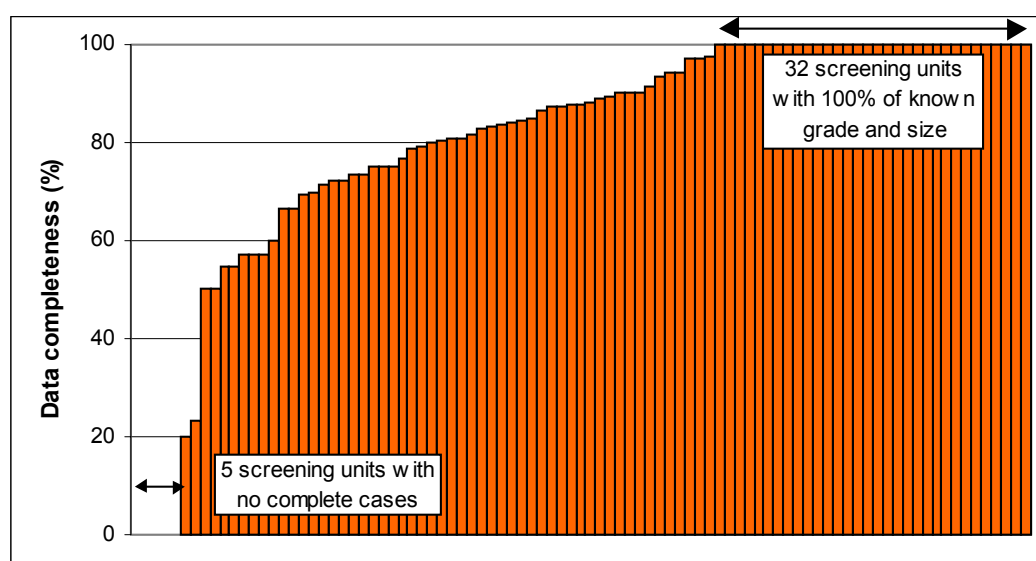


Figure 18: Variation by unit in the size of non-invasive cancers

Table 22 shows the regional variation in the disease extent of non-invasive cancers. Overall, 48% of non-invasive cancers had not assessable or unknown disease extent. In South East (East), for 49% of non-invasive cancers, disease extent was not assessable. The data completeness of nuclear grade, disease extent and pathological size recorded for the 2,348 non-invasive cancers detected by the UK NHSBSP in 2002/03 is shown in Table 24. In Scotland and North West, respectively 44% and 32% of non-invasive cancers had unknown nuclear grade compared with 11% in the UK as a whole. 32% of non-invasive cancers in East of England and 24% in Northern Ireland had unknown size. Disease extent, which was unknown for 36% of non-invasive cancers, is not included as a data item in the Sloane project. Data for non-invasive cancers have therefore been considered to be complete if both size and grade are known.

Figure 19 shows the data completeness for non-invasive cancers at each screening unit. Five screening units in East of England and North West, with between 11 and 32 non-invasive cancers, were unable to provide any grade or size data. 32 screening units were able to provide grade and size data for all non-invasive cancers. In the screening units with complete data, 55% of non-invasive cancers were high grade and 47% were <15mm in diameter.



**Figure 19: Variation by screening unit in the data completeness of grade and size for non-invasive cancers**

Overall, data were incomplete (unknown grade and/or size) for 21% of non-invasive cancers. Data completeness varied from 0 cases in East Midlands and 4% in West Midlands to more than 30% in East of England (33%), North West (42%) and Scotland (45%). The following summary table shows that the proportion of incomplete data has remained stable over the past five years. It is hoped that this will improve as screening units sign up to the Sloane project to record and audit the pathology and treatment for all screen detected non-invasive cancers.

| <b>5 YEAR COMPARISON:<br/>DATA COMPLETENESS FOR NON-INVASIVE CANCERS</b> |                              |                     |                              |
|--------------------------------------------------------------------------|------------------------------|---------------------|------------------------------|
| <b>Year of data collection</b>                                           | <b>Unknown nuclear grade</b> | <b>Unknown size</b> | <b>Unknown grade or size</b> |
|                                                                          | <b>%</b>                     | <b>%</b>            | <b>%</b>                     |
| 1998/99                                                                  | 17                           | -                   | -                            |
| 1999/00                                                                  | 6                            | 16                  | 19                           |
| 2000/01                                                                  | 7                            | 12                  | 14                           |
| 2001/02                                                                  | 11                           | 13                  | 20                           |
| 2002/03                                                                  | 11                           | 15                  | 21                           |

Data from Scotland are absent in 1998/99

Disease extent was termed "focal status" in 1998/99

Of the 114 non-invasive cancers recorded as high grade multi-focal, 28 cases (25%) were treated by conservation surgery (Table 25). Of the large (30+mm) multi-focal non-invasive cancers, 6 (9%) were treated with conservation surgery (Table 26). 289 non-invasive cancers were recorded as large (30+mm) high grade lesions. Of these, 90 (31%) were treated with conservation surgery (Table 27). Tables 28-30 show the treatment provided to cancers with incomplete data which could potentially be large high grade lesions.

The following summary table shows that, in total, 239 high grade multi-focal, large multi-focal, large high grade and potentially large high grade non-invasive cancers were treated with conservation surgery. Regional QA Reference Centres and Regional QA Surgeons should review the data recorded for these cases to ensure that they were not undertreated.

| <b>TABLE 3.1A : NUMBER OF NON-INVASIVE CANCERS IN EACH REGION<br/>TREATED WITH CONSERVATION SURGERY</b> |                                                      |                                        |                                      |                                         |                                      |                                         |               |
|---------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------|-----------------------------------------|---------------|
| <b>Region</b>                                                                                           | <b>High<br/>Grade<br/>multi-focal<br/>(Table 25)</b> | <b>30+ mm</b>                          |                                      |                                         | <b>Unknown size</b>                  |                                         | <b>Total*</b> |
|                                                                                                         |                                                      | <b>Multi-<br/>focal<br/>(Table 26)</b> | <b>High<br/>grade<br/>(Table 27)</b> | <b>Unknown<br/>grade<br/>(Table 28)</b> | <b>High<br/>grade<br/>(Table 29)</b> | <b>Unknown<br/>grade<br/>(Table 30)</b> |               |
| <i>N East, Yorks &amp; Humber</i>                                                                       | 1                                                    | 0                                      | 12                                   | 0                                       | 9                                    | 1                                       | 23            |
| <i>East Midlands</i>                                                                                    | 4                                                    | 0                                      | 7                                    | 0                                       | 0                                    | 0                                       | 11            |
| <i>East of England</i>                                                                                  | 6                                                    | 1                                      | 6                                    | 0                                       | 4                                    | 27                                      | 44            |
| <i>London</i>                                                                                           | 1                                                    | 1                                      | 14                                   | 0                                       | 13                                   | 10                                      | 39            |
| <i>South East (East)</i>                                                                                | 1                                                    | 0                                      | 4                                    | 0                                       | 7                                    | 4                                       | 16            |
| <i>South East (West)</i>                                                                                | 0                                                    | 0                                      | 7                                    | 0                                       | 5                                    | 3                                       | 15            |
| <i>South West</i>                                                                                       | 8                                                    | 2                                      | 10                                   | 0                                       | 7                                    | 1                                       | 26            |
| <i>West Midlands</i>                                                                                    | 2                                                    | 0                                      | 9                                    | 0                                       | 0                                    | 0                                       | 11            |
| <i>North West</i>                                                                                       | 2                                                    | 0                                      | 7                                    | 1                                       | 5                                    | 14                                      | 29            |
| <i>Wales</i>                                                                                            | 0                                                    | 0                                      | 5                                    | 0                                       | 0                                    | 0                                       | 5             |
| <i>Northern Ireland</i>                                                                                 | 1                                                    | 1                                      | 5                                    | 0                                       | 3                                    | 2                                       | 10            |
| <i>Scotland</i>                                                                                         | 2                                                    | 1                                      | 4                                    | 2                                       | 1                                    | 2                                       | 10            |
| <b>United Kingdom</b>                                                                                   | <b>28</b>                                            | <b>6</b>                               | <b>90</b>                            | <b>3</b>                                | <b>54</b>                            | <b>64</b>                               | <b>239</b>    |

\*counts each non-invasive cancer once only

#### **COMMENT:**

- Overall, 69% of non-invasive and micro-invasive cancers were treated with conservation surgery, varying from 58% in Wales and 62% in North East, Yorkshire & Humber to 76% in London and 79% in Northern Ireland.
- 32 screening units were able to provide grade and size data for all non-invasive cancers.
- In the screening units with complete data, 55% of non-invasive cancers were high grade and 47% were <15mm in diameter.
- 239 high grade multi-focal, large multi-focal, large high grade and potentially large high grade non-invasive cancers were treated with conservation surgery. Regional QA Reference Centres and Regional QA Surgeons should review the data recorded for these cases to ensure that they were not under-treated.

### 3.2 Treatment for Invasive Breast Cancer

Of the 9,086 invasive breast cancers detected by the UK NHSBSP in 2002/03, 6,519 (72%) underwent conservation surgery, 2,444 (27%) had a mastectomy and 100 cases (1%) had no surgery. Treatment information was unavailable for 23 cases, of which 10 (43%) were in London. Figure 20 shows the regional variation in invasive cancer mastectomy rates from 19% in London to 34% in Wales and 35% in North East, Yorkshire & Humber.

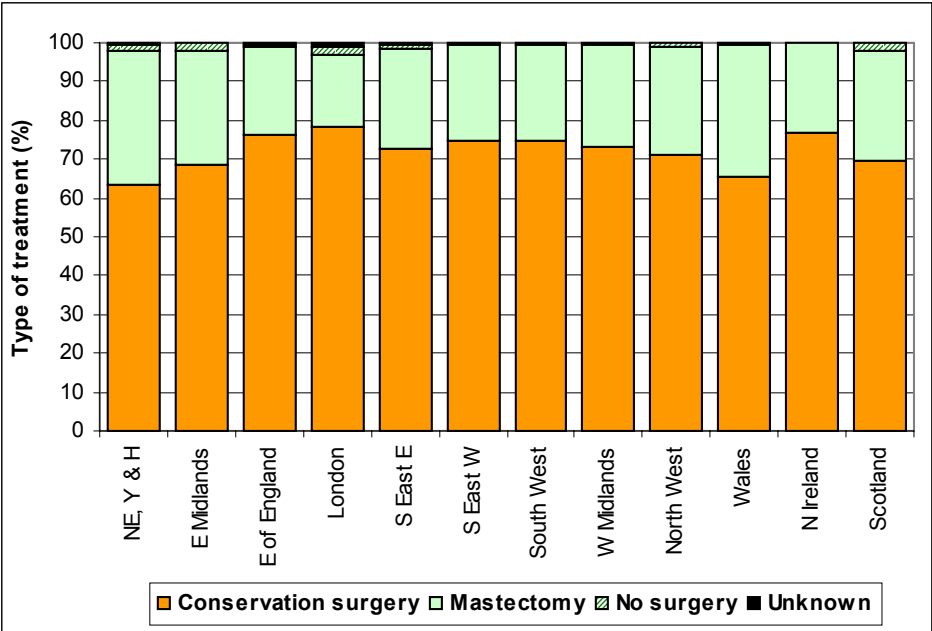


Figure 20 (Table 31): Variation in the type of treatment for invasive cancers (all sizes)

Mastectomy rates for individual screening units varied between 12% and 57% (Figure 21). The 7 screening units with mastectomy rates under 15% treated between 28 and 77 invasive cancers. The 4 units with mastectomy rates over 50% treated between 16 and 130 invasive cancers.

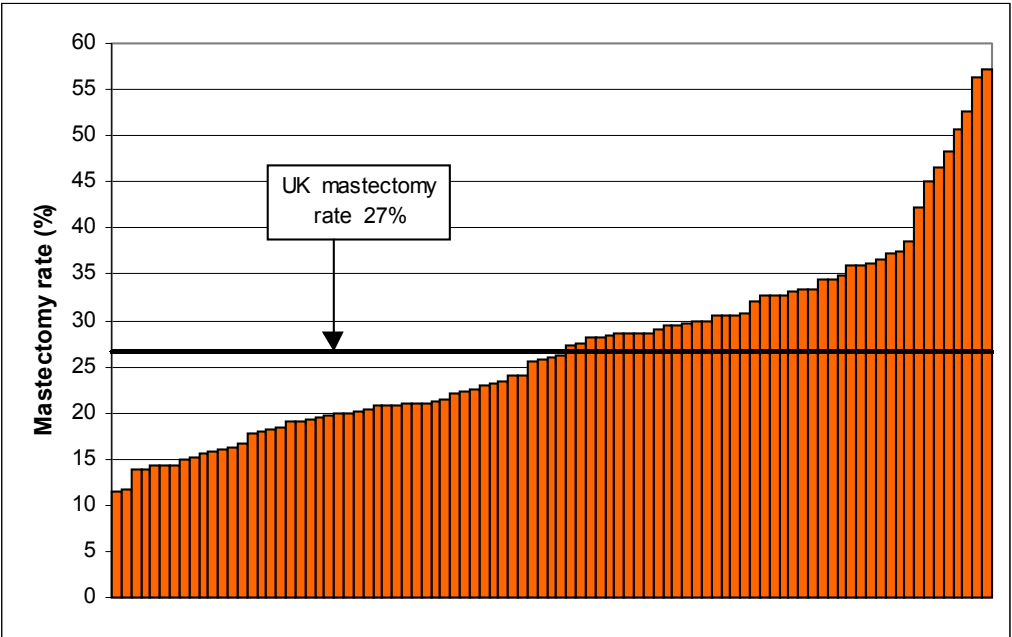


Figure 21: Variation in the type of treatment for invasive cancers (all sizes)

### 3.2.1 Treatment According to Invasive Size

Table 32 gives the invasive size of the 9,086 invasive breast cancers. Overall 2,232 cases (25%) measured less than 10mm, 2,646 (29%) were 10-<15mm in diameter, 1,752 (19%) were 15-<20mm in diameter and 1,965 (22%) were 20-<50mm. Only 171 cases (2%) were 50mm or more. Size was unavailable for 320 cases (4%). In East of England, 153 (16%) of the 954 invasive cancers had no size recorded.

Figure 22 shows the regional variation in mastectomy rates for invasive breast cancer with invasive tumour size. In the UK as a whole, the mastectomy rate increased with invasive tumour size, with 81% of 50+mm tumours being treated with mastectomy compared with 19% of small (<15mm) invasive tumours. The mastectomy rate for large (50+mm) invasive cancers was only 73% in North West and 75% in East Midlands, East of England and West Midlands compared to 81% in the UK as a whole.

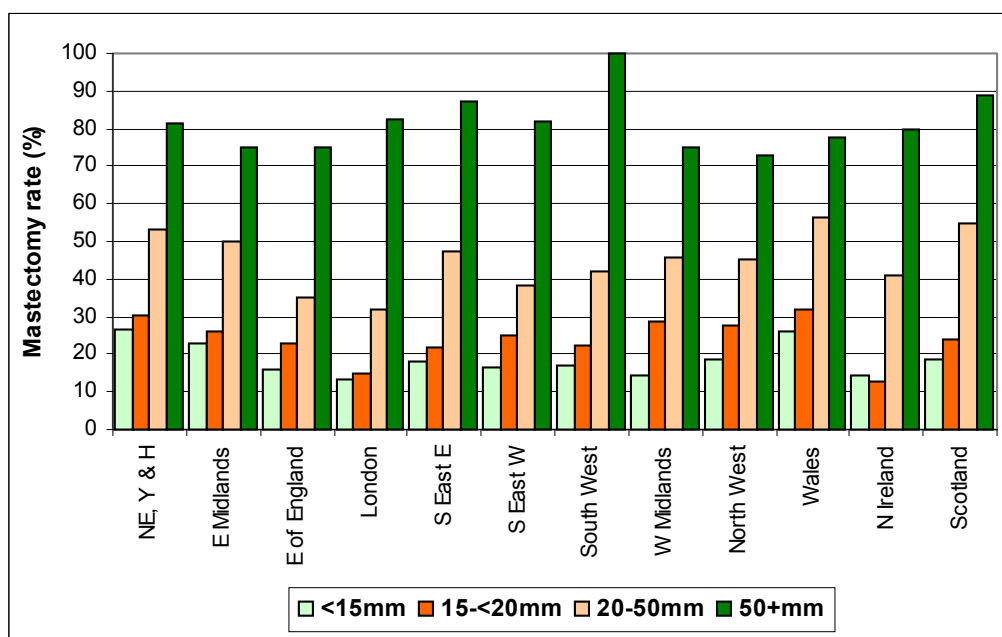


Figure 22 (Tables 35-38): Variation in mastectomy rates with invasive tumour size

### 3.2.2 Treatment of Invasive Cancers with Invasive Component <15mm in Diameter

The following summary table shows that the overall mastectomy rate for small (<15mm) invasive tumours has remained stable since 1996/97. The highest mastectomy rates for small (<15mm) invasive cancers were seen in Wales (26%) and North East, Yorkshire & Humber (26%) (Table 35).

| <b>7 YEAR COMPARISON:<br/>TREATMENT FOR SMALL INVASIVE CANCERS (&lt;15mm)</b> |                                      |                             |          |                   |          |
|-------------------------------------------------------------------------------|--------------------------------------|-----------------------------|----------|-------------------|----------|
| <b>Year of data collection</b>                                                | <b>Total invasive cases &lt;15mm</b> | <b>Conservation surgery</b> |          | <b>Mastectomy</b> |          |
|                                                                               |                                      | <b>No.</b>                  | <b>%</b> | <b>No.</b>        | <b>%</b> |
| 1996/97                                                                       | 3135                                 | 2449                        | 78       | 601               | 19       |
| 1997/98                                                                       | 3384                                 | 2693                        | 80       | 651               | 19       |
| 1998/99                                                                       | 3344                                 | 2697                        | 81       | 618               | 18       |
| 1999/00                                                                       | 4150                                 | 3337                        | 80       | 773               | 19       |
| 2000/01                                                                       | 4189                                 | 3363                        | 80       | 796               | 19       |
| 2001/02                                                                       | 4233                                 | 3333                        | 79       | 879               | 21       |
| 2002/03                                                                       | 4878                                 | 3950                        | 81       | 918               | 19       |

Data from Scotland are absent in 1998/99

The variation by screening unit in the mastectomy rates for <15mm invasive tumours is shown in Figure 23. For 21 screening units, with between 7 and 83 small (<15mm) invasive cancers, the mastectomy rate was less than 10%. For 7 screening units, with between 7 and 67 small (<15mm) invasive cancers, the mastectomy rate was 35% or more.

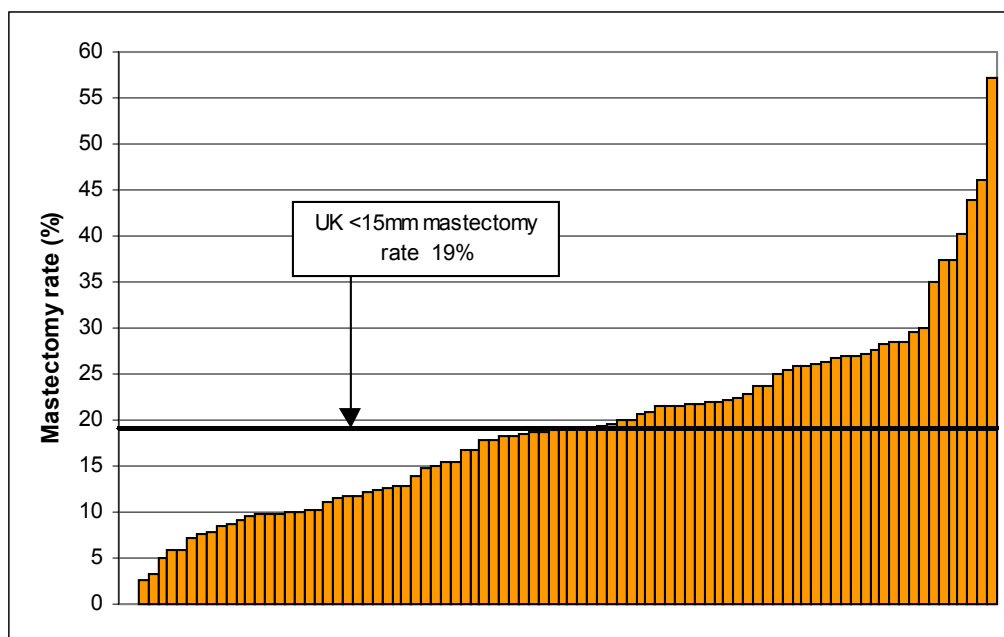


Figure 23: Variation by unit in mastectomy rates for <15mm invasive tumours

### 3.2.3 Treatment of Invasive Cancers According to Whole Tumour Size

Once again, screening services were asked to provide whole tumour size for invasive cancers (Table 39). The whole tumour size is the maximum diameter of the whole tumour, including any non-invasive component. The whole size was not provided for 1,242 (14%) of the 9,086 invasive cancers. In London (33%), North West (24%), South East (East) and South East (West) (23%) more than 20% of invasive cancers had whole size unknown.

Table 40 shows the whole size of small (<15mm) invasive cancers. Of the 4,878 invasive cancers with invasive size <15mm, 3,397 (70%) had whole size <15mm, 424 (9%) had whole size 15-<20mm, 458 (9%) had whole size 20-<50mm and 81 (2%) had whole size 50+mm. Whole size was unknown for 518 cancers (11%).

| <b>TREATMENT FOR INVASIVE CANCERS</b> |                                                              |          |                                                                                             |          |
|---------------------------------------|--------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------|----------|
| <b>Size</b>                           | <b>Invasive size<br/>mastectomy rates<br/>(Tables 35-38)</b> |          | <b>Whole size mastectomy rates<br/>for &lt;15mm invasive cancers<br/>(Tables 39, 41-43)</b> |          |
|                                       | <b>No.</b>                                                   | <b>%</b> | <b>No.</b>                                                                                  | <b>%</b> |
| 50+mm                                 | 138/171                                                      | 81       | 71/81                                                                                       | 88       |
| 20-<50mm                              | 890/1965                                                     | 45       | 166/458                                                                                     | 36       |
| 15-<20mm                              | 437/1752                                                     | 25       | 87/424                                                                                      | 21       |
| <15mm                                 | 918/4878                                                     | 19       | 496/3397                                                                                    | 15       |

The above summary table shows how overall mastectomy rates varied with the size of the invasive cancer and with whole tumour size. The mastectomy rate for 50+mm invasive cancers (81%) was lower than that for <15mm cancers with 50+mm whole size (88%). The mastectomy rates for 20-<50mm and 15-<20mm cancers were higher than for <15mm invasive cancers with 20-<50mm and 15-<20mm whole size respectively. For small cancers, only 15% of tumours with whole size <15mm were treated with mastectomy compared with 19% of cancers with invasive size <15mm.

These data suggest that the presence of *in situ* disease accounts for a proportion of the mastectomies performed on tumours with invasive size <15mm.

Figure 24 and the accompanying summary table illustrate the regional variation in mastectomy rates for cancers with invasive size <15mm and for cancers where the whole invasive size was <15mm. In every region, the mastectomy rate for cancers with whole size <15mm was lower than that for cancers with invasive size <15mm. The difference was greatest in South East (West) (16% compared to 7%) and least in Wales (26% compared to 25%).

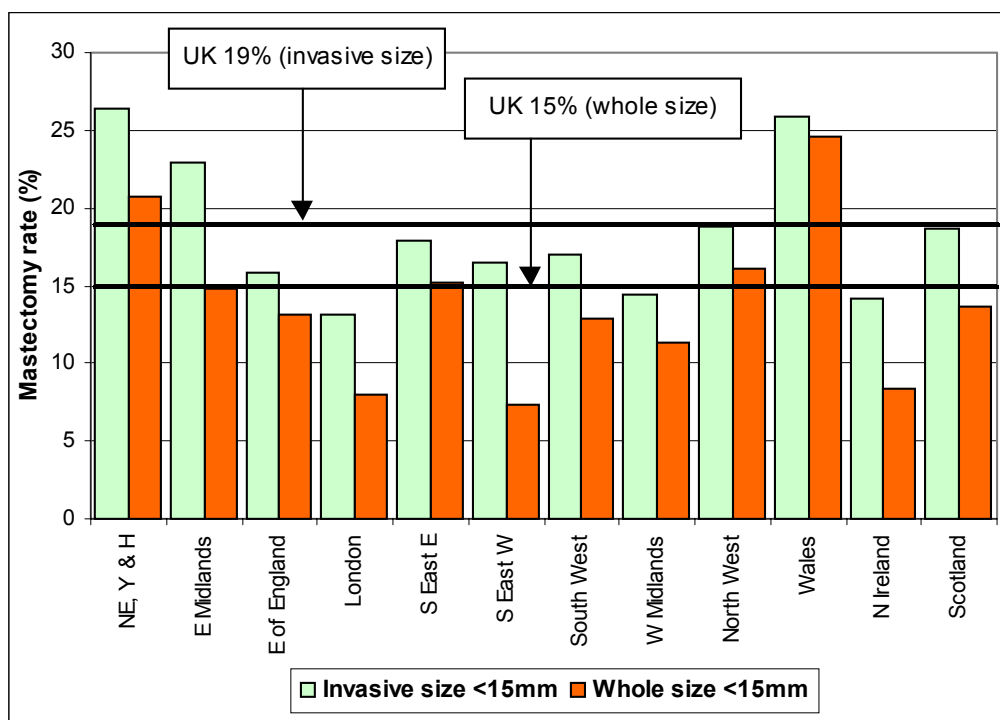


Figure 24 (Tables 35, 41): Variation in mastectomy rates for <15mm invasive size cancers and <15mm whole size invasive cancers

| <b>DIFFERENCE IN MASTECTOMY RATES FOR<br/>&lt;15MM INVASIVE CANCERS AND &lt;15MM WHOLESIZE CANCERS</b> |                                              |           |                                            |           |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------|--------------------------------------------|-----------|
| <b>Region</b>                                                                                          | <b>&lt;15mm invasive size<br/>(Table 35)</b> |           | <b>&lt;15mm whole size<br/>(Tables 41)</b> |           |
|                                                                                                        | <b>No.</b>                                   | <b>%</b>  | <b>No.</b>                                 | <b>%</b>  |
| <i>N East, Yorks &amp; Humber</i>                                                                      | 155/586                                      | 26        | 89/430                                     | 21        |
| <i>East Midlands</i>                                                                                   | 96/420                                       | 23        | 45/304                                     | 15        |
| <i>East of England</i>                                                                                 | 74/467                                       | 16        | 51/387                                     | 13        |
| <i>London</i>                                                                                          | 61/466                                       | 13        | 18/224                                     | 8         |
| <i>South East (East)</i>                                                                               | 67/375                                       | 18        | 34/224                                     | 15        |
| <i>South East (West)</i>                                                                               | 52/316                                       | 16        | 14/191                                     | 7         |
| <i>South West</i>                                                                                      | 80/469                                       | 17        | 44/342                                     | 13        |
| <i>West Midlands</i>                                                                                   | 60/415                                       | 14        | 37/325                                     | 11        |
| <i>North West</i>                                                                                      | 115/612                                      | 19        | 63/390                                     | 16        |
| <i>Wales</i>                                                                                           | 78/302                                       | 26        | 55/224                                     | 25        |
| <i>Northern Ireland</i>                                                                                | 12/85                                        | 14        | 4/48                                       | 8         |
| <i>Scotland</i>                                                                                        | 68/365                                       | 19        | 42/308                                     | 14        |
| <b>UK</b>                                                                                              | <b>918/4878</b>                              | <b>19</b> | <b>496/3397</b>                            | <b>15</b> |

### 3.3 Immediate Reconstruction Following Mastectomy

Overall, of the 11,593 cancers detected, 3,174 (27%) were treated with mastectomy. Of these, 264 (8%) were recorded as having immediate reconstruction. 2,106 (66%) cases had no immediate reconstruction recorded and for 804 (25%) cases it was unknown whether immediate reconstruction was performed (Figure 25). Immediate reconstruction data were not available in all screening units, but 8% is the minimum proportion that did have immediate reconstruction. The availability of immediate reconstruction may influence women's decision to choose mastectomy. Thus in Wales, where mastectomy rates for small tumours were not influenced by the presence of *in situ* disease, at least 14% of cancers undergoing mastectomy received immediate reconstruction.

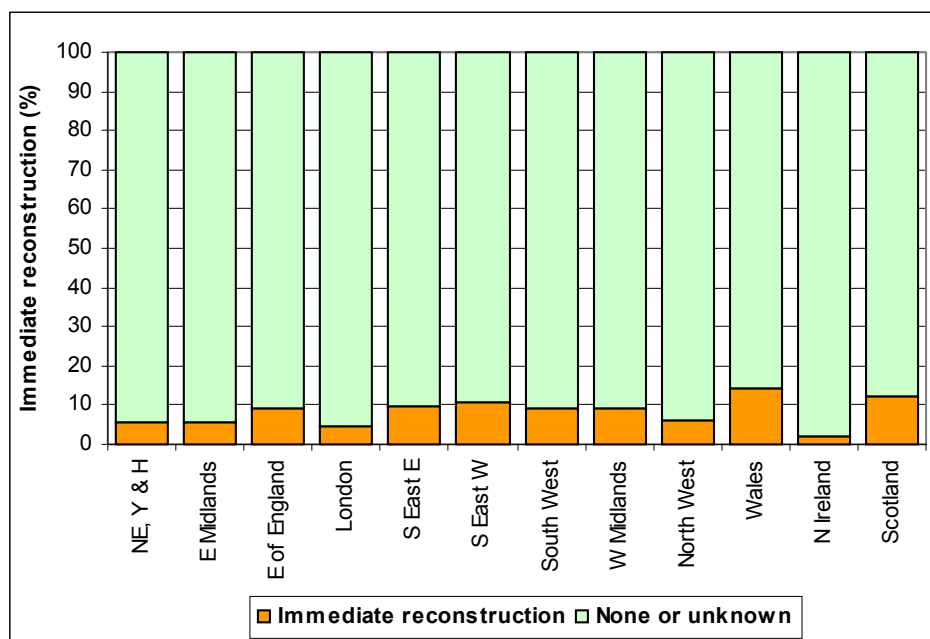


Figure 25 (Table 46): Proportion of immediate reconstruction (all cancers)

Table 47 shows that, of the 264 cases known to have had immediate reconstruction following mastectomy, 156 (59%) were invasive, 5 (2%) were micro-invasive, 103 (39%) were non-invasive.

#### COMMENT:

- In the UK as a whole, the mastectomy rate for invasive cancers was 27%. This varied between 12% and 57% in individual screening units.
- 81% of 50+mm invasive cancers were treated with mastectomy compared with 19% of small (<15mm) invasive cancers.
- For 7 screening units, with between 7 and 67 small (<15mm) invasive cancers, the mastectomy rate was 35% or more.
- Only 15% of cancers with whole size <15mm were treated with mastectomy compared with 19% of cancers with invasive size <15mm. These data suggest that the presence of *in situ* disease accounts for a proportion of the mastectomies performed on tumours with invasive size <15mm.
- 8% of cancers treated with mastectomy were recorded as having immediate reconstruction.

## 4 LYMPH NODE STATUS, INVASIVE GRADE AND NPI

### 4.1 Lymph Node Status of Invasive Cancers

Screening guidelines recommended that invasive cancers should have axillary node assessment. Axillary node assessment is not usually indicated for non-invasive cancers.

**Quality Objective:** To ensure adequate pathological data to decide on appropriate adjuvant treatment

**Outcome Measures & Standard:** Patients with invasive cancers treated by surgery should have adequate axillary node assessment (minimum 90%, target 95%)

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication 20, November 2003)

#### 4.1.1 Availability of Nodal Status for Invasive Cancers

Overall, nodal status was known for 95% of invasive cancers, varying from 86% in Northern Ireland to 99% in West Midlands and Wales (Table 48). In Northern Ireland, it was unknown whether nodes were obtained for 9% of invasive cancers.

The availability of nodal status for invasive cancers is shown for individual screening units in Figure 26. Where nodal status is unknown, this may be because no nodes were obtained or because it is not known whether nodes were obtained. At 10 screening services, with between 15 and 125 invasive cancers, nodal status was ascertained for 100% of invasive cancers. The 2 screening units where nodal status was unknown for more than 25% of cases diagnosed 31 and 89 invasive cancers.

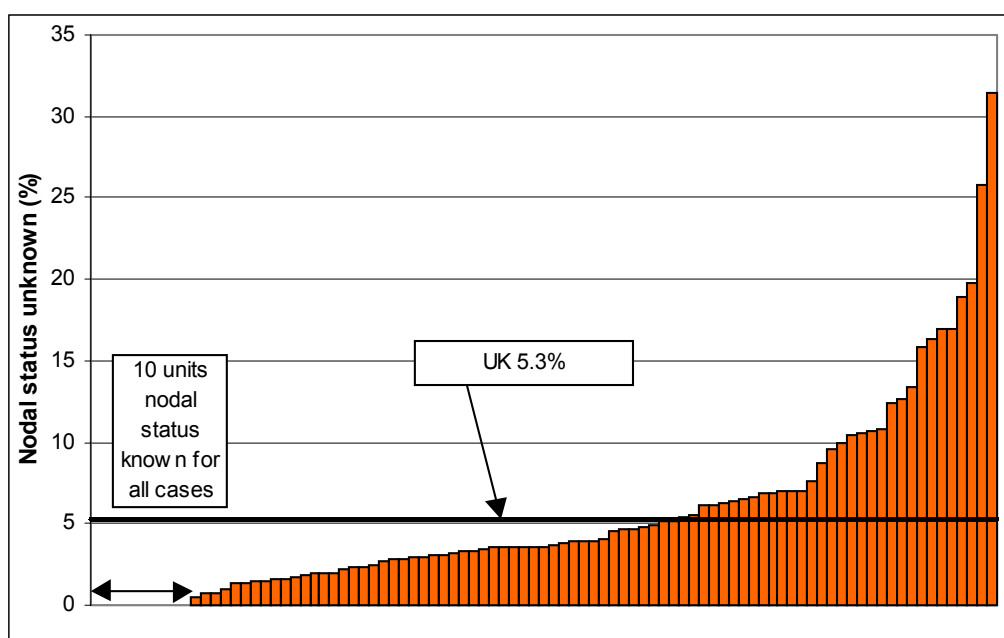


Figure 26: Variation by unit in the availability of lymph node status for invasive breast cancers

Of the 8,607 invasive cancers with known nodal status, 2,133 (25%) had positive nodal status (Table 49). This is the same as the 25:75 ratio obtained in previous year's audits which is shown in the following table.

| <b>7 YEAR COMPARISON:<br/>AVAILABILITY OF LYMPH NODE STATUS</b> |                                   |                                 |                                                      |                 |
|-----------------------------------------------------------------|-----------------------------------|---------------------------------|------------------------------------------------------|-----------------|
| <b>Year of data collection</b>                                  | <b>Number of invasive cancers</b> | <b>% with nodal information</b> | <b>% of invasive cancers with known nodal status</b> |                 |
|                                                                 |                                   |                                 | <b>Positive</b>                                      | <b>Negative</b> |
| 1996/97                                                         | 5860                              | 81                              | 26                                                   | 74              |
| 1997/98                                                         | 6427                              | 87                              | 25                                                   | 75              |
| 1998/99                                                         | 6200                              | 90                              | 26                                                   | 74              |
| 1999/00                                                         | 7675                              | 93                              | 25                                                   | 75              |
| 2000/01                                                         | 7945                              | 93                              | 25                                                   | 75              |
| 2001/02                                                         | 7911                              | 94                              | 25                                                   | 75              |
| 2002/03                                                         | 9086                              | 95                              | 25                                                   | 75              |

Data from Scotland and Northern Ireland are absent in 1998/99

There was also little regional variation in lymph node status, with the proportion of node positive cancers varying from 23% in Wales and East Midlands to 27% in South East (West), West Midlands and Northern Ireland (Table 49). The variation in nodal status in individual screening units is illustrated in Figure 27. At 3 screening units, more than 40% of invasive cancers with known nodal status were node positive. These screening units diagnosed between 53 and 59 invasive cancers. At the other extreme, 5 screening units found positive nodes in less than 15% of invasive cancers with known nodal status. These screening units diagnosed between 21 and 69 invasive cancers.

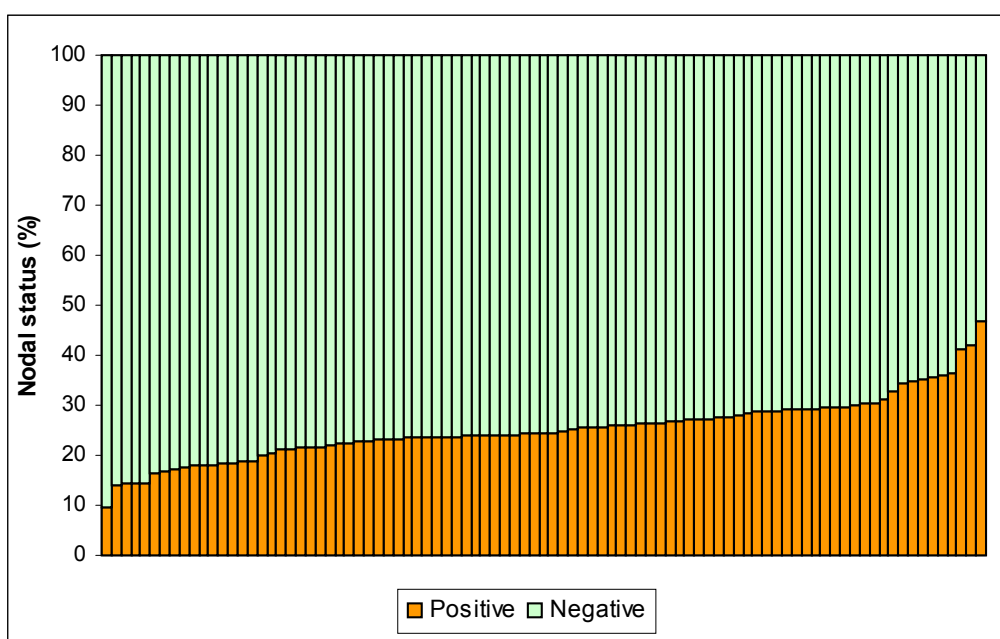


Figure 27: Variation by unit in the lymph node status of invasive breast cancers

#### 4.1.2 Number of Nodes Examined

##### **Quality Objective:**

**“Patients receiving surgery for screen-detected invasive breast cancer should be recommended to have axillary node staging by sampling or clearance, and this recommendation should be documented in their case notes. A minimum of four nodes should be obtained for axillary node sampling.”**

**(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication 20, November 2003)**

For invasive cancers with known nodal status, the mean number of nodes examined was 11 nodes and the median 10 nodes (Table 50). The mean and median number of nodes examined were highest in Northern Ireland (mean and median 15) and lowest in East Midlands (mean 8, median 6).

The summary table below shows that the proportion of invasive cancers for which nodal status was recorded that had fewer than 4 nodes examined has decreased from 10.6% in 1996/97 to 5.2% in 2002/03 (Table 51).

| <b>7 YEAR COMPARISON:<br/>NODAL STATUS ASSESSED ON THE BASIS OF &lt;4 NODES</b> |                                                           |                                    |
|---------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------|
| <b>Year of data collection</b>                                                  | <b>Number of invasive cancers with known nodal status</b> | <b>% with &lt;4 nodes examined</b> |
| 1996/97                                                                         | 4773                                                      | 10.6                               |
| 1997/98                                                                         | 5585                                                      | 9.0                                |
| 1998/99                                                                         | 5574                                                      | 6.7                                |
| 1999/00                                                                         | 7126                                                      | 5.5                                |
| 2000/01                                                                         | 7379                                                      | 5.0                                |
| 2001/02                                                                         | 7465                                                      | 5.1                                |
| 2002/03                                                                         | 8607                                                      | 5.2                                |

Data from Scotland and Northern Ireland are absent in 1998/99

If a sentinel node procedure is performed as part of a trial (e.g. ALMANAC), it is acceptable to obtain fewer than 4 nodes. The use of this new technique was therefore taken into account when analysing the data on the proportion of cases with fewer than 4 nodes examined. 320 (3.7%) of the invasive cancers for which nodal status was recorded had negative status determined on the basis of fewer than 4 nodes without a sentinel node procedure. Figure 28 shows that this varied from 0.7% in Northern Ireland (1 cancer) to 6.7% (51 cancers) in London.

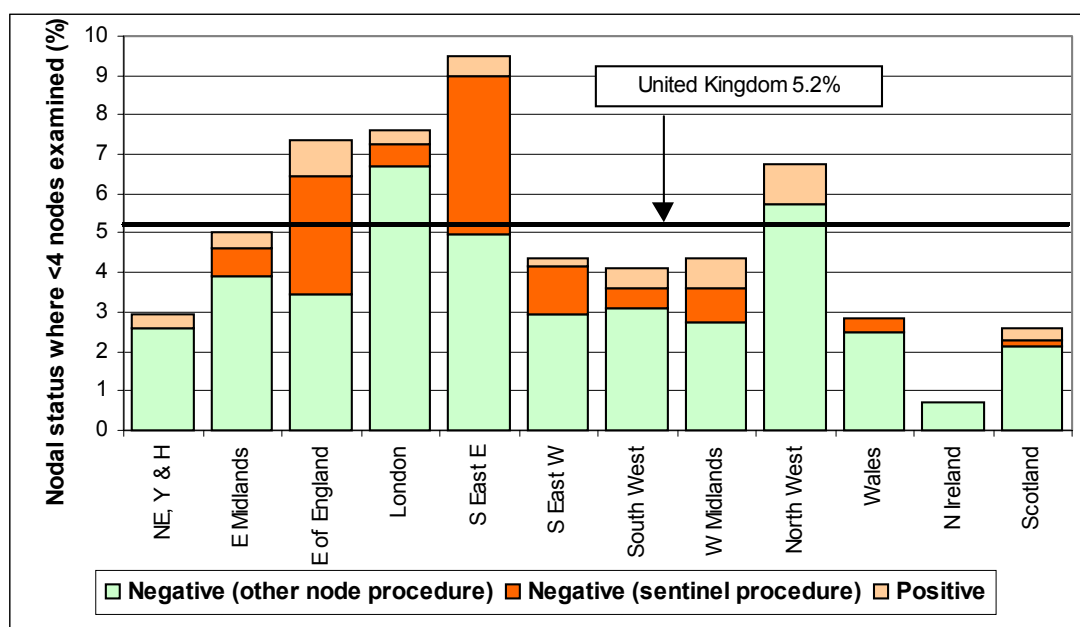


Figure 28 (Table 51): Variation in nodal status for invasive cancers where nodal status was determined on the basis of <4 nodes, expressed as the percentage of invasive cancers with known nodal status

A further 81 cancers (0.9%) had negative nodal status determined by a sentinel procedure. The majority of these cases were in East of England and South East (East). 39 (0.5%) of the invasive cancers had positive nodal status determined on the basis of fewer than 4 nodes without a sentinel procedure. A further 6 cases had their positive nodal status determined from a sentinel procedure. These cases should have had a subsequent nodal procedure as part of the sentinel node trial but these data were not collected in the audit.

Tables 48 and 51 show that of the 9,086 invasive cancers detected, 479 (5.3%) had unknown nodal status and 320 (3.7%) had negative nodal status determined without a sentinel procedure on the basis of 1, 2 or 3 nodes. Thus, 799 (8.8%) of the 9,086 invasive cancers detected appear to have insufficient nodal information to provide a satisfactory diagnostic work-up. The variation by region, from 4.0% in Scotland and 4.1% in West Midlands, to 17.7% in London and 14.7% in Northern Ireland is shown in the summary table below. Regional QA Reference Centres and Regional QA Surgeons should audit these cases to ascertain whether the data are a true reflection of clinical practice, as these cancers may have had an insufficient diagnostic work-up.

| <b>INVASIVE CANCERS WITH INSUFFICIENT NODAL INFORMATION</b> |                                       |                                                |                                                                       |                                               |            |
|-------------------------------------------------------------|---------------------------------------|------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------|------------|
| <b>Region</b>                                               | <b>Total<br/>invasive<br/>cancers</b> | <b>Unknown<br/>nodal status<br/>(Table 48)</b> | <b>Negative &lt;4 nodes<br/>(Other node procedure<br/>- Table 51)</b> | <b>Insufficient<br/>nodal<br/>information</b> |            |
|                                                             | <b>No.</b>                            | <b>No.</b>                                     | <b>No.</b>                                                            | <b>No.</b>                                    | <b>%</b>   |
| <i>N East, Yorks &amp; Humber</i>                           | 1134                                  | 48                                             | 28                                                                    | 76                                            | 6.7        |
| <i>East Midlands</i>                                        | 720                                   | 27                                             | 27                                                                    | 54                                            | 7.5        |
| <i>East of England</i>                                      | 954                                   | 83                                             | 30                                                                    | 113                                           | 11.8       |
| <i>London</i>                                               | 862                                   | 102                                            | 51                                                                    | 153                                           | 17.7       |
| <i>South East (East)</i>                                    | 652                                   | 29                                             | 31                                                                    | 60                                            | 9.2        |
| <i>South East (West)</i>                                    | 596                                   | 22                                             | 17                                                                    | 39                                            | 6.5        |
| <i>South West</i>                                           | 849                                   | 42                                             | 25                                                                    | 67                                            | 7.9        |
| <i>West Midlands</i>                                        | 811                                   | 11                                             | 22                                                                    | 33                                            | 4.1        |
| <i>North West</i>                                           | 1141                                  | 74                                             | 61                                                                    | 135                                           | 11.8       |
| <i>Wales</i>                                                | 532                                   | 5                                              | 13                                                                    | 18                                            | 3.4        |
| <i>Northern Ireland</i>                                     | 163                                   | 23                                             | 1                                                                     | 24                                            | 14.7       |
| <i>Scotland</i>                                             | 672                                   | 13                                             | 14                                                                    | 27                                            | 4.0        |
| <b>UK</b>                                                   | <b>9086</b>                           | <b>479</b>                                     | <b>320</b>                                                            | <b>799</b>                                    | <b>8.8</b> |

Figure 29 shows how the proportion of invasive cancers with unknown nodal status and with negative nodal status determined on the basis of less than 4 nodes without a sentinel procedure varied in individual screening units. The proportion of invasive cancers with insufficient nodal information to provide a satisfactory diagnostic work-up varied between 0 cases and 33%. In 4 screening units, more than 13% of invasive cancers had negative nodal status determined on the basis of less than 4 nodes without a sentinel procedure. These units treated between 43 and 136 invasive cancers.

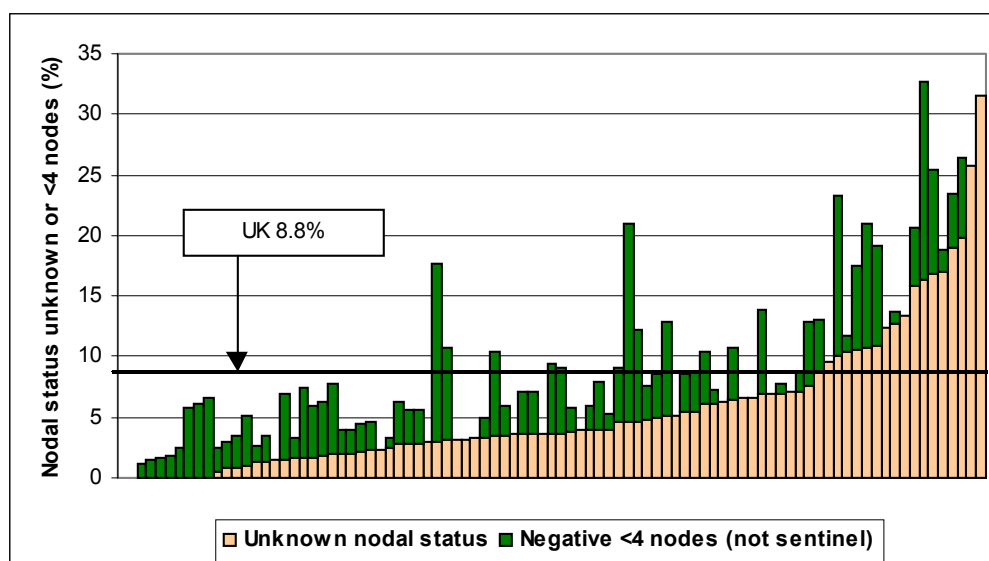


Figure 29: Variation by individual screening unit in the proportion of invasive cancers with insufficient nodal information

#### COMMENT:

- In the UK as a whole, 95% of invasive cancers had known nodal status. This varied between 86% in Northern Ireland and 99% in Wales and West Midlands.
- At 10 screening services nodal status was ascertained for 100% of invasive cancers. In 2 screening units diagnosing 31 and 89 invasive cancers, more than 25% of cases had unknown nodal status.
- For the fourth consecutive year, 25% of invasive cancers had positive nodal status, but this varied between 10% and 47% in individual screening units.
- Overall, 8.8% of invasive cancers had unknown nodal status, or had negative nodal status determined without a sentinel procedure on the basis of fewer than 4 nodes. This varied from 4.0% in Scotland and 4.1% in West Midlands, to 17.7% in London and 14.7% in Northern Ireland. Regional QA Reference Centres and Regional QA Surgeons should audit these cases to ascertain whether the data are a true reflection of clinical practice, as these cancers may have had an insufficient diagnostic work-up.

## 4.2 Lymph Node Status of Non-invasive Cancers

Of the 2,348 non-invasive cancers, 26% had nodal status known, varying from 16% in Northern Ireland to 37% in Wales (Figure 30). For 31 non-invasive cancers (1%) it was unknown whether nodes were taken, the majority of these were in Northern Ireland.

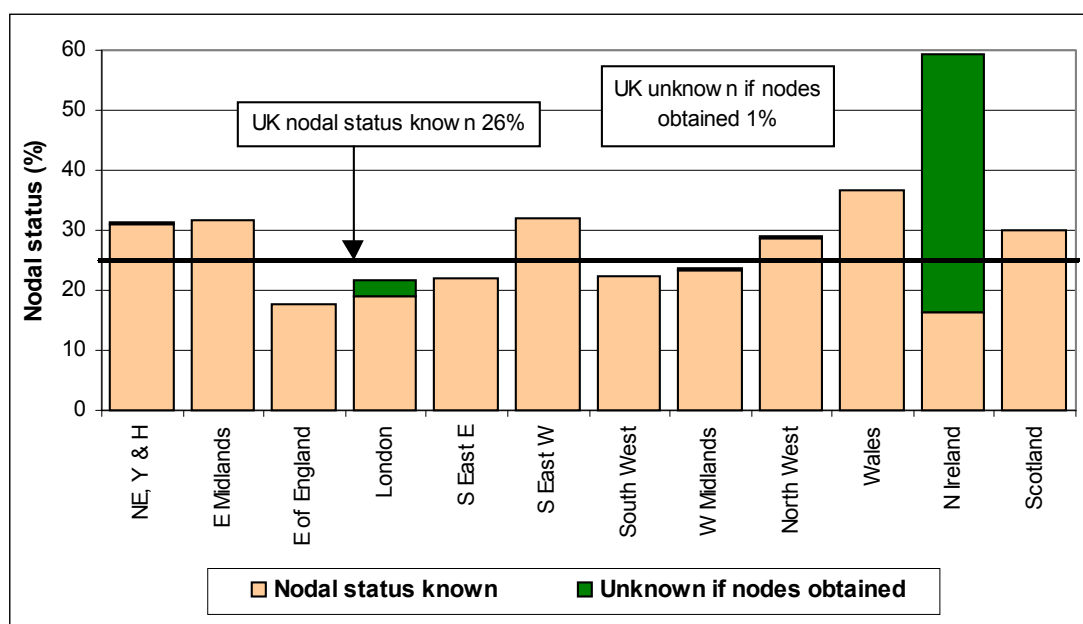
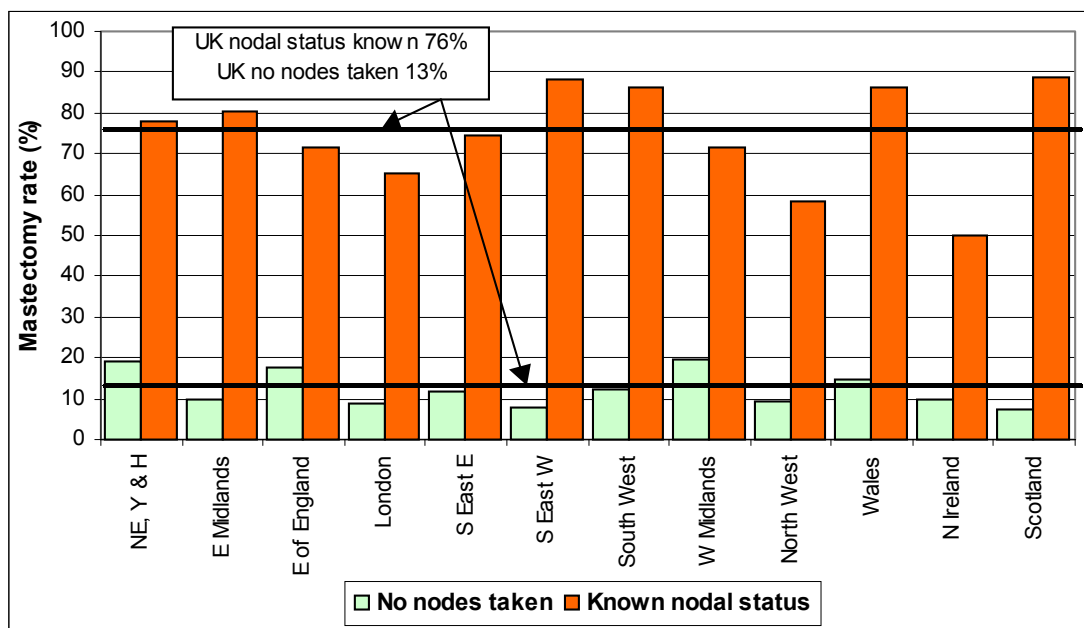


Figure 30 (Table 52): Variation in the proportion of non-invasive cancers with nodal status recorded

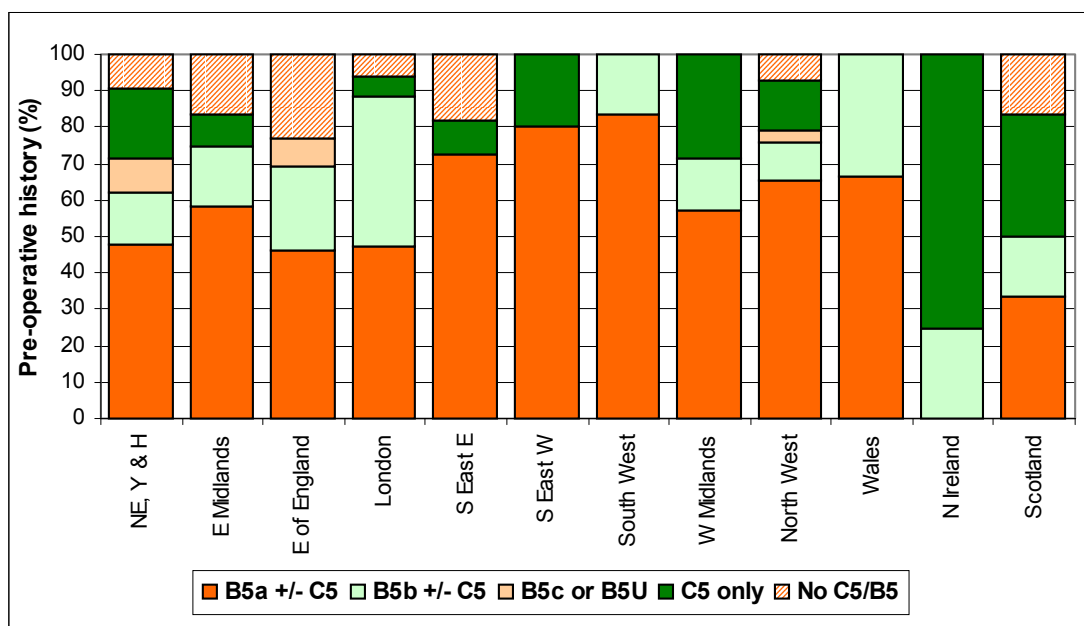
Of the 605 non-invasive cancers with known nodal status, 11 (2%) had positive nodal status recorded (Table 53). This is consistent with previous studies suggesting that 2% of non-invasive breast cancers have non-identified invasive disease removed during the diagnostic process. Table 54 shows that the median number of nodes examined for non-invasive cancers with known nodal status was 5. In Northern Ireland the median was 14 nodes.

Although nodal assessment is not usually indicated for non-invasive cancers, nodes may be obtained when a mastectomy is performed, especially if the assessment process provides suspicion of invasive disease. Figure 31 shows that the mastectomy rate for non-invasive cancers with known nodal status was much higher than for non-invasive cancers with no nodes obtained (76% and 13% respectively). The lowest mastectomy rates for non-invasive cancers with known nodal status were

in North West (59%) and Northern Ireland (50%). This suggests that in these regions, nodal assessment is being carried out when conservation surgery is performed.



**Figure 31 (Table 55, 57): Variation in the mastectomy rate for non-invasive cancers with known nodal status and with no nodes taken**



**Figure 32 (Table 56): Variation in the proportion of pre-operative history for non-invasive cancers with known nodal status treated by conservation**

Figure 32 shows the pre-operative history for the conservatively treated non-invasive cancers with known nodal status. For 81 cancers (56%) non-invasive disease was predicted by the core biopsy (B5a). Radiological or clinical factors may have influenced the decision to take nodes for these cases. For 25 cases (17%) a B5b (Invasive) core biopsy predicted invasive disease but the invasive status of the tumour was determined to be non-invasive following surgery. Nodes were therefore taken at surgery as recommended for the anticipated invasive disease. 21 cases (15%) had C5 cytology alone with no B5 core biopsy before proceeding to breast conservation with axillary surgery. A further 4 cases had not assessable or unknown malignancy type at core biopsy and 13 cases had neither a C5 cytology nor B5 core biopsy prior to surgery.

#### COMMENT:

- Although nodal assessment is not usually indicated for non-invasive cancers, 26% of non-invasive cancers had known nodal status.
- 2% of non-invasive cancers with known nodal status had positive nodal status recorded. This is consistent with previous studies suggesting that 2% of non-invasive breast cancers have non-identified invasive disease removed during the diagnostic process.
- The mastectomy rate for non-invasive cancers with known nodal status was much higher than for non-invasive cancers with no nodes obtained (76% and 13% respectively in the UK as a whole).
- 56% of conservatively treated non-invasive cancers with known nodal status had non-invasive disease predicted by B5a core biopsy. Radiological or clinical factors may have influenced the decision to take nodes for these cases.

### 4.3 Grade of Invasive Cancers

Of the 9,086 invasive cancers detected, 2,952 (32%) were Grade I, 4,249 (47%) were Grade II and 1,498 (16%) were Grade III (Table 58). Grade was not assessable for 78 cases (1%). Grade was unknown for 309 cases (3%), varying from 0% in East Midlands (1 case) and South West (4 cases) to 4% in London (32 cases) and 17% in East of England (161 cases). These data are shown for individual screening units in Figure 33.

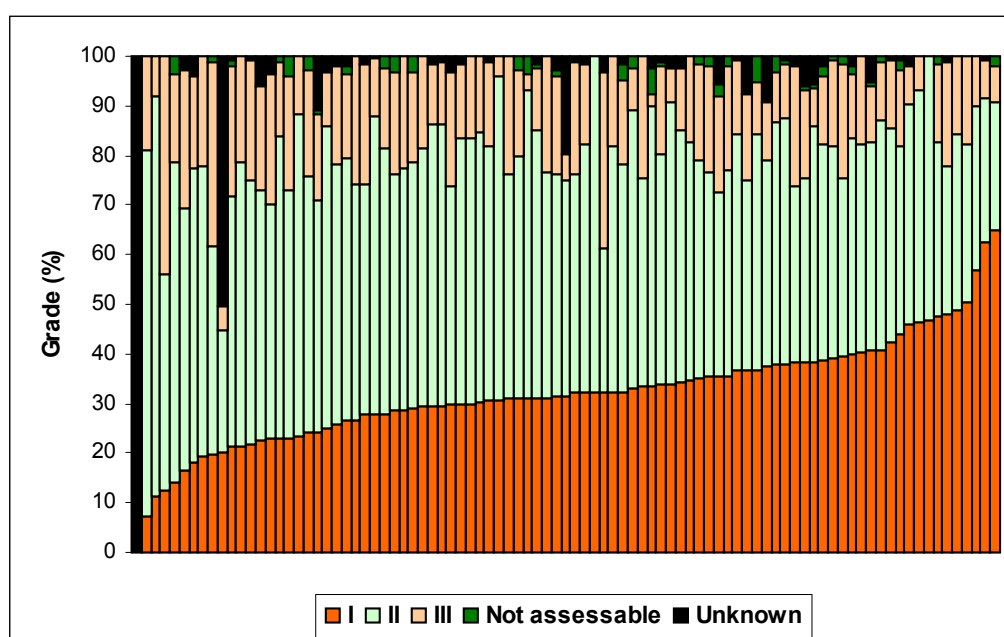


Figure 33: Variation by screening units in the invasive grade of invasive cancers

One screening unit with 95 invasive cancers was unable to provide invasive grade for any case. The proportion of Grade I cancers varied between 7% and 65%. The 4 units with fewer than 15% of cancers recorded as Grade I treated between 16 and 61 invasive cancers. The 4 units with more than 50% of cancers recorded as Grade I treated between 54 and 120 invasive cancers. This suggests that there are local variations in the interpretation of invasive grade definitions.

### 4.4 NPI of Invasive Cancers

The Nottingham Prognostic Index (NPI) was calculated for invasive cancers in order to allocate the invasive cancers to one of five prognostic groups. An NPI score was calculated for all invasive cancers with complete size, grade and nodal status information, even if nodal status was based on

fewer than 4 nodes. It should be noted that the differences in invasive grade outlined in the previous figure will also have affected the NPI groupings.

$$\text{NPI Group} = 0.2 \times \text{Invasive Size (cm)} + \text{Grade} + \text{Nodes}$$

where Nodes equals 1 (0 positive nodes), 2 (1, 2 or 3 positive nodes) or 3 ( $\geq 4$  positive nodes)

|                                           |            |
|-------------------------------------------|------------|
| <b>EPG</b> (Excellent Prognostic Group)   | $\leq 2.4$ |
| <b>GPG</b> (Good Prognostic Group)        | 2.401-3.4  |
| <b>MPG1</b> (Moderate Prognostic Group 1) | 3.401-4.4  |
| <b>MPG2</b> (Moderate Prognostic Group 2) | 4.401-5.4  |
| <b>PPG</b> (Poor Prognostic Group)        | $> 5.4$    |

An NPI score cannot be calculated if size, nodal status or grade are unknown or grade is not assessable. The NPI score was unknown for 8% of invasive cancers. Figure 34 shows that this varied from 2% in West Midlands to 15% or more in London (15%), Northern Ireland (17%) and East of England (23%). In Northern Ireland and London the high proportions of unknown NPI score were largely due to unknown nodal status. In East of England it was largely due to unknown grade and unknown size.

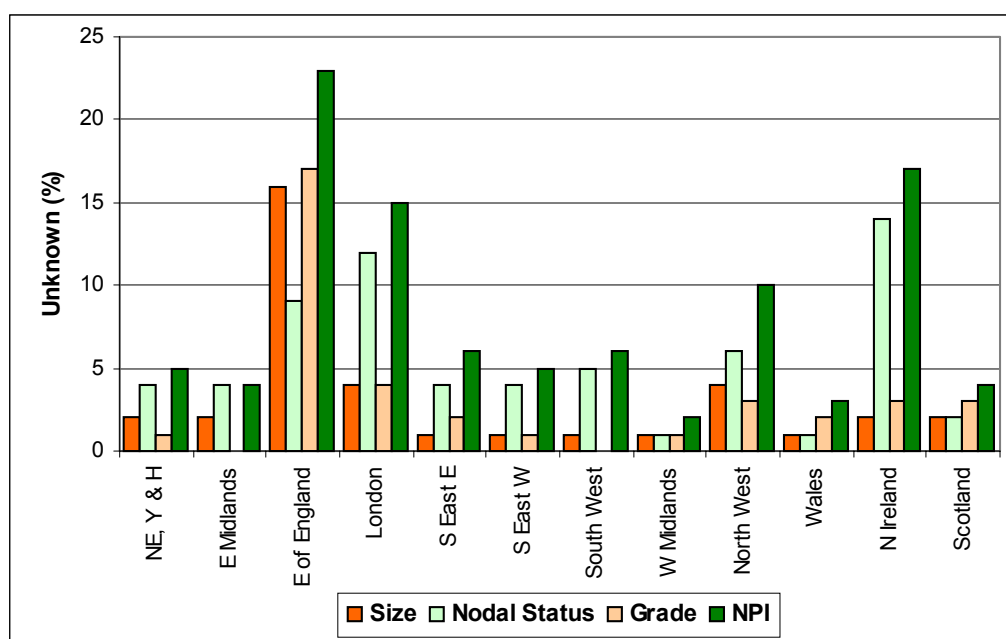


Figure 34 (Table 59): Variation in the data completeness of invasive cancers

Of the 8,333 invasive cancers with known NPI score, the highest proportion fell into the Good Prognostic Group (35%), with 6% in the Poor Prognostic Group. As expected with cancers detected by screening, the majority (61%) of cancers fell into the two best prognostic groups, EPG (Excellent Prognostic Group) and GPG (Good Prognostic Group). This varied from 54% in Northern Ireland to 65% in Wales (Table 60). The relatively low proportion of EPG and GPG cancers in Northern Ireland is due to the high proportion of Grade III cancers compared with the UK as a whole (24% compared to 16%, Table 58).

Figure 35 shows the variation in the NPI group of invasive cancers in individual screening units. The proportion of cancers in the best two prognostic groups (EPG, PPG) varied from 35% in a unit with 35 cancers with known NPI score to 81% in a unit with 53 cancers with known NPI score, compared to 61% in the UK as a whole. Seven screening units, with between 27 and 56 invasive cancers with known NPI score, had no Poor Prognostic Group cancers. The screening units with

the highest proportion of Poor Prognostic Group cancers (15%) diagnosed 41 invasive cancers with known NPI score.

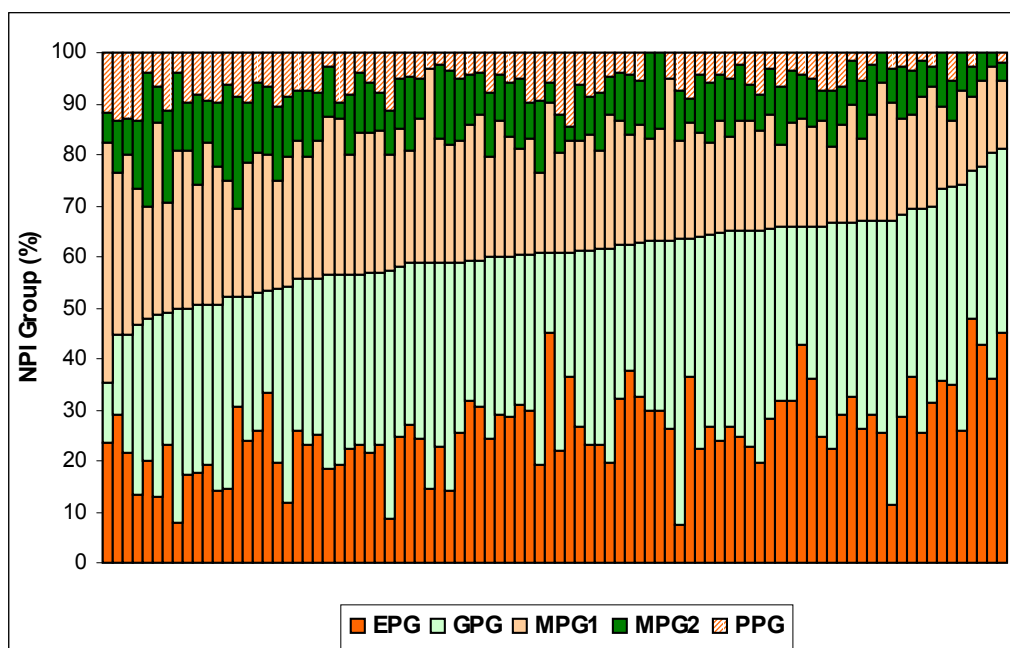


Figure 35: Variation by individual screening unit in the NPI Group of invasive cancers

**COMMENT:**

- Overall, 32% of invasive cancers were Grade I, 47% were Grade II and 16% were Grade III. Grade was not assessable for 78 cases (1%) and unknown for 309 cases (3%). In Northern Ireland 24% of cancers were Grade III.
- The proportion of Grade I cancers varied between 7% and 65% in individual screening units, suggesting that there are local variations in the interpretation of invasive grade definitions.
- Data were available to calculate the Nottingham Prognostic Index (NPI) for 92% of invasive cancers.
- As expected with cancers detected by screening, the majority (61%) of cancers fell into the two best prognostic groups, EPG (Excellent Prognostic Group) and GPG (Good Prognostic Group).
- The proportion of EPG and GPG cancers varied from 54% in Northern Ireland to 65% in Wales. The relatively low proportion of EPG and GPG cancers in Northern Ireland is due to the high proportion of Grade III cancers compared with the UK as a whole.

## 5. SCREENING SURGICAL CASELOAD

There were 472 consultant breast surgeons working in the UK NHSBSP in 2002/03. This UK figure counts only once the 41 surgeons who worked in more than one region. Throughout this section, each surgeon is credited with their total UK screening caseload.

423 of the 472 consultant surgeons were identified by their unique GMC registration code. A code other than the GMC code was provided for a further 39, including all 32 surgeons in Scotland. 10 screening units could not provide unique identifying codes for all their cases. It has been assumed that the unknown surgeons at these 10 screening units are 10 individual surgeons.

The screening surgical caseload is shown for each region in Figure 36. The 41 surgeons working in more than 1 region appear in each region's figures. 154 surgeons (33%) treated 30-99 cases and 4 surgeons (0%) treated more than 100 cases. 70 surgeons (15%) treated 10-19 screening cases, 70 (15%) treated 20-29 cases, and 174 surgeons (37%) had a screening caseload of fewer than 10 cases.

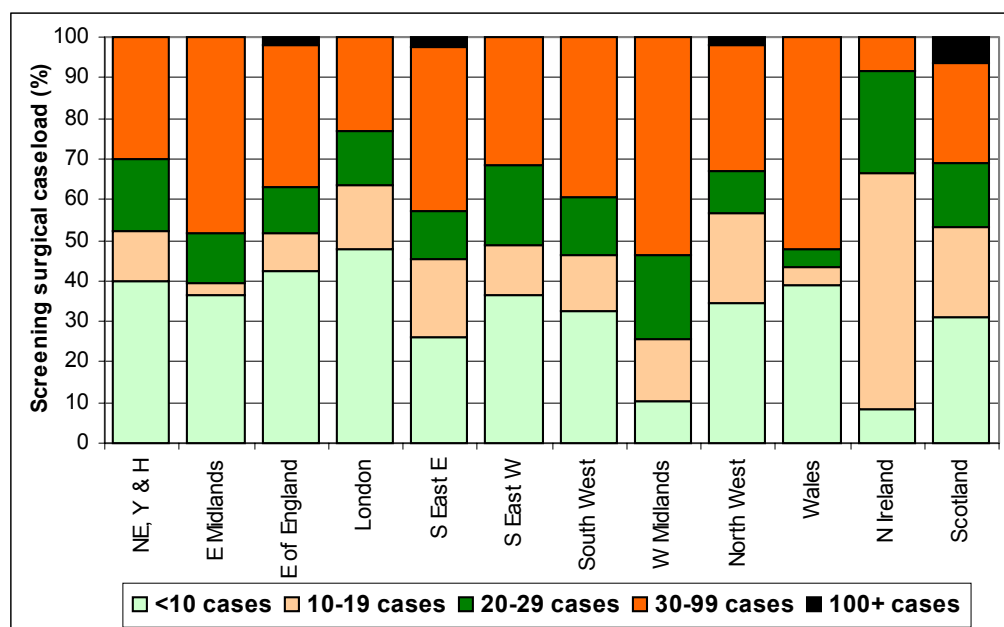
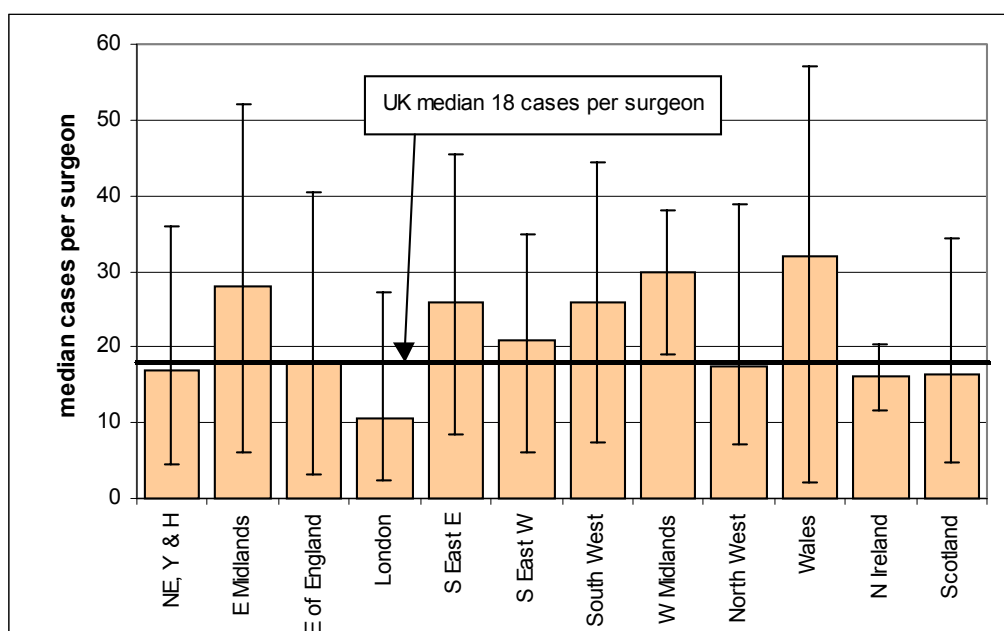


Figure 36 (Table 61): Variation in screening surgical caseload expressed as the number of cases per surgeon

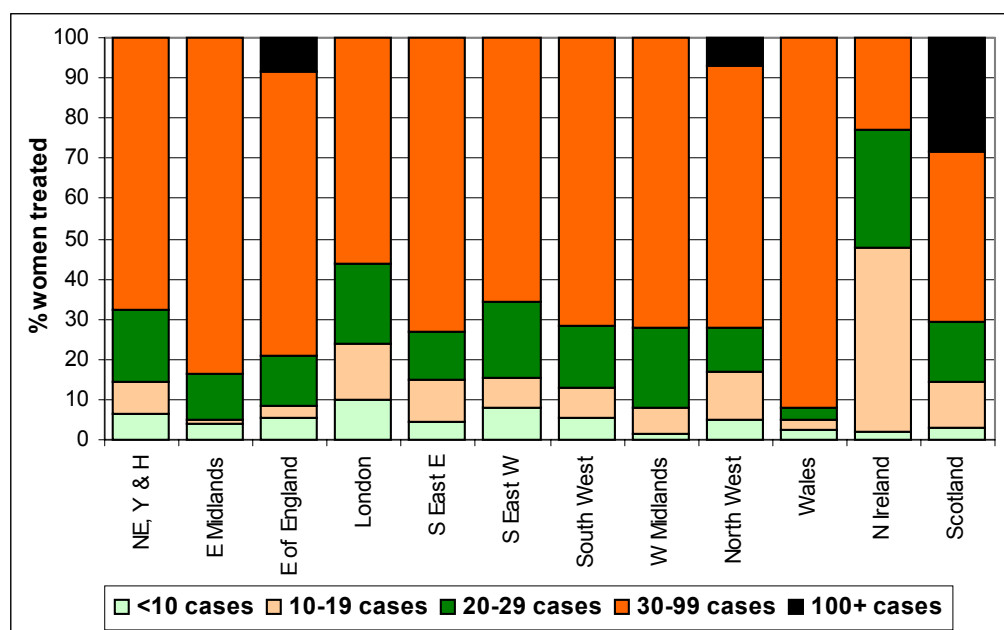
The highest proportions of surgeons with a screening caseload of fewer than 10 were in London (48%) and East of England (43%). Surgical specialisation was most advanced in Northern Ireland and West Midlands where only 8-10% of surgeons treated fewer than 10 screening cases.

The median screening caseload per surgeon, and the interquartile range, are shown for each region in Figure 37. Overall the median was 18 screening cases, with a quarter of surgeons seeing 37 cases or more. The highest median was in Wales (32 cases) and the lowest in London (11 cases). The maximum screening caseload, seen by a surgeon in Scotland, was 132 cases. Another surgeon in Scotland treated 112 cases, and a surgeon in East of England treated 108 cases. One surgeon who worked in North West and South East (East) treated 100 screening cases.



**Figure 37 (Table 62): Variation in the median number of cases treated by individual surgeons, and the interquartile range**

Table 63 shows the number of women treated by 2 or 3 surgeons and those with no surgery. Of the 11,593 women with screen detected cancer in 2002/03, 94 (1%) had no surgeon and 133 (1%) were treated by 2 surgeons. One woman in London was treated by 3 consultant surgeons. Women treated by more than 1 surgeon appear in the UK screening caseload figure for each surgeon, giving a total number of 11,634 treated cases.



**Figure 38 (Table 64): Variation in the proportion of women treated by surgeons with differing screening caseloads**

Figure 38 shows the variation in the proportion of women treated by surgeons with differing screening caseloads. Of the 11,634 women treated, 7,855 (68%) were treated by a surgeon with a screening caseload of 30-99 cases. A further 452 women (4%) were treated by the 4 surgeons with screening caseload 100+ cases. For 1,723 women (15%) the treating surgeon had a screening caseload of 20-29 cases, and for 999 women (9%) the treating surgeon had a screening caseload of 10-19 cases. 605 women (5%) were treated by a surgeon with screening caseload of less than 10

cases. In London, 10% of women were treated by a surgeon with screening caseload of less than 10 cases.

Each region was asked to provide reasons for all surgeons with a screening caseload of less than 10 cases. A list of 7 satisfactory reasons for low caseload was provided (see Appendix 2). If multiple reasons were given, only one was included. The reasons given for the surgeons with UK screening caseload less than 10 are shown in Figure 39.

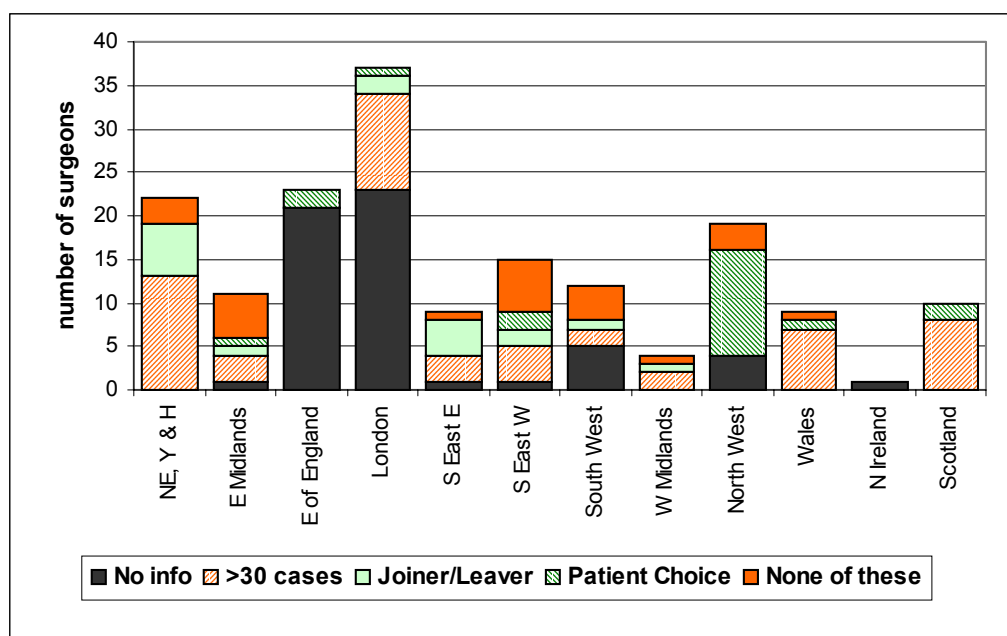


Figure 39 (Table 65): Explanations provided for surgeons treating <10 screening cases a year

Of the 174 surgeons in the UK with a screening caseload of less than 10 cases, 52 (30%) treated more than 30 symptomatic breast cancers during 2002/03. 25 (14%) either joined or left the NHSBSP during 2002/03. 21 (12%) of the low caseload surgeons operated under patient choice. One of the other satisfactory reasons (plastic surgeon, private practice, no screening in area) was given for 19 surgeons (11%). No information was available to explain the low screening caseload recorded for 55 surgeons (32%). These 55 surgeons treated a total of 164 women. For 2 surgeons a reason other than one of the 7 listed was provided. In both cases this reason was that the surgeon was an associate specialist.

| <b>3 YEAR SUMMARY : SCREENING SURGICAL CASELOAD</b> |                                     |                                  |                                                                             |                                                          |                                                                                    |
|-----------------------------------------------------|-------------------------------------|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Year</b>                                         | <b>Number of screening surgeons</b> | <b>Median screening caseload</b> | <b>Proportion of women treated by a surgeon with screening caseload 20+</b> | <b>Number of surgeons with screening caseload &lt;10</b> | <b>Number of surgeons with no information to explain screening caseload &lt;10</b> |
| <b>2000/01</b>                                      | 419                                 | 17                               | 86                                                                          | 159                                                      | 25                                                                                 |
| <b>2001/02</b>                                      | 439                                 | 18                               | 85                                                                          | 156                                                      | 52                                                                                 |
| <b>2002/03</b>                                      | 472                                 | 18                               | 86                                                                          | 174                                                      | 55                                                                                 |

Since 2000/01, screening caseload data supplied by each screening service have been collated across the UK to improve the accuracy of the data. The number of surgeons working in the NHS Breast Screening Programme has risen from 419 in 2000/01 to 472 in 2002/03. The proportion of women treated by surgeons with a screening caseload of 20 or more has remained stable at 86%. However, the number of surgeons with a screening caseload of fewer than 10 cases has risen from

159 to 174. The number of surgeons with no reason for low caseload has risen from 25 to 55. East of England and London had most difficulty in identifying reasons for low caseload in 2002/03.

**COMMENT:**

- There were 472 consultant breast surgeons working in the UK NHSBSP in 2002/03, a rise of 13% from 419 surgeons in 2000/01.
- 86% of women were seen by a surgeon with a screening caseload of at least 20 cases.
- Of the 174 surgeons with a screening caseload of less than 10 cases, 52 (30%) treated more than 30 symptomatic breast cancers during 2002/03.
- Information was unavailable to explain the low caseload of 55 surgeons. These surgeons treated a total of 164 women.

## 6. NUMBER AND SEQUENCE OF THERAPEUTIC OPERATIONS

Summary tables giving regional variation are provided in Appendix 6 starting on p123

For the first time, details of each operation were requested so that the reasons for repeat therapeutic operations could be examined in detail. All operations, both diagnostic and therapeutic, were coded as either conservation surgery alone (Cons), mastectomy alone (Mx), axillary surgery alone (Ax) or a combination (Cons & Ax, Mx & Ax).

Diagnostic open biopsies were coded as conservation surgery. For any case without a pre-operative diagnosis by C5 cytology or B5 core biopsy, the first operation was defined to be diagnostic even if there was also therapeutic intent, so that the number of therapeutic operations is one fewer than the total number of operations. It should also be noted that attempting axillary surgery does not necessarily mean that axillary lymph nodes are successfully harvested. Conversely, incidental axillary lymph nodes can be obtained during a mastectomy or conservation surgery procedure. For this reason the nodal ascertainment rate presented in Section 4 does not exactly match the proportion of cases with a planned axillary procedure, but does agree approximately.

Repeat operation rates for various groups of screen detected breast cancers are presented, together with detailed flow charts of the sequence of operations. Each flow chart represents the number of different sequences in the UK as a whole. Sequences that make up less than 1% of the total cases are grouped together according to when the axillary surgery was performed. Regional variation in the most popular sequences is summarised in the tables in Appendix 6.

### 6.1 Repeat Therapeutic Operations

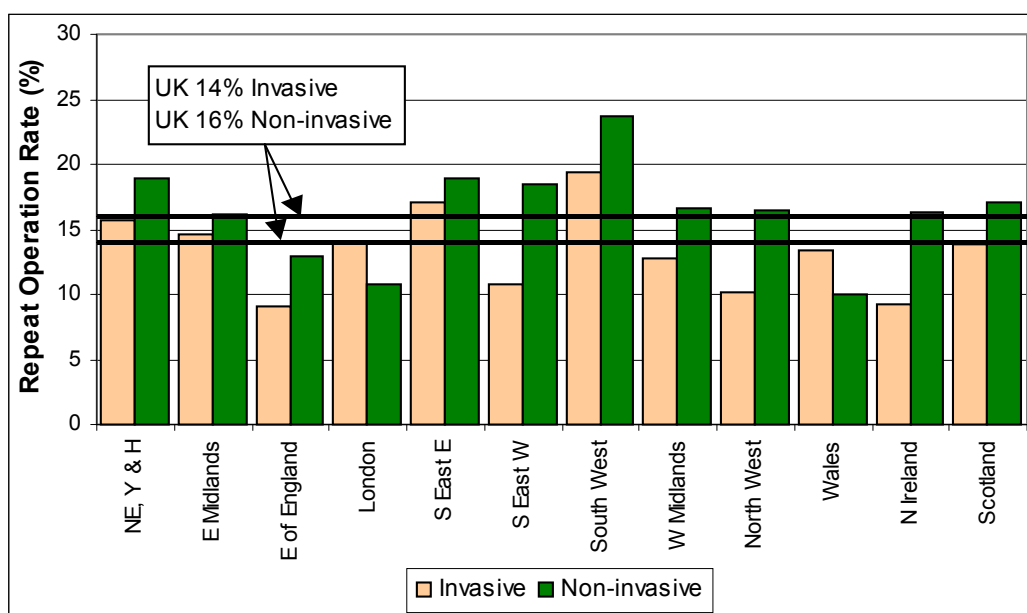
**Quality Objective:** To minimise the number of therapeutic operations.

**Outcome Measure:** 90% of women with single lesions (excluding multi-focal tumours and those with associated extensive ductal carcinoma *in situ*) should not require a further operation to ensure complete excision.

(Quality Assurance Guidelines for Surgeons in Breast Screening NHSBSP  
Publication No. 20 revised November 2003)

In the UK as a whole, 15% of cancers with a proven pre-operative diagnosis by C5 cytology and/or B5 core biopsy underwent more than one therapeutic operation (Table 66). This varied from 10% in East of England to 21% in South West.

Figure 40 shows that 14% of invasive cancers and 16% of non-invasive cancers underwent more than one therapeutic operation. For invasive cancers the proportion having more than one operation varied from 9% in East of England and Northern Ireland to 19% in South West. For non-invasive cancers this proportion varied from 10% in Wales to 24% in South West.



**Figure 40 (Tables 67,68) : Variation in the proportion of invasive and non-invasive cancers undergoing two or more therapeutic operations**

Repeat therapeutic operations may be carried out for a variety of reasons other than re-excision to clear margins. Repeat operations are also carried out for reasons of cosmesis, patient choice and to obtain axillary lymph nodes. The reasons for repeat therapeutic operations for cancers with a pre-operative diagnosis depend upon the invasive status predicted by the pre-operative core biopsy. C5 cytology does not predict invasive status. In all cases, radiological and clinical factors can also influence the treatment decision. The following hypothetical scenarios were considered.

**Scenario 1 :** Invasion present which was not predicted by pre-operative diagnosis and repeat operation undertaken to obtain nodes

- cancers with a B5a (Non-invasive) pre-operative diagnosis found to be invasive after surgery where nodes were not taken at the first operation
- cancers with a C5 diagnosis where nodes were not taken at the first operation in line with local protocol

**Scenario 2 :** Margins not clear for expected component of tumour

- repeat operation (conservation or mastectomy) to clear margins

**Scenario 3 :** Margins not clear for unexpected DCIS present with a small invasive tumour

- small cancers with a B5b (Invasive) pre-operative diagnosis found to have DCIS present after surgery require repeat operation (conservation or mastectomy) to clear margins

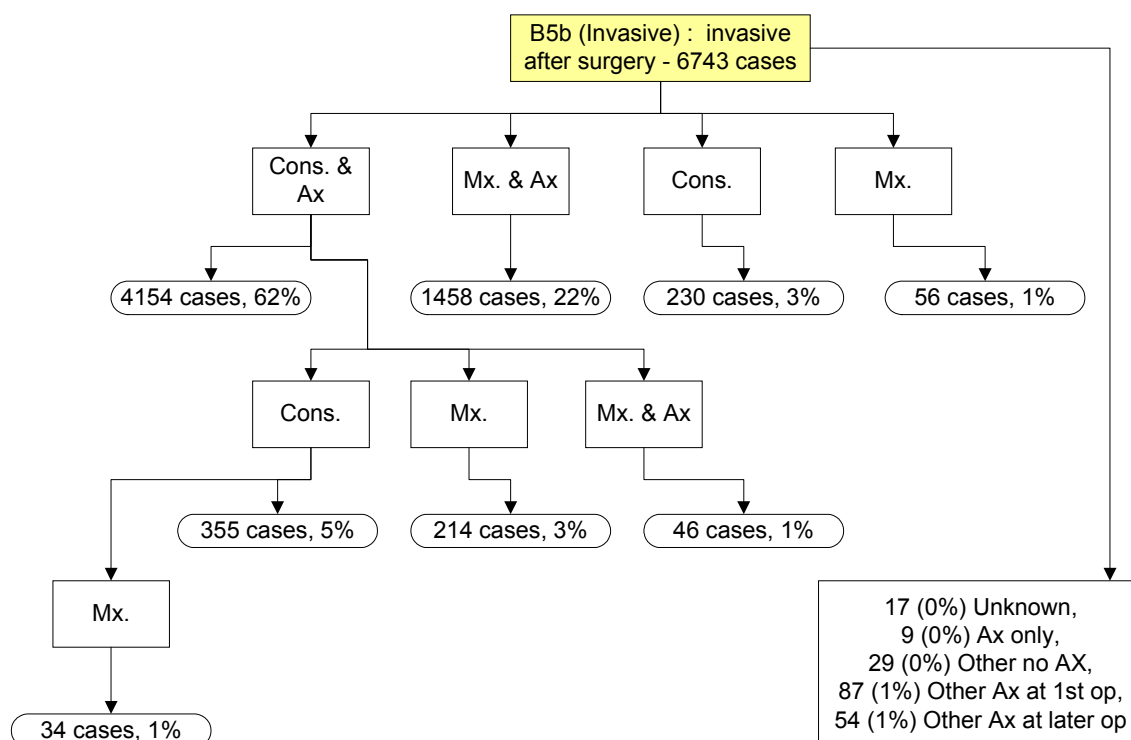
**Scenario 4 :** Additional therapeutic nodal procedure undertaken

- insufficient number of nodes harvested at first operation
- therapeutic clearance of nodes when large proportion of nodes taken at first operation are positive
- clearance of nodes following positive sentinel node procedure

## 6.2 Sequence of Operations for Cancers with B5b (Invasive) Core Biopsy Proved to be Invasive After Surgery

97% of cancers with a B5b (Invasive) core biopsy result proved to be invasive following surgery (Table 9). The treatment operation can thus be planned in advance, so these cases are least likely to require a repeat therapeutic operation. In the UK as a whole, 12% of invasive cancers with a B5b (Invasive) core biopsy required a repeat therapeutic operation. This varied from 7% in East of England to 18% in South West (Table 69).

The flow chart in Figure 41 shows that the majority (62%) of these B5b (Invasive) cancers underwent a single therapeutic operation consisting of conservation surgery with an axillary procedure. 22% underwent a single therapeutic operation consisting of mastectomy with an axillary procedure. The next most popular sequence of operations was conservation surgery with an axillary procedure as the first therapeutic operation followed by repeat conservation surgery (355 cases, 5%). These repeat operations were probably undertaken to clear involved or close margins. Another 260 (4%) cases were converted to mastectomy or mastectomy with axillary procedure following the initial conservation surgery and axillary procedure. For these cases, DCIS was probably present at the margin.

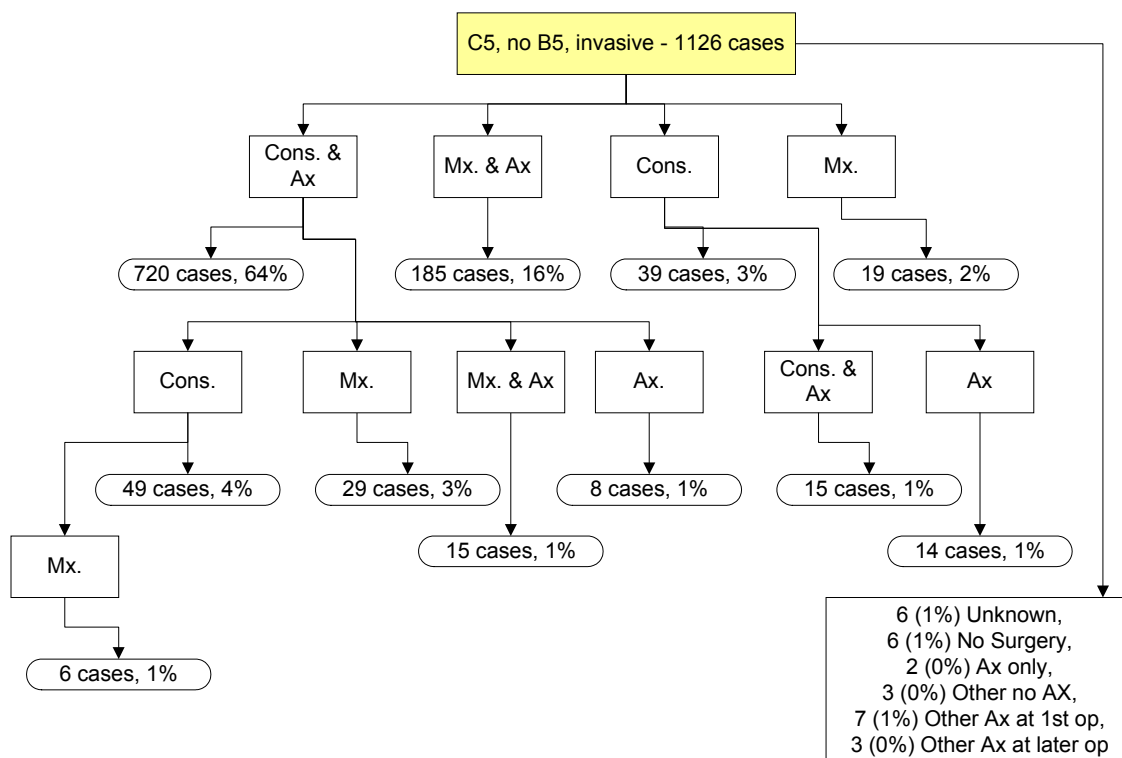


**Figure 41 (Table 70): Sequence of operations for cancers with B5b (Invasive) core biopsy proved to be invasive after surgery**

Overall, 6,357 cancers (94%) had an axillary procedure at the first operation. A further 54 (1%) cancers did not have nodes taken at the first operation but underwent a repeat operation to obtain nodes. This varied from 0 cases in East Midlands and South East (East) to 2% in London (10 cases), North West (14 cases) and Scotland (11 cases). In London 204 cases (31%) had no axillary procedure recorded. This regional variation is shown in Table 70 in Appendix 6, and in Tables 6.6B and 6.6C in Section 6.6.

### 6.3 Sequence of Operations for Invasive Cancers with C5 Cytology Only

For invasive cancers with C5 cytology only and no B5 core biopsy prior to surgery, radiological or clinical features are of increased importance when planning the treatment operation. The most popular treatment, given to 64% of these cancers, was a single therapeutic operation consisting of conservation surgery and an axillary procedure. 185 cases (16%) underwent a single therapeutic operation consisting of a mastectomy and an axillary procedure. Presumably in these cases, the clinical and radiological signs were strongly supportive of the presence of invasive disease. Of these 185 cases, 46 (9%) were small (<15mm) invasive tumours. 49 cancers (4%) underwent a second conservative operation following conservation and axillary surgery, probably to clear involved margins.



**Figure 42 (Table 72) : Sequence of operations for invasive cancers with C5 cytology only, no B5**

In the UK as a whole, 149 (13%) of the 1,126 invasive cancers diagnosed by C5 cytology only underwent a repeat operation, varying from 2% in South East (West) and Northern Ireland to 20% in London, 22% in South East (East) and 26% in South West (Table 71). Overall, 1,021 cancers (91%) had an axillary procedure at the first operation. A further 32 (3%) cancers did not have nodes taken at the first operation but underwent a repeat operation to obtain nodes. This varied from 0 cases in South East (West) and Northern Ireland to 16% (8 cases) in London. 61 cases (5%) did not have any axillary procedure recorded, varying from 0 cases in West Midlands, Wales and Scotland to 16% in London (8 cases) and 23% in East of England (31 cases). This regional variation is shown in Table 72 in Appendix 6, and in Tables 6.6B and 6.6C of Section 6.6.

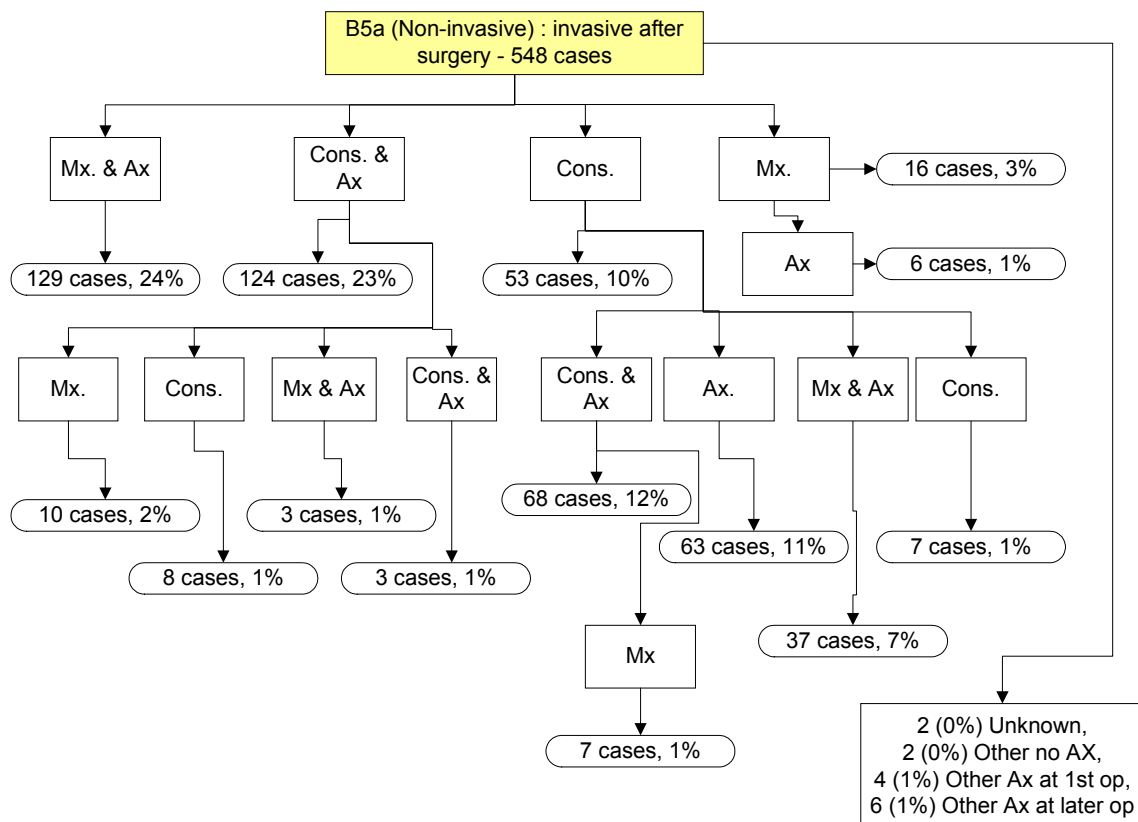
### 6.4 Sequence of Operations for Cancers with B5a (Non-invasive) Core Biopsy Determined to be Invasive After Surgery

In the UK as a whole, 24% of cancers with a B5a (Non-invasive) core biopsy result were identified to have invasive disease following surgery (Table 8). However, there was wide variation in individual screening units. In screening units with 10 or more B5a (Non-invasive) core biopsy results, the proportion found to be invasive varied from 0 cases to 70% of cases. The accuracy of

the B5a (Non-invasive) core biopsy result together with radiological and clinical factors determines the planned treatment options. There were thus many different sequences of treatment operations seen across the UK as a whole.

224 (41%) of the 548 cancers with a B5a (Non-invasive) core biopsy determined to be invasive after surgery underwent a repeat operation (Table 73). This varied from 18% in Northern Ireland to 53% in East Midlands and 54% in West Midlands. The most popular treatments were a single operation consisting of mastectomy with an axillary procedure (129 cases, 24%) or a single operation consisting of conservation surgery with an axillary procedure (124 cases, 23%). Presumably in these cases, contrary to the core biopsy result, the clinical and radiological signs were strongly supportive of the presence of an invasive cancer.

The next most popular sequences of operations were conservation surgery as the first therapeutic operation followed by a repeat operation to obtain axillary lymph nodes with conservation surgery (68 cases, 12%) or axillary surgery alone (63 cases, 11%). In the former case, the repeat operation was presumably undertaken to clear involved margins as well as to obtain nodes. However, the 63 women who had a repeat operation solely to obtain nodes would not have had to undergo additional surgery had the original core biopsy correctly predicted the invasive status of the tumour.



**Figure 43 (Table 74) : Sequence of operations for cancers with B5a (Non-invasive) core biopsy determined to be invasive after surgery**

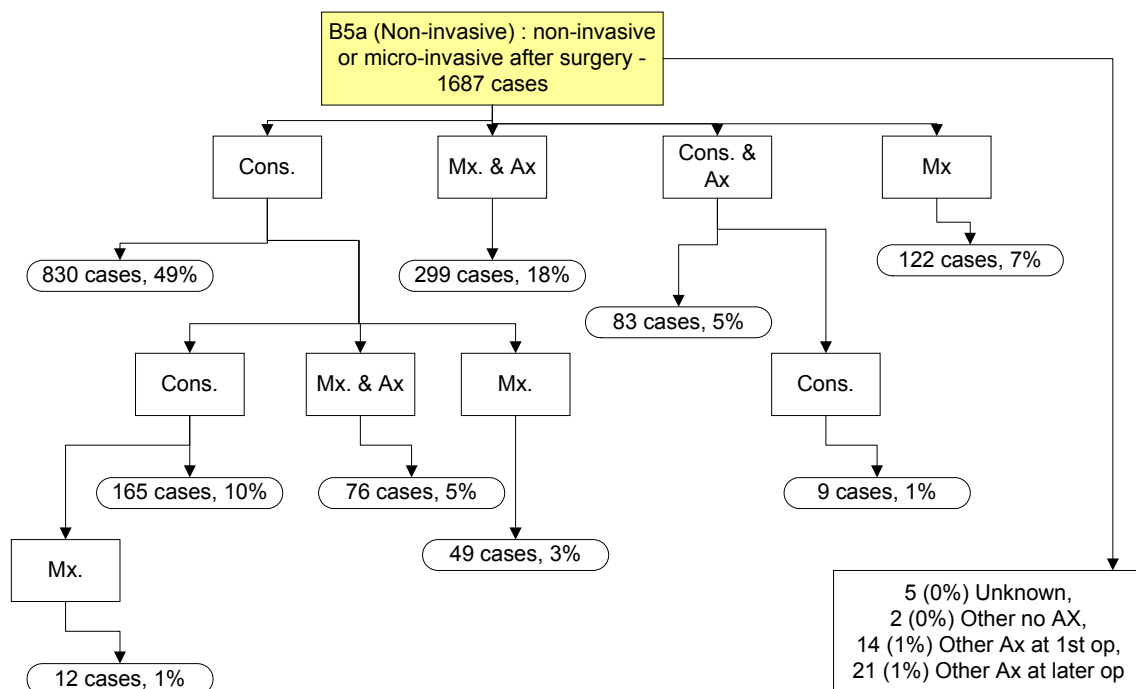
Overall, 344 cancers (63%) had an axillary procedure at the first operation, varying from 48% in London to 75% in East Midlands and 78% in Wales. 124 cancers (23%) did not have nodes taken at the first operation but underwent a repeat operation to obtain nodes once invasive disease had been histologically proven. This varied from 6% (1 case) in Northern Ireland to 29% in North East, Yorkshire & Humber and 36% in West Midlands. 78 cases (14%) did not have any axillary procedure recorded, varying from 0 cases in Scotland to more than 20% of cases in North West

(21%), South East (East) (22%), East of England (24%) and London (31%). This regional variation is shown in Table 74 in Appendix 6, and in Tables 6.6B and 6.6C of Section 6.6.

## 6.5 Sequence of Operations for Cancers with B5a (Non-invasive) Core Biopsy Proved to be Non-invasive or Micro-invasive After Surgery

In the UK as a whole, 74% of cancers with a B5a (Non-invasive) core biopsy result were confirmed to be non-invasive or micro-invasive following surgery (Table 8). Overall, 348 (21%) of the 1,687 cancers with B5a (Non-invasive) core biopsy result that were confirmed to be non-invasive or micro-invasive following surgery had a repeat therapeutic operation (Table 75). The repeat operation rate varied from 13% in London and Wales to 29% in South West and Northern Ireland.

The flow chart below shows that the majority of these repeat operations were for re-excision or mastectomy without an axillary procedure. The most popular treatment for these cancers was a single conservation surgery operation (830 cases, 49%). A further 299 cases (18%) underwent a single therapeutic operation consisting of a mastectomy and axillary surgery.



**Figure 44 (Table 76) : Sequence of operations for cancers with B5a (Non-invasive) core biopsy proved to be non-invasive or micro-invasive after surgery**

Table 6.5A shows that, of the 1,180 B5a (Non-invasive) cancers which proved to be non-invasive or micro-invasive, the majority (70%) had no axillary surgery. This varied from 59% in Scotland to 80% in East of England and London and 82% in Northern Ireland. Overall, 405 cancers (24%) had axillary surgery at the first operation. More than 25% of cases had axillary surgery at the first operation in South East (West) (26%), North West (26%), East Midlands (29%), North East, Yorkshire & Humber (30%), Scotland (31%) and Wales (34%). It would be interesting to know the reasons for undertaking axillary surgery at the first operation as it would appear that these women may have undergone an unnecessary procedure.

97 cancers (6%) had no axillary surgery at the first operation but underwent a repeat operation to obtain nodes. The majority of these (76 cases) had conservation surgery at the first operation then a repeat operation consisting of mastectomy with an axillary procedure.

| <b>TABLE 6.5A : AXILLARY SURGERY FOR B5A (NON-INVASIVE) CORE BIOPSIES PROVED TO BE NON-INVASIVE OR MICRO-INVASIVE AFTER SURGERY (TABLE 76)</b> |                                                |           |                            |           |                                               |          |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------|----------------------------|-----------|-----------------------------------------------|----------|
| <b>Region</b>                                                                                                                                  | <b>Axillary surgery at the first operation</b> |           | <b>No axillary surgery</b> |           | <b>Axillary surgery at a repeat operation</b> |          |
|                                                                                                                                                | <b>No.</b>                                     | <b>%</b>  | <b>No.</b>                 | <b>%</b>  | <b>No.</b>                                    | <b>%</b> |
| <i>N East, Yorks &amp; Humber</i>                                                                                                              | 63/213                                         | 30        | 133/213                    | 62        | 17/213                                        | 8        |
| <i>East Midlands</i>                                                                                                                           | 48/168                                         | 29        | 113/168                    | 67        | 7/168                                         | 4        |
| <i>East of England</i>                                                                                                                         | 30/181                                         | 17        | 145/181                    | 80        | 6/181                                         | 3        |
| <i>London</i>                                                                                                                                  | 26/177                                         | 15        | 142/177                    | 80        | 5/177                                         | 3        |
| <i>South East (East)</i>                                                                                                                       | 35/139                                         | 25        | 97/139                     | 70        | 7/139                                         | 5        |
| <i>South East (West)</i>                                                                                                                       | 28/107                                         | 26        | 69/107                     | 64        | 10/107                                        | 9        |
| <i>South West</i>                                                                                                                              | 32/146                                         | 22        | 102/146                    | 70        | 12/146                                        | 8        |
| <i>West Midlands</i>                                                                                                                           | 31/157                                         | 20        | 118/157                    | 75        | 7/157                                         | 4        |
| <i>North West</i>                                                                                                                              | 42/164                                         | 26        | 112/164                    | 68        | 10/164                                        | 6        |
| <i>Wales</i>                                                                                                                                   | 31/91                                          | 34        | 57/91                      | 63        | 3/91                                          | 3        |
| <i>Northern Ireland</i>                                                                                                                        | 3/28                                           | 11        | 23/28                      | 82        | 2/28                                          | 7        |
| <i>Scotland</i>                                                                                                                                | 36/116                                         | 31        | 69/116                     | 59        | 11/116                                        | 9        |
| <b>United Kingdom</b>                                                                                                                          | <b>405/1687</b>                                | <b>24</b> | <b>1180/1687</b>           | <b>70</b> | <b>97/1687</b>                                | <b>6</b> |

## 6.6 Summary of Repeat Operation Rates

| <b>TABLE 6.6A : REPEAT THERAPEUTIC OPERATION RATES</b> |                          |           |                                     |           |                          |           |                                               |           |
|--------------------------------------------------------|--------------------------|-----------|-------------------------------------|-----------|--------------------------|-----------|-----------------------------------------------|-----------|
| <b>Region</b>                                          | <b>Invasive cancers</b>  |           |                                     |           |                          |           | <b>Non-invasive or micro-invasive cancers</b> |           |
|                                                        | <b>B5b</b><br>(Table 69) |           | <b>C5 only, no B5</b><br>(Table 71) |           | <b>B5a</b><br>(Table 73) |           | <b>B5a</b><br>(Table 75)                      |           |
|                                                        | <b>No.</b>               | <b>%</b>  | <b>No.</b>                          | <b>%</b>  | <b>No.</b>               | <b>%</b>  | <b>No.</b>                                    | <b>%</b>  |
| <i>N East, Yorks &amp; Humber</i>                      | 104/802                  | 12        | 41/193                              | 21        | 32/69                    | 46        | 51/213                                        | 24        |
| <i>East Midlands</i>                                   | 74/557                   | 11        | 12/94                               | 13        | 17/32                    | 53        | 34/168                                        | 20        |
| <i>East of England</i>                                 | 48/656                   | 10        | 14/133                              | 11        | 14/45                    | 31        | 26/181                                        | 14        |
| <i>London</i>                                          | 80/666                   | 9         | 10/49                               | 20        | 27/67                    | 40        | 23/177                                        | 13        |
| <i>South East (East)</i>                               | 71/485                   | 14        | 21/96                               | 22        | 18/37                    | 49        | 36/139                                        | 26        |
| <i>South East (West)</i>                               | 47/418                   | 11        | 2/91                                | 2         | 13/36                    | 36        | 22/107                                        | 21        |
| <i>South West</i>                                      | 123/690                  | 17        | 12/46                               | 26        | 25/67                    | 37        | 43/146                                        | 29        |
| <i>West Midlands</i>                                   | 65/651                   | 11        | 9/72                                | 13        | 27/50                    | 54        | 32/157                                        | 20        |
| <i>North West</i>                                      | 76/758                   | 12        | 19/214                              | 9         | 15/58                    | 26        | 36/164                                        | 22        |
| <i>Wales</i>                                           | 53/451                   | 11        | 1/8                                 | 13        | 17/45                    | 38        | 12/91                                         | 13        |
| <i>Northern Ireland</i>                                | 11/71                    | 12        | 1/62                                | 2         | 3/17                     | 18        | 8/28                                          | 29        |
| <i>Scotland</i>                                        | 67/538                   | 8         | 7/68                                | 10        | 16/25                    | 64        | 25/116                                        | 22        |
| <b>United Kingdom</b>                                  | <b>819/6743</b>          | <b>12</b> | <b>149/1126</b>                     | <b>13</b> | <b>224/548</b>           | <b>41</b> | <b>348/1687</b>                               | <b>21</b> |

Table 6.6A summarises the regional variation in repeat operation rates for the types of cancer discussed in the previous sections. The data show that invasive cancers with B5b (Invasive) core biopsy had fewest repeat operations (12%), followed by invasive cancers diagnosed by C5 cytology only (13%). As expected, invasive cancers with a B5a (Non-invasive) core biopsy had the highest repeat operation rate (41%). One reason for repeat operations for invasive cancers is to ascertain the nodal status where axillary surgery has not been performed at the first operation. Table 6.6B shows that, as expected, this was rare when the core biopsy predicted invasive disease (54 cases, 1%). Most cases diagnosed on the basis of C5 cytology only, had axillary surgery at the first operation, with only 32 cases (3%) undergoing a repeat operation to obtain nodes. However for B5a (Non-invasive) cases where the invasive disease was not predicted by the core biopsy, 124 cancers (23%) had an axillary procedure at a repeat operation.

| <b>TABLE 6.6B : PROPORTION OF INVASIVE CANCERS WITH AXILLARY SURGERY AT A REPEAT OPERATION, NOT THE FIRST OPERATION</b> |                          |          |                                     |          |                          |           |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------|----------|-------------------------------------|----------|--------------------------|-----------|
| <b>Region</b>                                                                                                           | <b>B5b</b><br>(Table 69) |          | <b>C5 only, no B5</b><br>(Table 71) |          | <b>B5a</b><br>(Table 73) |           |
|                                                                                                                         | <b>No.</b>               | <b>%</b> | <b>No.</b>                          | <b>%</b> | <b>No.</b>               | <b>%</b>  |
| <i>N East, Yorks &amp; Humber</i>                                                                                       | 4/802                    | 0        | 2/193                               | 1        | 20/69                    | 29        |
| <i>East Midlands</i>                                                                                                    | 0/557                    | 0        | 1/94                                | 1        | 6/32                     | 19        |
| <i>East of England</i>                                                                                                  | 2/656                    | 0        | 7/133                               | 5        | 11/45                    | 24        |
| <i>London</i>                                                                                                           | 10/666                   | 2        | 8/49                                | 16       | 13/67                    | 19        |
| <i>South East (East)</i>                                                                                                | 0/485                    | 0        | 2/96                                | 2        | 8/37                     | 22        |
| <i>South East (West)</i>                                                                                                | 4/418                    | 1        | 0/91                                | 0        | 8/36                     | 22        |
| <i>South West</i>                                                                                                       | 2/690                    | 0        | 3/46                                | 7        | 13/67                    | 19        |
| <i>West Midlands</i>                                                                                                    | 3/651                    | 0        | 2/72                                | 3        | 18/50                    | 36        |
| <i>North West</i>                                                                                                       | 14/758                   | 2        | 2/214                               | 1        | 10/58                    | 17        |
| <i>Wales</i>                                                                                                            | 3/451                    | 1        | 1/8                                 | 13       | 8/45                     | 18        |
| <i>Northern Ireland</i>                                                                                                 | 1/71                     | 1        | 0/62                                | 0        | 1/17                     | 6         |
| <i>Scotland</i>                                                                                                         | 11/538                   | 2        | 4/68                                | 6        | 8/25                     | 32        |
| <b>United Kingdom</b>                                                                                                   | <b>54/6743</b>           | <b>1</b> | <b>32/1126</b>                      | <b>3</b> | <b>124/548</b>           | <b>23</b> |

Table 6.6C shows the proportion of invasive cancers with no axillary surgery. Overall, 454 invasive cancers appear not to have had surgery to the axilla and may therefore have had an incomplete diagnostic work-up. This scenario occurred most frequently for cases with a B5a (Non-invasive) core biopsy. Overall, 14% of these cancers had no axillary procedure recorded, varying from 0 cases in Scotland to 21 cases (31%) in London and 11 cases (24%) in East of England.

Overall, 5% of invasive cancers with a B5b (Invasive) core biopsy and 5% of invasive cancers with C5 cytology only had no axillary procedure. However this proportion was higher for B5b (Invasive) cases in London (31%) and for C5 cytology only cases in London (16%) and East of England (23%). This may be due to data collection problems, since the nodal ascertainment rates for East of England and London were 91% and 88% respectively (Table 48). This could be a data collection problem. However, if the data do correctly reflect clinical practice, these cases should be reviewed by the Regional QA Reference Centres and the Regional QA Surgeons as they may have had insufficient diagnostic work-up.

| <b>TABLE 6.6C : PROPORTION OF INVASIVE CANCERS WITH NO AXILLARY OPERATION</b> |                          |          |                                     |          |                          |           |
|-------------------------------------------------------------------------------|--------------------------|----------|-------------------------------------|----------|--------------------------|-----------|
| <b>Region</b>                                                                 | <b>B5b</b><br>(Table 69) |          | <b>C5 only, no B5</b><br>(Table 71) |          | <b>B5a</b><br>(Table 73) |           |
|                                                                               | <b>No.</b>               | <b>%</b> | <b>No.</b>                          | <b>%</b> | <b>No.</b>               | <b>%</b>  |
| <i>N East, Yorks &amp; Humber</i>                                             | 5/802                    | 1        | 4/193                               | 2        | 4/69                     | 6         |
| <i>East Midlands</i>                                                          | 5/557                    | 1        | 3/94                                | 3        | 2/32                     | 6         |
| <i>East of England</i>                                                        | 27/656                   | 4        | 31/133                              | 23       | 11/45                    | 24        |
| <i>London</i>                                                                 | 204/666                  | 31       | 8/49                                | 16       | 21/67                    | 31        |
| <i>South East (East)</i>                                                      | 10/485                   | 2        | 3/96                                | 3        | 8/37                     | 22        |
| <i>South East (West)</i>                                                      | 5/418                    | 1        | 2/91                                | 2        | 4/36                     | 11        |
| <i>South West</i>                                                             | 21/690                   | 3        | 2/46                                | 4        | 8/67                     | 12        |
| <i>West Midlands</i>                                                          | 4/651                    | 1        | 0/72                                | 0        | 3/50                     | 6         |
| <i>North West</i>                                                             | 27/758                   | 4        | 3/214                               | 1        | 12/58                    | 21        |
| <i>Wales</i>                                                                  | 0/451                    | 0        | 0/8                                 | 0        | 2/45                     | 4         |
| <i>Northern Ireland</i>                                                       | 2/71                     | 3        | 5/62                                | 8        | 3/17                     | 18        |
| <i>Scotland</i>                                                               | 5/538                    | 1        | 0/68                                | 0        | 0/25                     | 0         |
| <b>United Kingdom</b>                                                         | <b>315/6743</b>          | <b>5</b> | <b>61/1126</b>                      | <b>5</b> | <b>78/548</b>            | <b>14</b> |

**COMMENT:**

- In the UK as a whole, 15% of cancers with a proven pre-operative diagnosis by C5 cytology and/or B5 core biopsy underwent more than one therapeutic operation.
- 14% of invasive cancers and 16% of non-invasive cancers underwent more than one therapeutic operation.
- Invasive cancers with B5b (Invasive) core biopsy had the fewest repeat operations (12%), followed by invasive cancers diagnosed by C5 cytology only (13%). Invasive cancers with a B5a (Non-invasive) core biopsy had the highest repeat operation rate (41%).
- 62% of invasive cancers with a B5b (invasive) core biopsy underwent a single therapeutic operation consisting of conservation surgery with an axillary procedure. A further 5% of cases had conservation surgery with an axillary procedure followed by conservation surgery, presumably to clear involved or close margins.
- Only 1% of invasive cancers with a B5b (Invasive) core biopsy had a repeat operation to obtain axillary lymph nodes, compared to 3% diagnosed by C5 cytology only and 23% with a B5a (Non-invasive) core biopsy.
- 5% of invasive cancers with a B5b (Invasive) core biopsy or a C5 cytology had no axillary procedure recorded. For invasive cancers with a B5a (Non-invasive) core biopsy, this was 14%. This could be a data collection problem. However, if the data do correctly reflect clinical practice, these cases should be audited by Regional QA Reference Centres and Regional QA Surgeons as they may have had insufficient diagnostic work-up.
- 64% of invasive cancers diagnosed by C5 cytology only underwent a single therapeutic operation consisting of conservation surgery with an axillary procedure.
- A further 16% of these cancers underwent a single therapeutic operation consisting of a mastectomy and an axillary procedure. Presumably in these cases, the clinical and radiological signs were strongly supportive of the presence of invasive disease.
- 23% of invasive cancers with a B5a (Non-invasive) core biopsy underwent a single operation consisting of conservation surgery with an axillary procedure. Presumably in these cases, contrary to the core biopsy result, the clinical and radiological signs were strongly supportive of the presence of an invasive cancer.
- 24% of non-invasive or micro-invasive cancers with a B5a (Non-invasive) core biopsy underwent axillary surgery at the first therapeutic operation. It would be interesting to know the reasons for undertaking axillary surgery at the first operation as it would appear that these women may have undergone an unnecessary axillary procedure.

## 7. ADJUVANT THERAPY

Detailed tables giving full audit results are provided in Appendix 7 starting on p127

Surgeons were asked to supply radiotherapy, chemotherapy and hormonal therapy start dates for cancers detected through screening between 1<sup>st</sup> April 2001 and 31<sup>st</sup> March 2002, the period covered by the previous screening audit. Oestrogen receptor (ER), progesterone receptor (PgR) and Cerb-B2/HER-2 status were also requested. The cut off point for adjuvant treatment was 31<sup>st</sup> March 2003, allowing a minimum of 12 months follow up for each case. Some of these analyses should be treated with caution because it is probably easier to verify that a woman did not receive a given therapy than to provide a complete start date.

### 7.1 Data Completeness for the Adjuvant Therapy Audit

The 2001/02 ABS at BASO audit reported tumour characteristics and primary treatment data for 10,191 screen detected breast cancers. Details of a further 85 cancers which were not submitted to the main screening audit in 2001/02 have been registered since 2001/02, giving a total of 10,276 cancers eligible for this audit. Of these, 1,463 had no adjuvant data supplied and 137 had some adjuvant data supplied but were excluded from the audit due to incomplete surgery data or adjuvant treatment prior to the screening assessment date. Following these exclusions, 8,676 cases (84%) were included in the adjuvant therapy audit (Table 77).

Table 78 shows the regional variation in data completeness for radiotherapy, chemotherapy and hormonal therapy data (79%, 80%, 77% respectively in the UK as a whole). Overall, radiotherapy, chemotherapy and hormonal therapy data were complete for 7,372 cases (72%). Radiotherapy and chemotherapy alone were complete for 7,835 cases (76%). Figure 45 shows the regional variation in overall data completeness as well as the data completeness for radiotherapy and chemotherapy alone. The completeness of radiotherapy, chemotherapy and hormonal therapy data varied from 54% in East of England to 97% in Wales and 100% in East Midlands. This shows that regions with established systems for data collection find it easier to collect these data than regions that rely on surgeons reviewing case notes to complete the ABS at BASO adjuvant therapy audit.

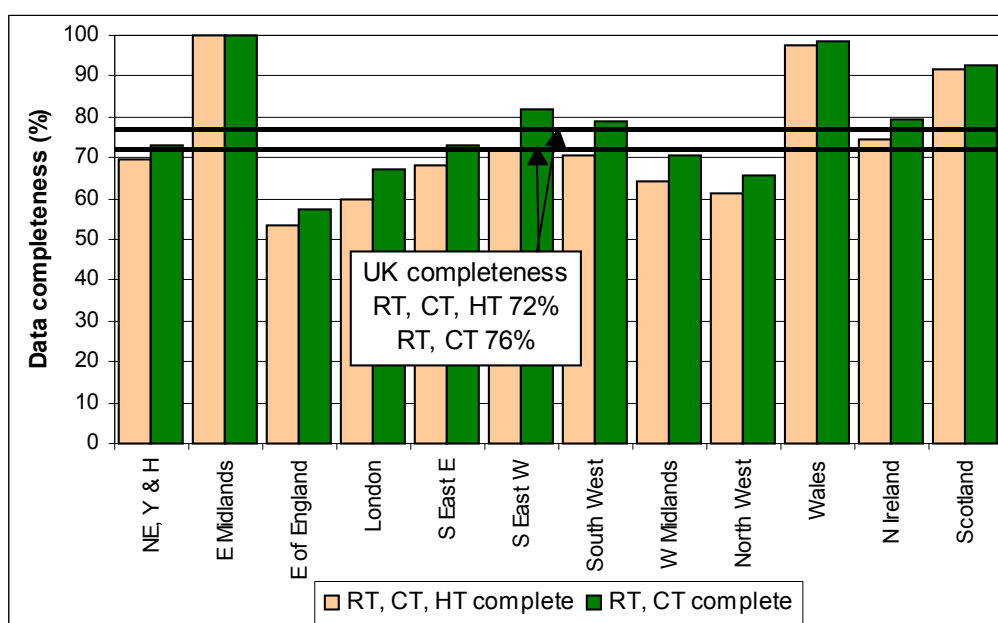
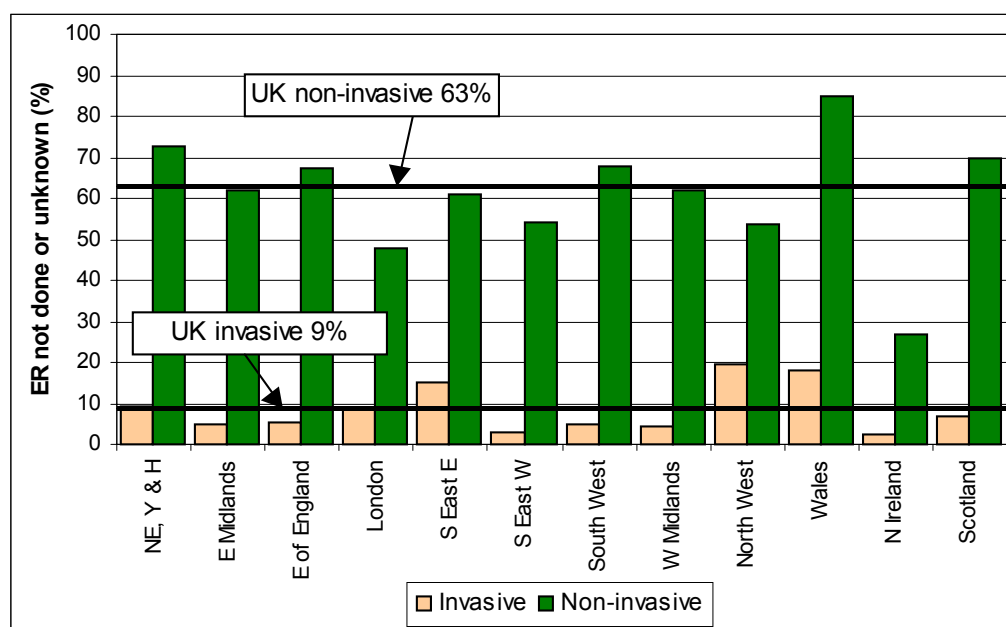


Figure 45 (Table 79) : Variation in the proportion of cases with complete RT, CT and HT data and those with complete RT and CT data, expressed as a proportion of all eligible cases

Tables 80 and 81 show that, of the 7,835 cases with complete radiotherapy and chemotherapy data, 4,963 (63%) had started radiotherapy and 1,330 (17%) had started chemotherapy before the audit cut off date. Table 82 shows that of the 7,958 cases with hormonal therapy data supplied, 5,726 (72%) received hormonal therapy. Age does not seem to be a factor in the provision of adjuvant therapy to screen detected cancers (Tables 83, 84). The median age of women in the audit was 58, which was also the median age of women receiving radiotherapy and of women not receiving radiotherapy. The median age of women receiving chemotherapy was 56, compared to 58 for women who did not receive chemotherapy. The median age of women receiving hormonal therapy was 58, compared to 57 for women who did not receive hormonal therapy. The regional variation in adjuvant therapy provision is discussed later with reference to tumour characteristics.

Of the 8,676 cancers included in the audit, 58 (1%) had no surgery, 6,720 (77%) had 1 surgical operation (diagnostic or therapeutic) and 1,898 (22%) had more than 1 operation (Table 85). The first operation was diagnostic for 947 (11%) of the 8,618 cases with surgery. For 7,600 (88%) cases the first operation was therapeutic following a malignant core biopsy or cytology result (Table 86). The remaining 71 cases were not submitted to the main screening audit in 2001/02 so pre-operative history data were unavailable. Of the 4,963 cancers given radiotherapy, 6 had no surgery, 4,030 (81%) had 1 operation and 927 (19%) had more than 1 operation (Table 87). Of the 1,330 cancers given chemotherapy, 10 (1%) had no surgery, 1,090 (82%) had 1 operation and 230 (17%) had more than 1 operation (Table 88).

Data completeness for ER, PgR and Cerb-B2/HER-2 status may depend on the invasive status of the cancer. 6,757 (78%) of the 8,676 included cases were invasive and 1,728 (20%) were non-invasive. A further 98 cancers were micro-invasive and for 93 (1%) cancers invasive status data were unavailable (Table 89). Of the 8,676 included cases, 6,021 (69%) were ER positive and 863 (10%) ER negative, giving a ratio of ER positive to ER negative cases of 7:1. For the first time, the code “Not Done” was introduced to indicate that ER status was unknown because the test was not performed. This code was not used by all regions taking part in the audit. Only 350 cancers (4%) had ER status not done, and ER status was unknown for 1,442 (17%).

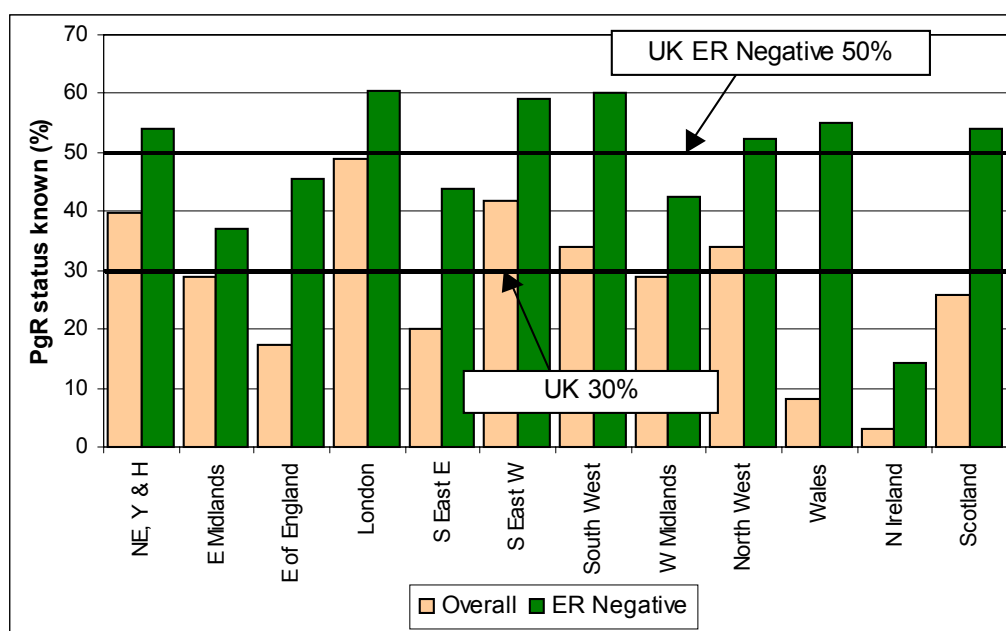


**Figure 46 (Table 91) : The variation in the proportion of invasive and non-invasive cancers with unknown ER status or ER status not done**

Of the 1,792 cases with ER status unknown or not done, 634 were invasive, 1,085 were non-invasive, 38 were micro-invasive and 35 had invasive status unknown. Thus, 9% of the 6,757 invasive cancers had unknown or not done ER status, compared to 63% of non-invasive cancers.

Regional variation is shown in Figure 46. The proportion of invasive cancers with ER status unknown or not done was 15-19% in South East (East), Wales and North West. Given the importance of ER status in determining adjuvant therapy, Regional QA Reference Centres and Regional QA Surgeons should ascertain the reasons why ER status was not available.

PgR status data were available for only 30% of cases. 1,893 cases were PgR positive and 701 PgR negative giving a ratio of PgR positive to PgR negative cases of 2.7:1. PgR status was known for 433 (50%) of the 863 ER negative cancers, suggesting that in some regions PgR status was not requested routinely but only when ER status was negative (Figure 47). In Wales in particular, PgR status was known for 8% of all cases, but for 55% of ER negative cases. For ER negative cases with known PgR status, 46 were PgR positive and 387 were PgR negative, giving a ratio of PgR positive to PgR negative for ER negative cases of 1:8 in the UK as a whole.



**Figure 47 (Table 92,93) : The variation in the proportion of all cancers with PgR status known compared to the proportion of ER negative cancers with PgR status known**

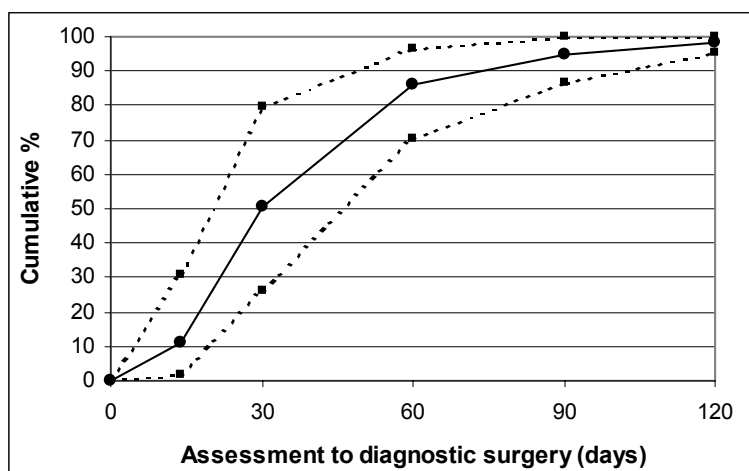
Overall, Cerb-B2/HER-2 status data were available for only 11% of the cases included in the audit, varying from 2% in Wales and East Midlands to 34% in South West (Table 94). Regional QA Reference Centres and Regional QA Surgeons should ascertain the reasons why Cerb-B2/HER-2 status was not available, especially in regions where the data would have been expected to be available from clinical trial databases.

#### COMMENT:

- The proportion of cases with radiotherapy, chemotherapy or hormonal therapy data supplied varied from 54% in East of England to 97% in Wales and 100% in East Midlands. This shows that regions with established systems for data collection find it easier to collect these data than regions that rely on surgeons reviewing case notes to complete the ABS at BASO adjuvant audit.
- For 4% of cases in the audit, ER status was not done. ER status was unknown for 17% of cases. 9% of invasive cancers had unknown or not done ER status, compared to 63% of non-invasive cancers. Given the importance of ER status in determining adjuvant therapy, Regional QA Reference Centres and Regional QA Surgeons should ascertain the reasons why ER status was not available.
- For the 79% of cases with known ER status, the ratio of ER positive to ER negative cases was 7:1.
- PgR status data were available for only 30% of all cases but 50% of ER negative cancers, suggesting that in some regions PgR status was not requested routinely but only when ER status was negative. Cerb-B2/HER-2 status data were available for only 11% of cases included in the audit.

## 7.2 Time Between Assessment, Surgery, Radiotherapy, Chemotherapy and Hormonal Therapy

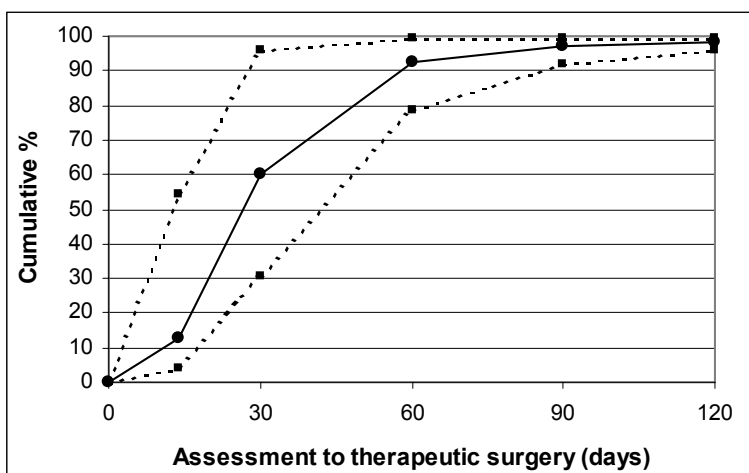
Tables 95 to 102 show the regional variation in the cumulative percentage of cases having various therapies within 14, 30, 60, 90 and 120 days. These time periods were chosen for illustrative purposes and do not correspond to any published standards, although the 30 day time period is approximately equivalent to the new waiting times standard from decision to treat to first treatment. The cumulative percentage curve for the UK as a whole is drawn as a solid line and dashed lines represent the regions with the maximum and minimum cumulative percentage at each point. This means that the cumulative percentage curves for all regions can be drawn between the 2 dashed lines.



**Figure 48 (Table 95) : The cumulative % of cases with diagnostic surgery up to 120 days after assessment**

Figure 48 shows that 51% of cases undergoing diagnostic surgery had this surgery within 30 days of assessment. This varied from 26% in South East (East) to 78% in South East (West) and 80% in Wales. 86% of women received diagnostic surgery within 60 days of assessment, varying from 70% in South East (East) to 96% in Wales and Northern Ireland.

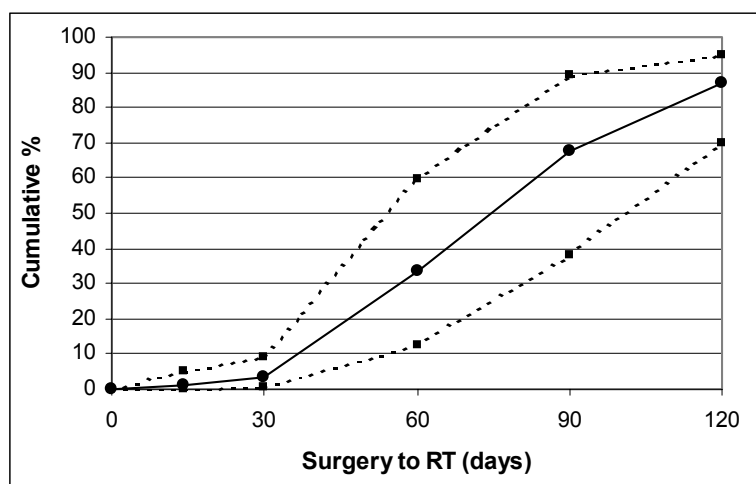
Figure 49 shows that 60% of cases with a pre-operative diagnosis underwent therapeutic surgery within 30 days of assessment, varying from 30% in South East (East) to 96% in Northern Ireland. The median number of days between assessment and therapeutic surgery in the UK as a whole was 27 days.



**Figure 49 (Table 96) : The cumulative % of cases a pre-operative diagnosis that had therapeutic surgery up to 120 days after assessment**

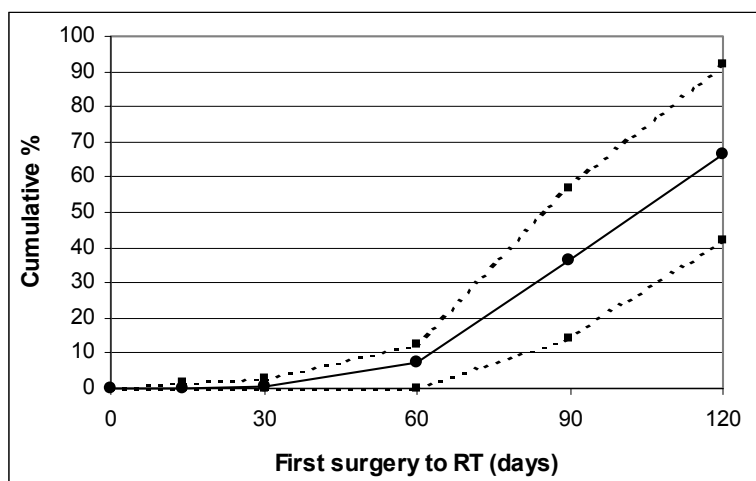
Adjuvant therapy should commence promptly after first surgery, but is delayed if there is a second operation to obtain axillary nodes or clear margins. Table 97 shows that 50% of the 1,896 women undergoing more than 1 diagnostic or therapeutic operation had all of their operations in the same 30 day period. The median number of days between first and final surgery varied between 15 days in Northern Ireland and 35 days in London and South East (East).

Figure 50 shows the variation in the time taken from surgery to radiotherapy for cases with 1 operation. Cases with chemotherapy between surgery and radiotherapy were excluded. In the UK as a whole, only 33% of cases received radiotherapy within 60 days of first surgery, 67% within 90 days and 87% within 120 days. The proportion receiving radiotherapy within 60 days was only 13-19% in South East (East), London and South East (West). In Scotland 59% received radiotherapy within 60 days.



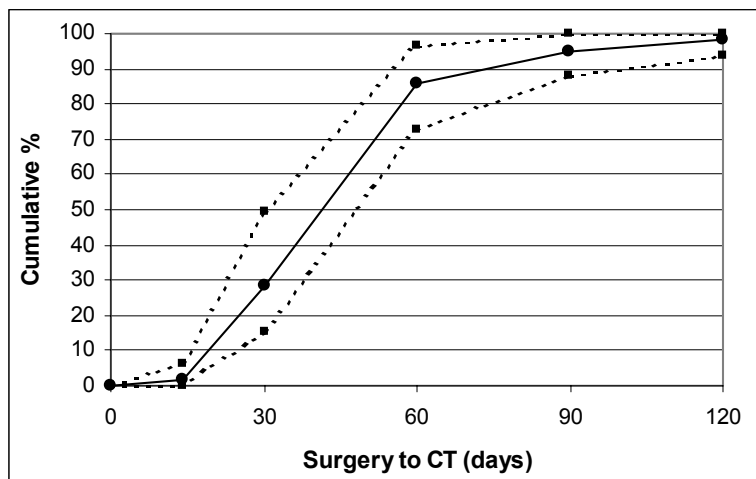
**Figure 50 (Table 98) : The cumulative % of women with 1 operation receiving radiotherapy up to 120 days after surgery**

Figure 51 shows the variation in the time taken from first surgery to radiotherapy for cases with more than 1 operation. Again, cases with chemotherapy between surgery and radiotherapy were excluded. Due to further surgery delaying the start of radiotherapy, only 7% of cases received radiotherapy within 60 days of their first surgery, 36% within 90 days and 67% within 120 days. In North West, 13% received radiotherapy within 60 days. The proportion of cancers receiving radiotherapy within 90 days of their first surgery varied between 14% in South East (East) and 57% in Scotland.



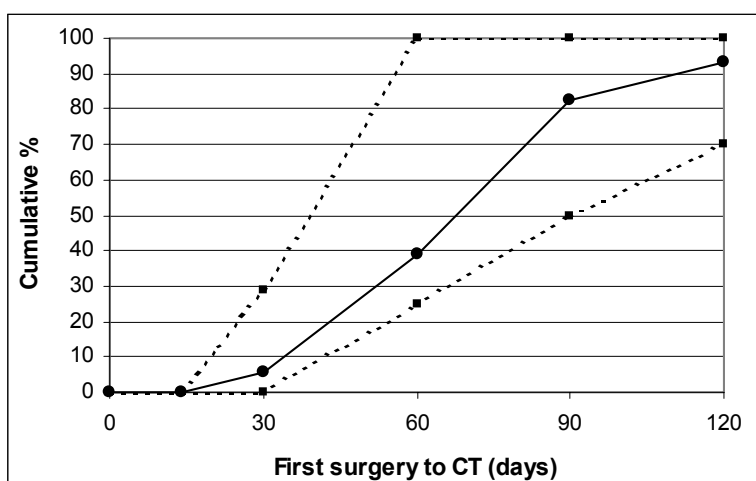
**Figure 51 (Table 99) : The cumulative % of women with more than 1 operation receiving radiotherapy up to 120 days after first surgery**

Figure 52 shows the variation in the time taken from surgery to chemotherapy for cases with 1 operation. Cases with radiotherapy between surgery and chemotherapy were excluded. In the UK as a whole, 86% of cases received chemotherapy within 60 days of first surgery, 95% within 90 days and 98% within 120 days. The proportion receiving chemotherapy within 60 days varied from 73% in London to 96% in Northern Ireland.



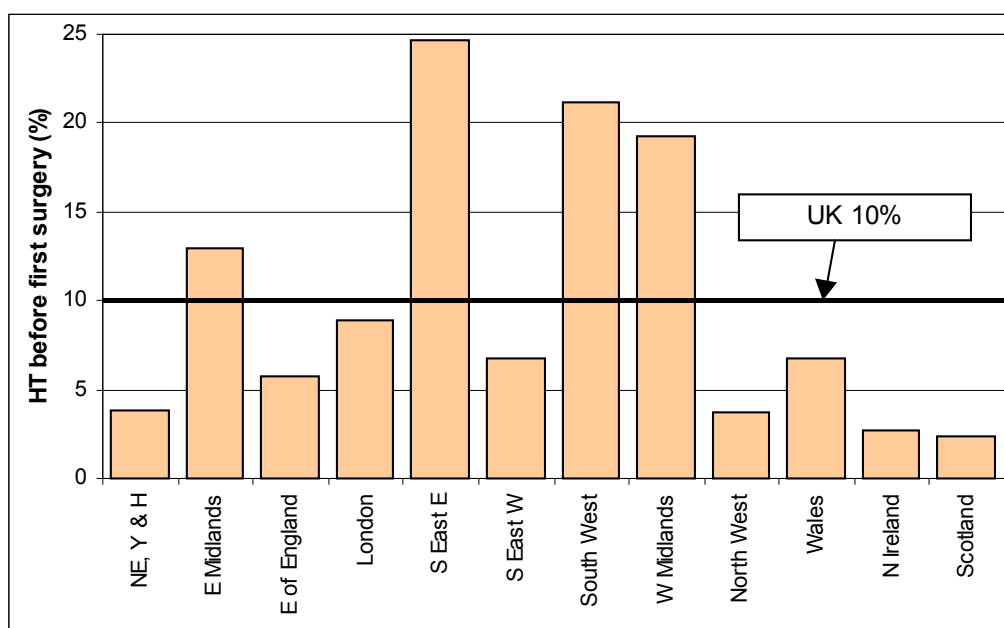
**Figure 52 (Table 100) : The cumulative % of women with 1 operation receiving chemotherapy up to 120 days after surgery**

Figure 53 shows the variation in the time taken from first surgery to chemotherapy for cases with more than 1 operation. Again, cases with radiotherapy between surgery and chemotherapy were excluded. Due to further surgery delaying the start of chemotherapy, only 39% of cases received chemotherapy within 60 days of first surgery, 82% within 90 days and 93% within 120 days. In London only 50% had chemotherapy within 90 days.



**Figure 53 (Table 101) : The cumulative % of women with more than 1 operation receiving chemotherapy up to 120 days after first surgery**

Figure 54 shows that, of the 5,726 cases receiving hormonal therapy, 562 (10%) started this therapy before surgery. The practice of starting women on hormonal therapy before surgery was most prevalent in South East (East) (25%), South West (21%) and West Midlands (19%). Recently, this practice has been questioned because of the potential thromboembolic effects of tamoxifen. In addition, if hormone therapy is started prior to surgery, it is possible that the ER status was not determined before the treatment was initiated and that women were therefore given unnecessary hormone therapy.



**Figure 54 (Table 102) : The variation in the proportion of women starting hormonal therapy before first surgery**

The regional variation in the median number of days between therapies examined in Figures 48-53 is summarised in Table 7.2A. The median number of days between surgery and radiotherapy for cases with 1 operation was 73 days, varying from 56 days in Scotland to 104 days in South East (West). The median number of days between first surgery and radiotherapy for cases with more than 1 operation was 103 days, varying from 87 days in Scotland and 88 days in South West to 131 days in North West. The median number of days between surgery and chemotherapy for cases with 1 operation was 38 days, varying from 31-33 days in East of England and South East (West) to 42 days in North East, Yorkshire & Humber and 43 days in Wales and South West. The median number of days between first surgery and chemotherapy for cases with more than 1 operation was 66 days, varying from 35 days in Northern Ireland and 90 days in London. It is clear from Table 7.2A that in 2001/02, women in London and South East (East) were experiencing the longest waiting times for treatments. Wales had particularly short waiting times for surgery, while Scotland and East Midlands had relatively short waiting times for radiotherapy.

| <b>TABLE 7.2 A : SUMMARY OF MEDIAN NUMBER OF DAYS BETWEEN VARIOUS THERAPIES</b> |                                     |                                       |                                     |                           |                                                |                                                    |                                                 |                                                     |
|---------------------------------------------------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|---------------------------|------------------------------------------------|----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------|
| <b>Region</b>                                                                   | <b>Assessment to</b>                |                                       | <b>First Surgery to</b>             |                           | <b>Final Surgery to</b>                        |                                                    |                                                 |                                                     |
|                                                                                 | <b>Diag. surgery<br/>(Table 95)</b> | <b>Therap. Surgery<br/>(Table 96)</b> | <b>Final surgery<br/>(Table 97)</b> | <b>HT<br/>(Table 102)</b> | <b>RT<br/>(cases with 1 op)<br/>(Table 98)</b> | <b>RT<br/>(cases with &gt;1 op)<br/>(Table 99)</b> | <b>CT<br/>(cases with 1 op)<br/>(Table 100)</b> | <b>CT<br/>(cases with &gt;1 op)<br/>(Table 101)</b> |
| <i>N East, Yorks &amp; Humber</i>                                               | 30                                  | 27                                    | 28                                  | 21                        | 78                                             | 106                                                | 42                                              | 63                                                  |
| <i>East Midlands</i>                                                            | 32                                  | 28                                    | 34                                  | 16                        | 62                                             | 90                                                 | 38                                              | 78                                                  |
| <i>East of England</i>                                                          | 28                                  | 27                                    | 28                                  | 22                        | 90                                             | 114                                                | 31                                              | 63                                                  |
| <i>London</i>                                                                   | 35                                  | 30                                    | 35                                  | 31                        | 92                                             | 119                                                | 40                                              | 90                                                  |
| <i>South East (East)</i>                                                        | 43                                  | 40                                    | 35                                  | 20                        | 95                                             | 127                                                | 41                                              | 80                                                  |
| <i>South East (West)</i>                                                        | 22                                  | 25                                    | 29                                  | 21                        | 104                                            | 129                                                | 33                                              | 62                                                  |
| <i>South West</i>                                                               | 34                                  | 30                                    | 32                                  | 23                        | 67                                             | 88                                                 | 43                                              | 78                                                  |
| <i>West Midlands</i>                                                            | 33                                  | 22                                    | 28                                  | 15                        | 67                                             | 103                                                | 37                                              | 58                                                  |
| <i>North West</i>                                                               | 33                                  | 28                                    | 34                                  | 28                        | 76                                             | 131                                                | 40                                              | 61                                                  |
| <i>Wales</i>                                                                    | 22                                  | 23                                    | 24                                  | 20                        | 72                                             | 101                                                | 43                                              | 66                                                  |
| <i>Northern Ireland</i>                                                         | 28                                  | 14                                    | 15                                  | 29                        | 69                                             | 111                                                | 37                                              | 35                                                  |
| <i>Scotland</i>                                                                 | 29                                  | 26                                    | 31                                  | 22                        | 56                                             | 87                                                 | 35                                              | 64                                                  |
| <b>UK</b>                                                                       | <b>30</b>                           | <b>27</b>                             | <b>30</b>                           | <b>21</b>                 | <b>73</b>                                      | <b>103</b>                                         | <b>38</b>                                       | <b>66</b>                                           |

Shaded if 10% above the median for the UK as a whole

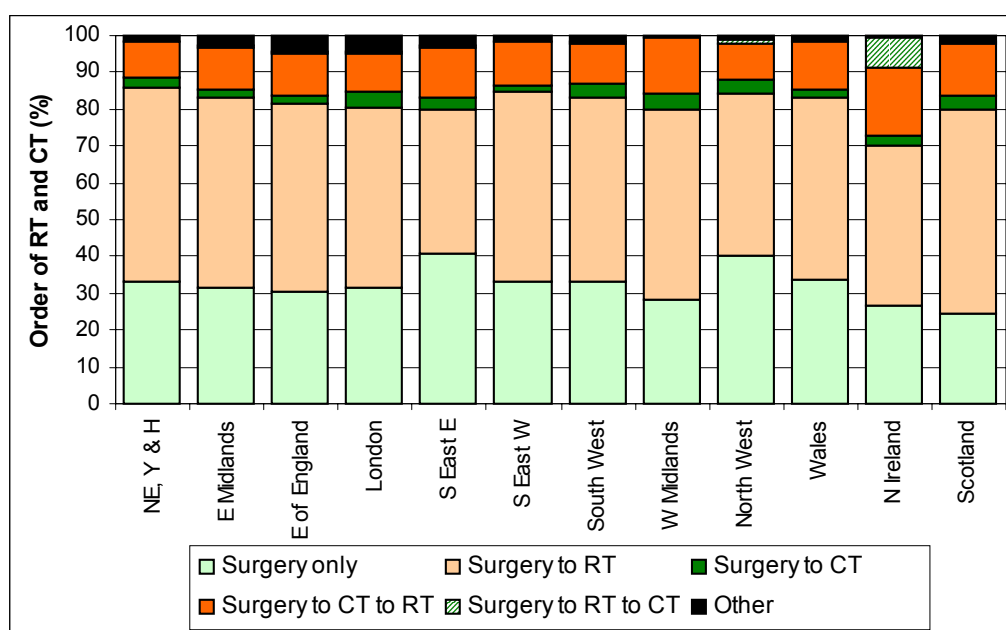
**COMMENT:**

- Only 51% of cases undergoing diagnostic surgery had this surgery within 30 days of assessment.
- Only 60% of cases with a pre-operative diagnosis underwent therapeutic surgery within 30 days of assessment.
- Only 33% of cases with 1 operation received radiotherapy within 60 days of this surgery. For cases with more than 1 operation, only 7% of cases received radiotherapy within 60 days of first surgery.
- 86% of cases with 1 operation received chemotherapy within 60 days of this surgery. For cases with more than 1 operation, only 39% of cases received radiotherapy within 60 days of first surgery.
- In 2001/02, Women in London and South East (East) were experiencing the longest waiting times for treatments. Wales had particularly short waiting times for surgery, while Scotland and East Midlands had relatively short waiting times for radiotherapy.
- 10% of cases receiving hormonal therapy started this therapy before surgery. Given the potential thromboembolic effects of tamoxifen, Regional QA Reference Centres and Regional QA Surgeons should ascertain whether this practise has now ceased.

**7.3 Order of Surgery, Radiotherapy and Chemotherapy**

For those 7,835 cases with complete radiotherapy and chemotherapy data, the order of treatments was determined. For this analysis hormonal therapy was ignored. The term surgery refers to one or multiple operations provided that no adjuvant therapy was given between first and final surgery.

The majority of cases (3,889, 50%) underwent one or more operations followed by radiotherapy. In Scotland, 55% of cases followed this treatment pathway compared to 39% in South East (East). In the UK as a whole, 2,555 cases (33%) only received surgery, and 931 cases (12%) had surgery followed by chemotherapy and then radiotherapy. Other variations included surgery to chemotherapy (248 cases, 3%) and surgery to radiotherapy to chemotherapy (54 cases, 1%).



**Figure 55 (Table 103) : Variations in the order of surgery, radiotherapy and chemotherapy**

Figure 55 shows the regional variation in the order of surgery, radiotherapy and chemotherapy. Surgery to chemotherapy to radiotherapy (19%) and surgery to radiotherapy to chemotherapy (8%)

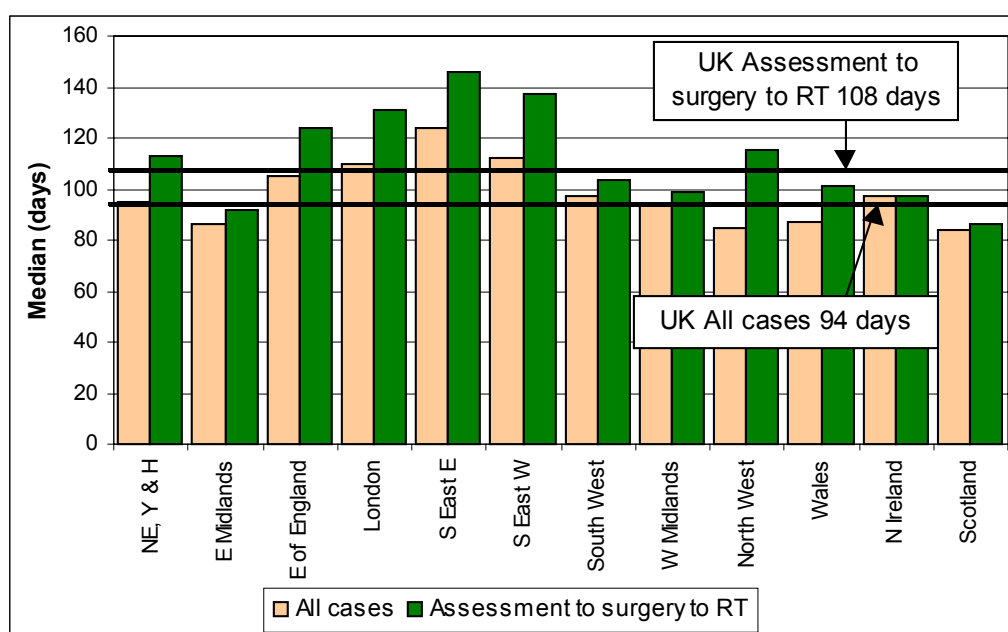
were most common in Northern Ireland where the highest proportion of cases received chemotherapy (30%, compared to 17% in the UK as a whole, see Table 81).

The number of days from the first assessment appointment to the start of the final therapy clearly depends on the number of therapies given, but overall the average (median) number of days from the first assessment appointment to the start of the final therapy was 94 days. The median time in days from assessment to final therapy was 39 days for women undergoing surgery alone, compared to 108 days for assessment to surgery followed by radiotherapy and 218 days for assessment to surgery followed by chemotherapy followed by radiotherapy. The median time from assessment to surgery to chemotherapy was 76 days (Table 104).

The median number of days from the first assessment appointment to the start of the final therapy was lowest in Northern Ireland for 3 of the treatment patterns (Surgery only 18 days, Surgery to CT 46 days, Surgery to CT to RT 167 days). East Midlands, West Midlands, Northern Ireland and Scotland had medians of less than 100 days for the most popular pattern of Surgery to RT. The methods practised to obtain these good results should be shared throughout the UK.

The regional variation in the median number of days from the first assessment appointment to the start of the final therapy, from 84 days in Scotland to 124 days in South East (East), is shown for all cases in Figure 56. This at first seems perverse since Scotland has the lowest proportion of cases in the audit undergoing surgery only (24%) and South East (East) has the highest (41%). However it is probably explained by the relatively long waiting times for surgery and radiotherapy in South East (East) compared with Scotland (Table 7.2A).

Figure 56 also shows the regional variation in the median number of days from assessment to surgery to radiotherapy (the most popular order of therapies). This varied from 86 days in Scotland to 146 days in South East (East).



**Figure 56 (Table 104) : Median number of days from assessment to final therapy**

**COMMENT:**

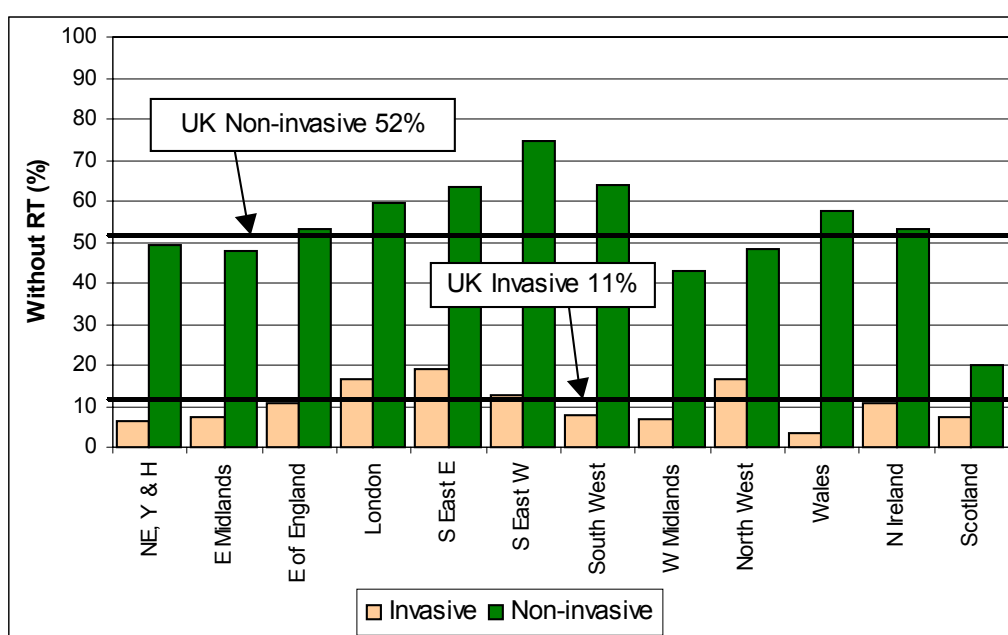
- The most popular treatment order for screen detected breast cancers was one or more operations followed by radiotherapy alone without chemotherapy, followed by 50% of cases.
- The median number of days from the first assessment appointment to the start of the final therapy was 94 days, varying from 84 days in Scotland to 124 days in South East (East).
- The median time in days from assessment to final therapy was 33 days for women undergoing surgery alone, compared to 108 days for assessment to surgery followed by radiotherapy and 218 days for assessment to surgery followed by chemotherapy followed by radiotherapy. The median time from assessment to surgery to chemotherapy was 76 days.
- The good practice in East Midlands and Scotland which in 2001/02 led to the shortest intervals between assessment and final therapy should be shared throughout the UK.

#### 7.4 Variations in Combinations of Treatment According to Tumour Characteristics

This section examines the combination of treatments given to tumours with various prognostic characteristics. It is clear that different screening units followed different surgical protocols. It is hoped that by presenting analyses for three specific propositions, an informative discussion to agree best practice can take place.

**Proposition 1 : Women treated with conservation surgery should normally receive radiotherapy**

Of the 8,169 cases with radiotherapy data available, 6,339 (78%) were invasive and 1,656 (28%) were non-invasive (Table 105). 4,431 (70%) of the invasive cancers were treated with conservation surgery (Table 106). Of these, 467 (11%) did not have radiotherapy. This varied from 4% in Wales to 17% in North West and London and 19% in South East (East). Of the 1,147 non-invasive cancers treated by conservation surgery (Table 109), 602 (52%) did not have radiotherapy (Table 110). This varied from 20% in Scotland to more than 60% in South East (East) (63%), South West (64%) and South East (West) (74%).



**Figure 57 (Tables 107,110) : The variation in the proportion of conservatively treated invasive cancers and non-invasive cancers that did not receive radiotherapy**

Figure 57 shows the variation in the proportion of conservatively treated invasive cancers and non-invasive cancers that did not receive radiotherapy. In the UK as a whole, the majority (65%) of conservatively treated invasive cancers not given radiotherapy were small (<15mm diameter) (Table 108). However, a total of 81 cancers were at least 20mm in diameter, of which 17 were in North West and 12 in London. Regional QA Reference Centres and Regional QA Surgeons should determine the reasons why these larger, invasive cancers did not receive radiotherapy.

In the UK as a whole, the majority (62%) of the 602 conservatively treated non-invasive cancers not given radiotherapy were other (low or intermediate) grade (Table 111). Overall, 58% of conservatively treated non-invasive cancers not given radiotherapy were small (<15mm diameter) (Table 112). However, in South East (West), 49% of cases not given radiotherapy were high grade, and 30% were at least 15mm in diameter. In Northern Ireland, 44% of cases not given radiotherapy were at least 15mm in diameter. Provided that the tumour margins were adequate, it may be acceptable that these conservatively treated cancers did not receive radiotherapy. However, Regional QA Reference Centres and Regional QA Surgeons should audit the treatment provided to large, high grade non-invasive cancers to ensure that these cancers did not receive less than optimal therapy.

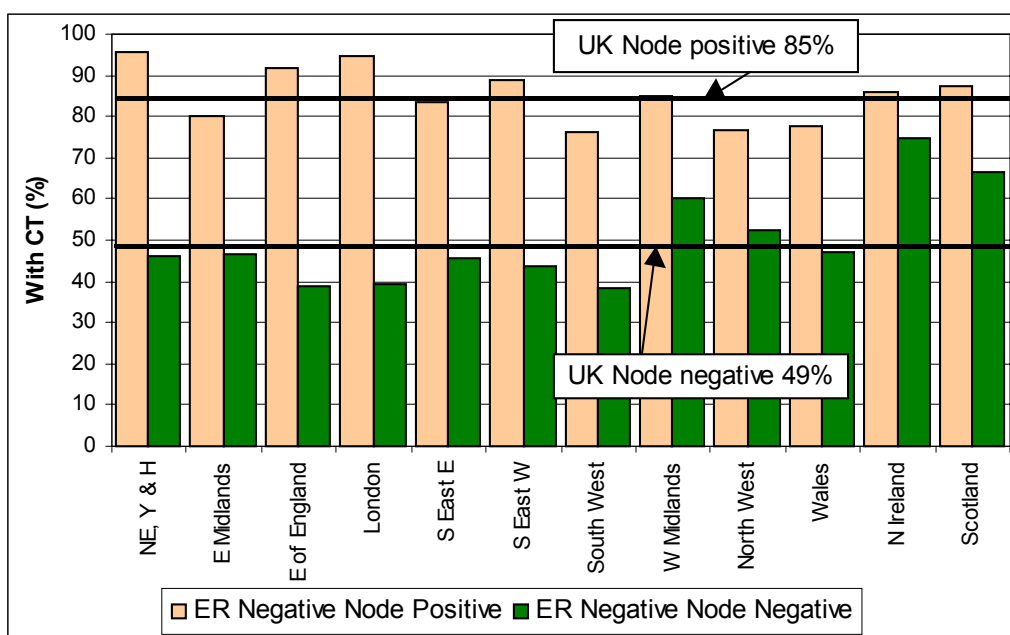
**Conclusion 1 :** 89% of women with invasive cancers treated with conservation surgery received radiotherapy, compared to only 48% of women with conservatively treated non-invasive cancer. The majority of conservatively treated cancers without radiotherapy were small (<15mm) tumours (65% invasive, 58% non-invasive). 62% of conservatively treated non-invasive cancers not given radiotherapy were other (low or medium) grade. Regional QA Reference Centres and Regional QA Surgeons should audit large or high grade non-invasive tumours that did not receive radiotherapy to ensure that these cancers did not have less than optimal treatment.

**Proposition 2 :** **Women with ER negative, node positive invasive cancers should normally receive chemotherapy**

Of the 8,245 cancers with known chemotherapy data, 189 (2%) were recorded as ER negative, node positive invasive cancers and 442 (5%) were recorded as ER negative, node negative invasive cancers (Table 113).

Of the 189 ER negative node positive invasive cancers, 161 (85%) received chemotherapy, varying from 76% in South West and 77% in North West to 94% in London and 92% in East of England. In the UK as a whole, only 28 cancers in this group did not receive chemotherapy. Of the 442 ER negative node negative invasive cancers, 218 (49%) received chemotherapy, varying from 38% in South West and 39% in East of England and London to 75% in Northern Ireland. This implies that in most regions nodal status was taken into account when deciding whether ER negative cancers received chemotherapy.

The regional variation is shown in Figure 58. Nodal status made the least difference in Northern Ireland (86% with chemotherapy for node positive cancers compared to 75% with chemotherapy for node negative cancers), Scotland (88% compared to 67%), West Midlands (85% compared with 60%) and North West (77% compared with 55%). The biggest difference was apparent in London (94% compared with 39%) and East of England (92% compared with 39%).



**Figure 58 (Tables 114, 115) : The variation in the proportion of ER negative node positive invasive cancers that did not receive chemotherapy compared with the proportion of ER negative node negative invasive cancers that did not receive chemotherapy**

183 (84%) of the 218 ER negative, node negative cancers given chemotherapy were Grade III (Table 116). Only 2 cancers were Grade I. 30 (14%) cancers were Grade II and 3 cancers had unknown grade. The lowest proportions of cancers receiving chemotherapy that were Grade III were in North West (64%) and London (64%). It would be interesting to examine the size of these Grade III cancers and the size and grade of the node positive cancers that did not receive chemotherapy to see if these factors also influenced the decision not to give chemotherapy.

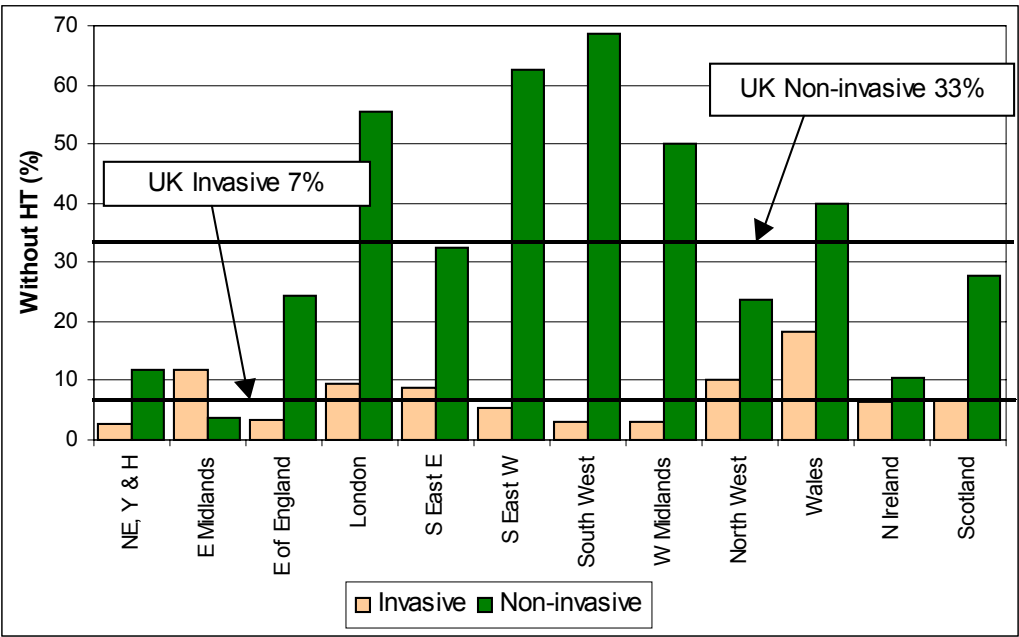
**Conclusion 2 :** 85% of women with ER negative, node positive invasive cancers received chemotherapy compared to 49% of ER negative, node negative invasive cancers . This indicates that nodal status was taken into account when deciding whether ER negative cancers would benefit from chemotherapy. 84% of the ER negative node negative tumours given chemotherapy were Grade III.

**Proposition 3 : Hormonal therapy (e.g. Tamoxifen) is only beneficial to women with ER positive cancers and ER negative, PgR positive cancers**

Of the 7,958 cases with known hormone therapy data, 5,607 (70%) were ER positive, 815 (10%) ER negative, 341 (4%) did not have ER status performed and for 1195 (15%) ER status was unknown (Table 117).

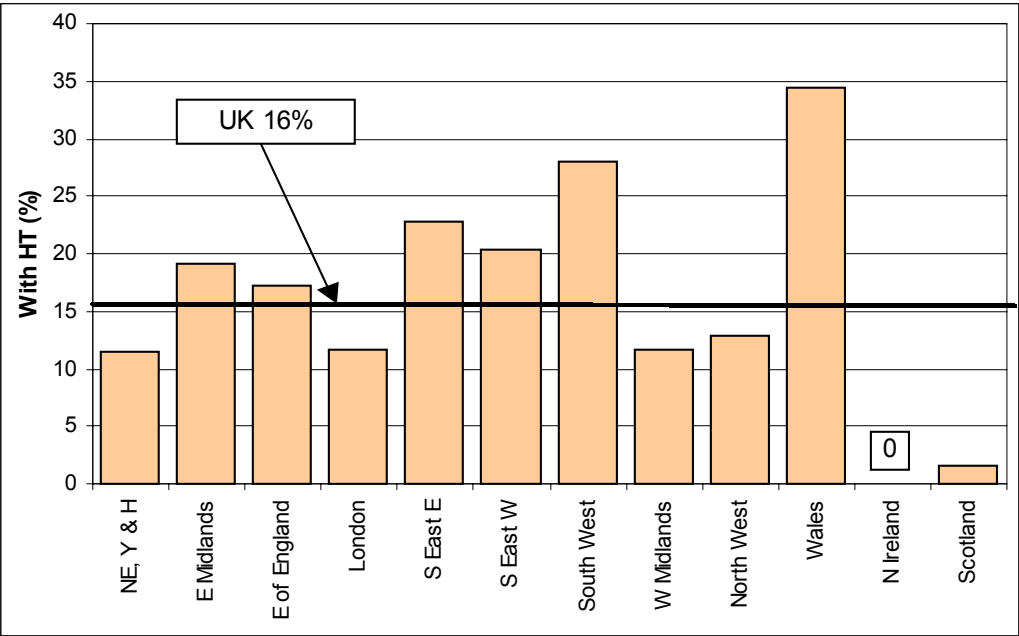
90% of the ER positive cancers and 78% of ER negative cancers with known hormone therapy data were invasive (Tables 120, 121). Overall, 9% of ER positive cancers did not receive hormone therapy, varying from 3% in North East, Yorkshire & Humber to 19% in Wales (Table 122). Figure 59 shows that 7% of ER positive invasive cancers did not receive hormone therapy (Table 123), compared to 33% of ER positive non-invasive cancers (Table 124). More than 10% of ER positive invasive cancers did not receive hormone therapy in East Midlands (12%) and Wales (18%). More than 60% of ER positive non-invasive cancers did not receive hormone therapy in South East

(West) (62%) and South West (69%). Regional QA Reference Centres and Regional QA Surgeons should determine the reasons why hormone therapy was not given to these cancers.



**Figure 59 (Tables 123, 124) : The variation in the proportion of ER positive invasive cancers that did not receive hormone therapy, compared to the proportion of ER positive non-invasive cancers that did not receive hormone therapy**

Figure 60 shows that in the UK as a whole, 16% of ER negative cancers received hormone therapy. More than 20% of ER negative cancers received hormone therapy in South East (East) (23%), South West (28%) and Wales (34%). Regional QA Reference Centres and Regional QA Surgeons should determine the reasons why hormone therapy was given to these cancers.



**Figure 60 (Table 125) : The variation in the proportion of ER negative invasive cancers that received hormone therapy**

Although the decision to give hormone therapy did in general depend on ER status, 54 (16%) of the 341 cancers with ER status not done had hormone therapy (Table 118). The code “Not Done” was not used by all regions. Table 119 shows that hormone therapy was also provided to 519 (34%) of

the 1,536 cases with ER status not done or unknown. Regional QA Reference Centres and Regional QA Surgeons should determine the reasons why hormone therapy was given to these cancers.

Of the 45 ER negative, PgR positive cancers with known hormone therapy data, 30 (67%) received hormone therapy (Table 127). In contrast, 14% of the ER negative, PgR negative cancers with known hormone therapy data received hormone therapy (Table 128). PgR status does therefore appear to have been a factor used to determine whether to give hormone therapy to ER negative cancers. Only 10 ER negative cancers with PgR status not done received hormone therapy, of which 6 were in South East (East) (Table 129). In total 47 (11%) of the 410 ER negative cancers with PgR not done or unknown received hormone therapy (Table 130).

**Conclusion 3 :** Although the decision to give hormone therapy did depend on ER status and PgR status, some cancers were given hormone therapy when ER or PgR status was not done or unknown. Overall, 9% of ER positive cancers did not receive hormone therapy and 16% of ER negative cancers received hormonal therapy. 67% of ER negative, PgR positive cancers did receive hormone therapy compared with only 14% of ER negative, PgR negative cancers. The number of cancers with known PgR status was, however, very small so these data should be treated with caution.

Table 7.4A provides a summary of the proportion of cancers in each region which did not receive treatment consistent with propositions 1, 2 and 3 presented in this section.

| <b>TABLE 7.4 A : SUMMARY OF PROPOSITIONS 1, 2 AND 3</b> |                                                      |                                     |                                                                                           |                                              |                                                |                                                               |
|---------------------------------------------------------|------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------|---------------------------------------------------------------|
| <b>Region</b>                                           | <b>Proposition 1<br/>Conservation surgery, no RT</b> |                                     | <b>Proposition 2<br/>ER negative<br/>node positive<br/>invasive no CT<br/>(Table 114)</b> | <b>Proposition 3</b>                         |                                                |                                                               |
|                                                         | <b>Invasive<br/>(Table 107)</b>                      | <b>Non-invasive<br/>(Table 110)</b> |                                                                                           | <b>ER positive<br/>no HT<br/>(Table 122)</b> | <b>ER negative<br/>with HT<br/>(Table 125)</b> | <b>ER negative<br/>PgR positive<br/>no HT<br/>(Table 127)</b> |
| <i>N East, Yorks &amp; Humber</i>                       | 6% (29/470)                                          | 49% (62/126)                        | 4% (1/24)                                                                                 | 3% (21/652)                                  | 11% (11/96)                                    | 0% (0/2)                                                      |
| <i>East Midlands</i>                                    | 7% (31/417)                                          | 48% (45/94)                         | 20% (3/15)                                                                                | 11% (64/572)                                 | 19% (14/73)                                    | 20% (1/5)                                                     |
| <i>East of England</i>                                  | 11% (34/321)                                         | 53% (58/109)                        | 8% (1/12)                                                                                 | 5% (23/458)                                  | 17% (11/64)                                    | 14% (1/7)                                                     |
| <i>London</i>                                           | 17% (64/382)                                         | 60% (56/94)                         | 6% (1/18)                                                                                 | 14% (59/411)                                 | 12% (8/69)                                     | 20% (1/5)                                                     |
| <i>South East (East)</i>                                | 19% (65/338)                                         | 63% (57/90)                         | 17% (2/12)                                                                                | 12% (49/422)                                 | 23% (15/66)                                    | 0% (0/1)                                                      |
| <i>South East (West)</i>                                | 13% (45/352)                                         | 74% (73/98)                         | 11% (1/9)                                                                                 | 11% (43/378)                                 | 20% (12/59)                                    | 60% (3/5)                                                     |
| <i>South West</i>                                       | 8% (32/413)                                          | 64% (76/119)                        | 24% (5/21)                                                                                | 8% (38/504)                                  | 28% (21/75)                                    | 43% (3/7)                                                     |
| <i>West Midlands</i>                                    | 7% (25/356)                                          | 43% (31/72)                         | 15% (3/20)                                                                                | 5% (24/443)                                  | 12% (9/77)                                     | 0% (0/1)                                                      |
| <i>North West</i>                                       | 17% (91/551)                                         | 48% (63/131)                        | 23% (6/26)                                                                                | 12% (77/666)                                 | 13% (15/117)                                   | 60% (3/5)                                                     |
| <i>Wales</i>                                            | 4% (11/309)                                          | 57% (43/75)                         | 22% (2/9)                                                                                 | 19% (73/380)                                 | 34% (10/29)                                    | 20% (1/5)                                                     |
| <i>Northern Ireland</i>                                 | 11% (9/84)                                           | 53% (16/30)                         | 14% (1/7)                                                                                 | 7% (8/111)                                   | 0% (0/27)                                      | 100% (1/1)                                                    |
| <i>Scotland</i>                                         | 7% (31/438)                                          | 20% (22/109)                        | 13% (2/16)                                                                                | 8% (48/610)                                  | 2% (1/63)                                      | 100% (1/1)                                                    |
| <b>UK</b>                                               | <b>11%<br/>(467/4431)</b>                            | <b>52%<br/>(602/1147)</b>           | <b>15%<br/>(28/189)</b>                                                                   | <b>9%<br/>(527/5607)</b>                     | <b>16%<br/>(127/815)</b>                       | <b>33%<br/>(15/45)</b>                                        |

Shaded if 10% above the value for the UK as a whole

## 8. SURVIVAL ANALYSIS

Detailed tables giving full audit results are provided in Appendix 8 starting on p145

UK NHS Breast Screening Programme data for women with breast cancers detected by screening between 1st April 1992 and 31st March 1998 were combined with data recorded by regional cancer registries to analyse breast cancer survival. All cases were followed up to the study end date of 31st March 2003, enabling survival for a period of up to 10 years post diagnosis to be calculated. By liaising with the cancer registries serving their population, 9 of the 12 Regional QA Reference Centres were able to provide complete data for this analysis. Scotland provided no data. East of England and London were only able to provide data for cases detected in 1997/98.

Age at diagnosis, invasive grade, invasive tumour size and nodal status were requested from the screening services for cases detected in 1997/98. Tumour characteristics for earlier years were collected in previous audits. Regional QA Reference Centres were given the opportunity to update the audit database if necessary.

### 8.1 Survival Analysis Methods

Relative survival is defined as the observed survival in the patient group divided by the expected survival of the general population, matched by age and sex. The cumulative relative survival is interpreted as the proportion surviving a given interval after diagnosis in the hypothetical situation that breast cancer is the only possible cause of death. A population without breast cancer would have a relative survival rate of 100%. Relative survival was calculated, using the statistical package Surv2 (*“Surv2: Relative Survival Analysis Program”*, Esko T Voutilainen, Paul W. Dickman, Timo Hakulinen. *Finnish Cancer Registry (Helsinki) and Dept of Medical Epidemiology, Karolinska Institutet (Stockholm)*).

Expected survival probabilities for women in the general UK population were calculated using the Hakulinen method with probability of life tables supplied by the Government's Actuary Department. For each relative survival rate, 95% confidence intervals were approximated as twice the standard error. Relative survival curves were tested for statistically significant differences using the proportional hazards alternative hypothesis. Full details can be found in the Surv2 software manual.

### 8.2 Eligibility of Cases for the Survival Analysis

Details of 31,580 breast cancers detected by screening between 1st April 1992 and 31st March 1998 were submitted to the survival audit. Of these, 2,184 cancers (7%) were excluded if one of the following reasons applied.

- Unknown invasive status (380 cases)
- Case not registered at the regional cancer registry, or registered with an unknown diagnosis date (885 cases)
- Screen detected cancer not confirmed to be the primary tumour, either because it was flagged as a recurrence at the cancer registry or because the date of diagnosis at the cancer registry was more than 3 months prior to the screening surgery date (919 cases)

The diagnosis date recorded at the cancer registry was taken for the study, unless it was incomplete or later than the screening surgery date, in which case the screening surgery date was used. This can occur where the cancer registry has incomplete data for the cancer, for example a registration based only on the death certificate.

Regional variation in the number of excluded cases is shown in Table 131 and summarised below. The proportion of cancers with known invasive status that were not registered at the cancer registry varied from 0 cases in West Midlands and Northern Ireland to 13% in East of England. The proportion of screen detected cancers not confirmed to be primary breast cancer varied from 0% in Northern Ireland (0 cases) and East Midlands (4 cases) to 5% (233 cases) in North East, Yorkshire & Humber and 7% (251 cases) in South West. Where small numbers of cancers were not confirmed to be primary breast cancer, this suggests that recurrences detected at screening are not included in the audit data for these screening services. Overall, 29,396 cancers were eligible for inclusion in the survival analysis, of which 23,756 were invasive, 617 micro-invasive cancers and 5,023 non-invasive cancers (Table 132).

| <b>PROPORTION OF CASES REGISTERED AT THE CANCER REGISTRY (SEE TABLE 131)</b> |                                               |                                                     |          |                                                          |          |                       |
|------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------|----------------------------------------------------------|----------|-----------------------|
| <b>Region</b>                                                                | <b>Total cases with known invasive status</b> | <b>Cases not registered at the cancer registry*</b> |          | <b>Cases not confirmed to be primary breast cancer**</b> |          | <b>Total eligible</b> |
|                                                                              |                                               | <b>No.</b>                                          | <b>%</b> | <b>No.</b>                                               | <b>%</b> |                       |
| <i>N East, Yorks &amp; Humber</i>                                            | 5038                                          | 219                                                 | 4        | 233                                                      | 5        | 4586                  |
| <i>East Midlands</i>                                                         | 2921                                          | 148                                                 | 5        | 4                                                        | 0        | 2769                  |
| <i>East of England</i>                                                       | 753                                           | 96                                                  | 13       | 21                                                       | 3        | 636                   |
| <i>London</i>                                                                | 794                                           | 8                                                   | 1        | 20                                                       | 3        | 766                   |
| <i>South East (East)</i>                                                     | 3463                                          | 123                                                 | 4        | 134                                                      | 4        | 3206                  |
| <i>South East (West)</i>                                                     | 2859                                          | 6                                                   | 0        | 52                                                       | 2        | 2801                  |
| <i>South West</i>                                                            | 3786                                          | 105                                                 | 3        | 251                                                      | 7        | 3430                  |
| <i>West Midlands</i>                                                         | 3373                                          | 0                                                   | 0        | 79                                                       | 2        | 3294                  |
| <i>North West</i>                                                            | 4567                                          | 73                                                  | 2        | 107                                                      | 2        | 4387                  |
| <i>Wales</i>                                                                 | 2708                                          | 107                                                 | 4        | 18                                                       | 1        | 2583                  |
| <i>Northern Ireland</i>                                                      | 938                                           | 0                                                   | 0        | 0                                                        | 0        | 938                   |
| <b>United Kingdom</b>                                                        | <b>31200</b>                                  | <b>885</b>                                          | <b>3</b> | <b>919</b>                                               | <b>3</b> | <b>29396</b>          |

\*includes cases with unknown diagnosis date at the cancer registry

\*\* flagged as a recurrence, or with cancer registry diagnosis date more than 3 months after screening surgery

### 8.3 Data Quality and Characteristics of Cases Included in the Analysis

Data completeness has improved markedly in the 6 year study period. The proportion of invasive cancers with unknown size has fallen from 7% in 1992/93 to 2% in 1997/98 and the proportion with unknown grade has decreased from 21% to 5%. In 1992/93, 43% of cancers had unknown nodal status due to a combination of lower rates of axillary surgery and poor data collection. In 1996/97 only 16% of invasive cancers had unknown nodal status. Where size, grade and nodal status data were available, an NPI score could be calculated. The proportion of invasive cancers with unknown NPI score has fallen from 54% in 1992/93 to 20% in 1997/98.

Regional variations in the data completeness of size, grade and nodal status are shown in Tables 134 to 137. Overall, NPI score was unknown for 36% of cases, varying from 9% in Wales to 63% in North West where 54% of cancers had unknown nodal status.

| <b>6 YEAR COMPARISON:<br/>DATA COMPLETENESS FOR INVASIVE CANCERS (%)</b> |                |                |                |                |                |                |              |
|--------------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|
|                                                                          | <b>1992/93</b> | <b>1993/94</b> | <b>1994/95</b> | <b>1995/96</b> | <b>1996/97</b> | <b>1997/98</b> | <b>Total</b> |
| <i>Unknown size</i>                                                      | 7              | 5              | 3              | 2              | 2              | 2              | 3            |
| <i>Unknown grade</i>                                                     | 21             | 20             | 14             | 11             | 5              | 5              | 12           |
| <i>Unknown nodal status</i>                                              | 43             | 40             | 31             | 28             | 20             | 16             | 29           |
| <i>Unknown NPI</i>                                                       | 54             | 51             | 40             | 35             | 25             | 20             | 36           |

The following table shows that the tumour characteristics of the cases with known data have remained remarkably consistent over the 6 years of the audit, even with the improvement in data completeness. Of the 15,153 invasive cancers with known NPI score, 3,817 (25%) fell in the excellent prognostic group (EPG), 5,055 (33%) in the good prognostic group (GPG), 3,470 (23%) in moderate prognostic group 1 (MPG1), 1,781 (12%) in moderate prognostic group 2 (MPG2) and 1,030 (7%) in the poor prognostic group (PPG).

| <b>6 YEAR COMPARISON:<br/>SUMMARY PROFILE OF ELIGIBLE INVASIVE CANCERS EXCLUDING UNKNOWN DATA (%)</b> |                |                |                |                |                |                |              |
|-------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|
|                                                                                                       | <b>1992/93</b> | <b>1993/94</b> | <b>1994/95</b> | <b>1995/96</b> | <b>1996/97</b> | <b>1997/98</b> | <b>Total</b> |
|                                                                                                       | <b>%</b>       | <b>%</b>       | <b>%</b>       | <b>%</b>       | <b>%</b>       | <b>%</b>       |              |
| <b>1-&lt;10 mm</b>                                                                                    | 21             | 23             | 23             | 23             | 24             | 24             | 23           |
| <b>10-&lt;20 mm</b>                                                                                   | 50             | 51             | 52             | 52             | 51             | 50             | 51           |
| <b>20-&lt;50 mm</b>                                                                                   | 27             | 24             | 24             | 24             | 23             | 24             | 24           |
| <b>50+ mm</b>                                                                                         | 2              | 2              | 1              | 1              | 1              | 2              | 1            |
| <b>Grade Not Assessable</b>                                                                           | 0              | 0              | 0              | 0              | 1              | 1              | 0            |
| <b>Grade I</b>                                                                                        | 35             | 36             | 35             | 35             | 35             | 37             | 36           |
| <b>Grade II</b>                                                                                       | 48             | 47             | 46             | 46             | 46             | 45             | 46           |
| <b>Grade III</b>                                                                                      | 17             | 17             | 19             | 18             | 18             | 17             | 18           |
| <b>Node Positive</b>                                                                                  | 32             | 31             | 30             | 28             | 30             | 26             | 29           |
| <b>Node Negative</b>                                                                                  | 68             | 69             | 70             | 72             | 70             | 74             | 71           |
| <b>EPG</b>                                                                                            | 24             | 25             | 24             | 25             | 25             | 26             | 25           |
| <b>GPG</b>                                                                                            | 30             | 34             | 33             | 33             | 33             | 35             | 33           |
| <b>MPG1</b>                                                                                           | 24             | 21             | 24             | 24             | 23             | 22             | 23           |
| <b>MPG2</b>                                                                                           | 13             | 12             | 12             | 12             | 13             | 10             | 12           |
| <b>PPG</b>                                                                                            | 8              | 8              | 7              | 6              | 6              | 6              | 7            |

Table 133 shows that the median age of the invasive cancers included in the survival analysis was 58. The summary table below shows that the age profile of women in the survival analysis has remained stable over the 6 year study period.

| <b>6 YEAR COMPARISON : AGE PROFILE OF ELIGIBLE INVASIVE CANCERS (%)</b> |                |                |                |                |                |                |              |
|-------------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|
|                                                                         | <b>1992/93</b> | <b>1993/94</b> | <b>1994/95</b> | <b>1995/96</b> | <b>1996/97</b> | <b>1997/98</b> | <b>Total</b> |
| <b>&lt;49</b>                                                           | 0              | 0              | 0              | 0              | 0              | 0              | 0            |
| <b>49</b>                                                               | 1              | 1              | 2              | 2              | 3              | 2              | 2            |
| <b>50-52</b>                                                            | 14             | 17             | 19             | 22             | 20             | 23             | 19           |
| <b>53-55</b>                                                            | 16             | 15             | 14             | 14             | 15             | 14             | 15           |
| <b>56-58</b>                                                            | 18             | 19             | 18             | 15             | 16             | 15             | 16           |
| <b>59-61</b>                                                            | 21             | 21             | 20             | 18             | 17             | 17             | 19           |
| <b>62-64</b>                                                            | 23             | 21             | 20             | 19             | 18             | 16             | 19           |
| <b>65-67</b>                                                            | 5              | 4              | 4              | 5              | 6              | 6              | 5            |
| <b>68-70</b>                                                            | 1              | 1              | 1              | 3              | 3              | 3              | 2            |
| <b>&gt;70</b>                                                           | 1              | 1              | 1              | 2              | 3              | 3              | 2            |
| <b>Total</b>                                                            | <b>100</b>     | <b>100</b>     | <b>100</b>     | <b>100</b>     | <b>100</b>     | <b>100</b>     | <b>100</b>   |

## 8.4 Cause of Death

The main advantage of calculating relative rather than cause-specific survival is that knowledge of the cause of death is not required. Cancer registries were asked to supply cause of death for each screen detected cancer with death recorded before the survival analysis cut-off point (31<sup>st</sup> March 2003) together with text from the death certificate to give the exact cause of death.

Table 139 shows that there were a total of 49 deaths recorded amongst the 617 women with micro-invasive cancer detected by screening. 47% of these were deaths from the screen detected cancer. Of the 330 deaths in women with non-invasive cancer, 110 (33%) were attributed to the tumour detected by screening (Table 140).

Overall, 62% of deaths among women with invasive cancer were recorded as being due to the screen detected breast cancer, 12% due to a cancer other than the screen detected breast cancer and 16% due to non-cancer related causes. Death cause was not collected or unknown for 382 deaths (11%). There were, however, wide regional variations in the proportions of women with invasive cancer recorded as dying from each cause of death. For instance, in East of England only 42% of deaths in women with invasive cancer were attributed to the screen detected breast cancer, compared to 70% in South East (East) and 73% in London (Table 138). Because of these differences, cause specific survival analysis was not performed as it was felt that it was necessary to validate the death cause codes submitted to the survival study against the original death certificate text.

## 8.5 5 Year Relative Survival Rates For Cancers Diagnosed in 1997/98

Each year, the ABS at BASO Survival Audit collects a new cohort of cancer data in order to provide the latest 5 year survival figure. All Regional QA Reference Centres apart from Scotland were able to provide data for 1997/98. Figure 61 shows the regional variation in 5 year survival compared to the UK figure of 95.8% (95%CI 95.0%-96.5%). Northern Ireland had the lowest relative survival at 91.5% (95%CI 85.1%-97.9%), and South East (East) the highest at 97.4% (95%CI 95.2%-99.6%).

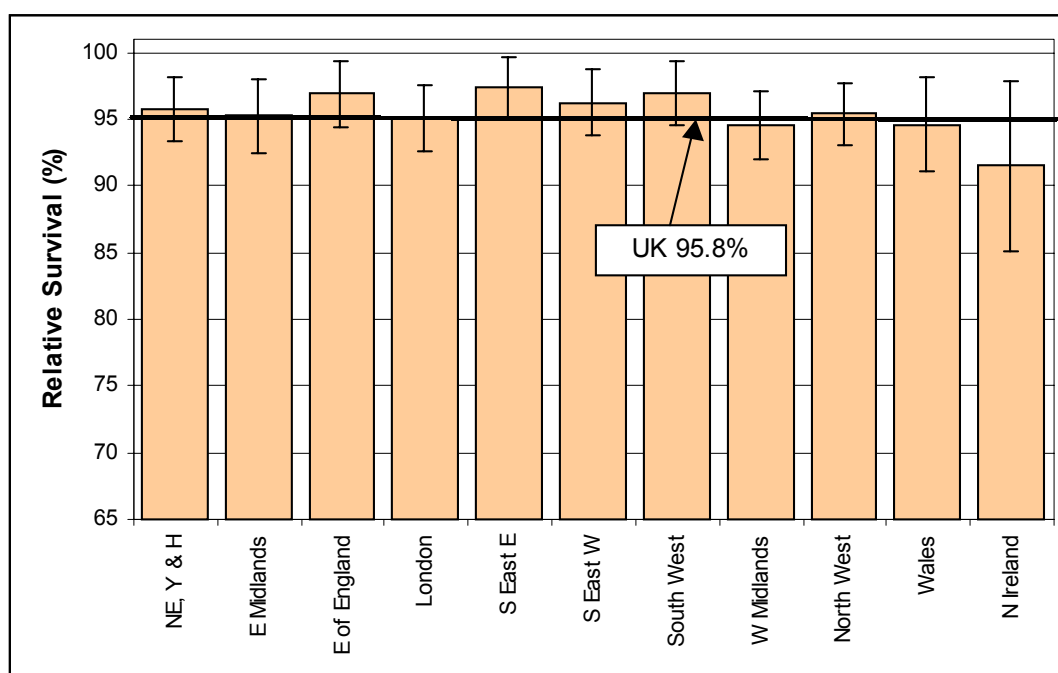


Figure 61 (Table 141) : Variation in 5 year relative survival for women with screen detected invasive breast cancer diagnosed in 1997/98

## 8.6 5 Year Relative Survival Rates For Cancers Diagnosed in 1992-98

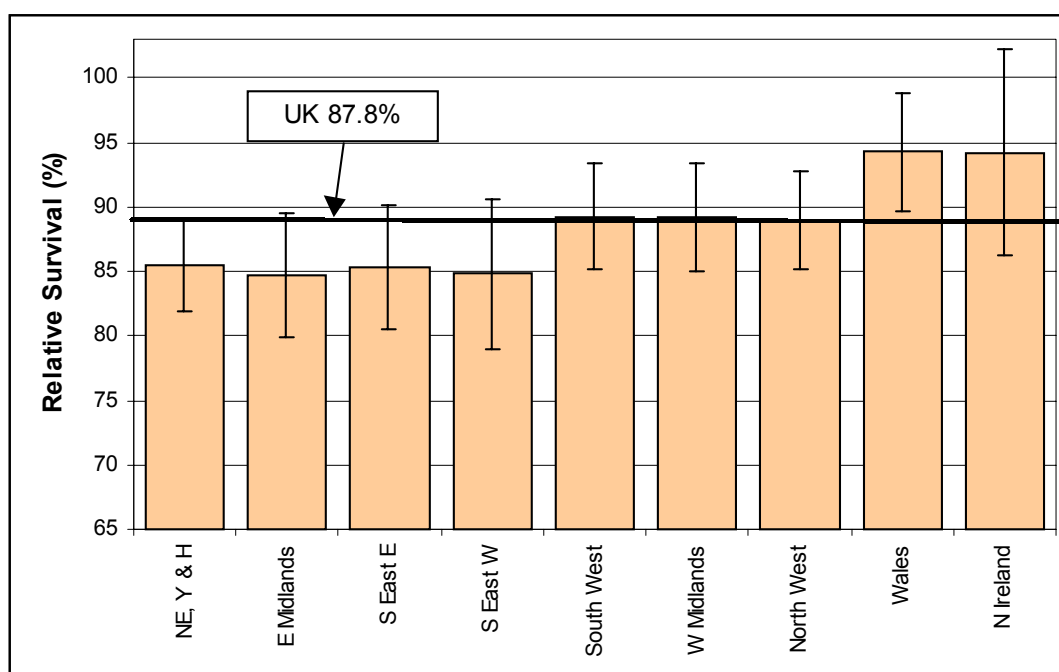
The 5 year survival rate presented in previous years for each region was updated to provide 3 year rolling relative survival rates for each region for the 3 year periods 1992/93-1994/95 to 1995/96-1997/98 (Table 142).

Overall, no significant differences were seen in relative survival rates over the 6 year period studied. 5 year relative survival for invasive cancers was 94.2% (95%CI 93.6%-94.8%) for cases in the first 3 years of the study, and 95.1% (94.6%-95.6%) in the final 3 years. In each 3 year period, women with non-invasive cancer had relative survival rates slightly in excess of 100%, indicating that their chance of survival was no worse than that of the general UK female population.

| <b>3 YEAR ROLLING DATA:<br/>5 YEAR RELATIVE SURVIVAL (TABLE 143)</b> |                        |                        |                        |                        |
|----------------------------------------------------------------------|------------------------|------------------------|------------------------|------------------------|
|                                                                      | <b>1992/93-1994/95</b> | <b>1993/94-1995/96</b> | <b>1994/95-1996/97</b> | <b>1995/96-1997/98</b> |
| <i>Invasive</i>                                                      | 94.2 (93.6,94.8)       | 94.5 (94.0,95.1)       | 94.8 (94.2,95.4)       | 95.1 (94.6,95.6)       |
| <i>Micro-invasive</i>                                                | 101.6 (99.6,103.5)     | 100.3 (98.0,102.6)     | 99.7 (97.3,102.1)      | 99.6 (97.2,101.9)      |
| <i>Non-invasive</i>                                                  | 100.8 (100.0,101.6)    | 100.7 (99.9,101.4)     | 100.6 (99.9,101.4)     | 100.4 (99.7,101.1)     |

## 8.7 10 Year Relative Survival Rates For Cancers Diagnosed in 1992/93

Women with breast cancer screen detected in 1992/93 had a 10 year relative survival rate of 87.8% (95%CI 86.3%-89.3%). This is the first time that the ABS at BASO Survival Audit has published a 10 year relative survival rate for women with screen detected breast cancer. Regional variations are shown in Figure 62. The regional differences in 10 year survival may reflect different levels of death certificate follow-up at each cancer registry.



**Figure 62 (Table 144) : Variation in 10 year relative survival for women with screen detected invasive breast cancer diagnosed in 1992/93**

Figure 63 shows the variation in survival rates for each of the 6 years considered. Relative survival rates are given for the maximum number of years of follow-up post diagnosis. Thus, 10 years of follow-up are available for 1992/93 cases but only 5 years of follow-up for cases detected in 1997/98. Confidence intervals for the data in Figure 63 are given in Table 145. Although 5 year

relative survival has improved over the 6 year study period, this increase is not statistically significant.

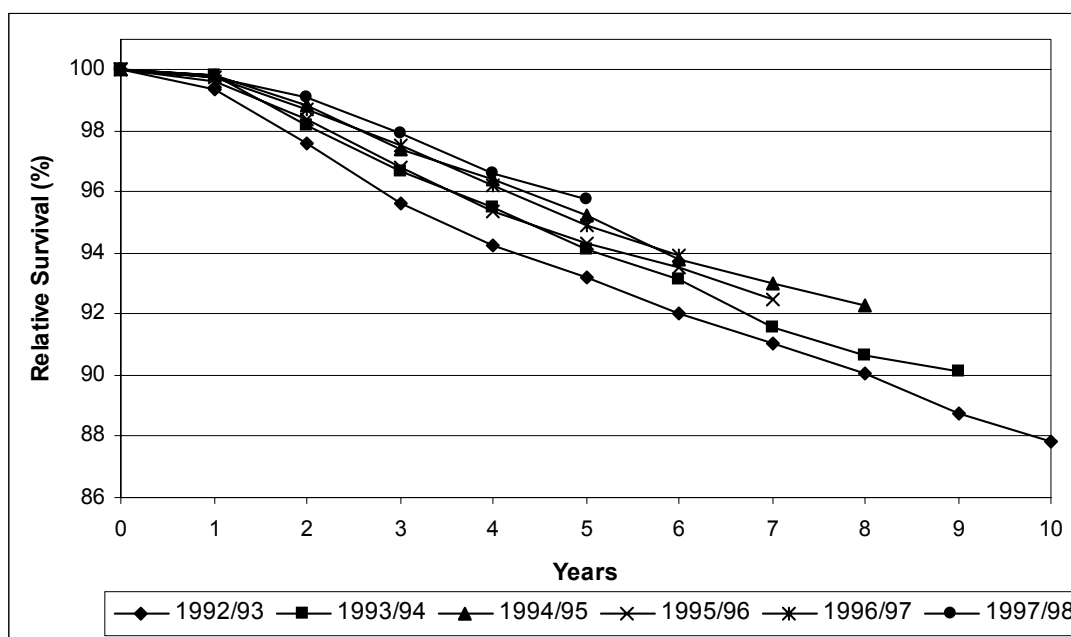


Figure 63 (Table 145) : Variation in relative survival for women with screen detected invasive breast cancer diagnosed in 1992-98

## 8.8 Relative Survival According to Tumour Characteristics

### 8.8.1 Relative Survival of Invasive Cancers by Age Group

Table 146 shows the variation in relative survival rates of women with invasive cancer with age at diagnosis. For women in the screening age range, the 5 year relative survival rate for 1995-98 was highest for women in the first two screening rounds at 95.3% (age 50-52 95%CI 94.4%-96.3%, age 53-55 95%CI 94.0%-96.5%). Differences in survival rates with age band were not statistically significant.

### 8.8.2 Relative Survival of Invasive Cancers by Tumour Size

Table 147 shows how relative survival rates varied with tumour size at diagnosis. The 5 year relative survival rate in 1995-98 for women with <10mm invasive cancers was 98.3% (95% CI 97.4%-99.1%) and for those with 10-<20mm invasive cancers was 96.8% (95% CI 96.1%-97.4%). Relative survival rates were worse for larger cancers but these have improved since 1992. The 5 year relative survival for 50+mm invasive cancers was 78.4% (95% CI 71.6%-85.2%) in 1995-98 compared to 69.1% (95% CI 71.6%-85.2%) in 1992-95.

### 8.8.3 Relative Survival of Invasive Cancers by Tumour Grade

Table 148 shows how relative survival rates varied with tumour grade at diagnosis. The 5 year relative survival rate in 1995-98 for women with Grade I cancers was 100.2% (95% CI 99.6%-100.8%), suggesting that women with Grade I screen detected cancers have a 5 year survival no worse than that of the general UK female population.

### 8.8.4 Relative Survival of Invasive Cancers by Nodal Status

Although the number of invasive cancers with unknown nodal status fell from 43% in 1992/93 to 16% in 1997/98, this is still much higher than the 7% with nodal status unknown in the main audit

of cases diagnosed in 2002/03. The ratio of node negative to node positive cancers for those cancers in the survival study with nodal status known was 71:29 (Table 136). This is slightly lower than the 75:25 ratio found in the main 2002/03 audit and is consistent with the interpretation that many of the cancers with unknown nodal status are in fact node negative.

Table 149 shows how relative survival rates varied with nodal status at diagnosis. The 5 year relative survival rate for women with node negative cancers in 1995-98 was 98.0% (95% CI 97.5%-98.6%), compared with only 85.9% (95% CI 84.4%-87.4%) in those with positive nodes.

### 8.8.5 Relative Survival of Invasive Cancers by NPI Group

Figure 64 shows how relative survival rates varied with NPI score at diagnosis. The 5 year relative survival rate in 1995-98 for cancers in the excellent prognostic group (EPG) was 100.9% (95% CI 100.1%-101.6%), and for cancers in the good prognostic group (GPG) and moderate prognostic group 1 (MPG1) was 98.6% (95% CI 97.8%-99.5%) and 94.0% (95% CI 92.7%-95.3%) respectively. The excellent 5 year relative survival in these good prognostic groups has not changed in the 6 year period studied. However, for women with tumours in the poor prognostic group (PPG) the 5 year relative survival rate has increased from 57.8% (95% CI 52.8%-62.8%) in 1992-95 to 66.7% (95% CI 62.6%-70.8%) in 1995-98. 5 year relative survival has also improved with time for women in moderate prognostic group 2 (MPG2), increasing from 82.6% (95% CI 79.4%-85.8%) in 1992-95 to 86.1% (95% CI 83.6%-88.5%) in 1995-98.

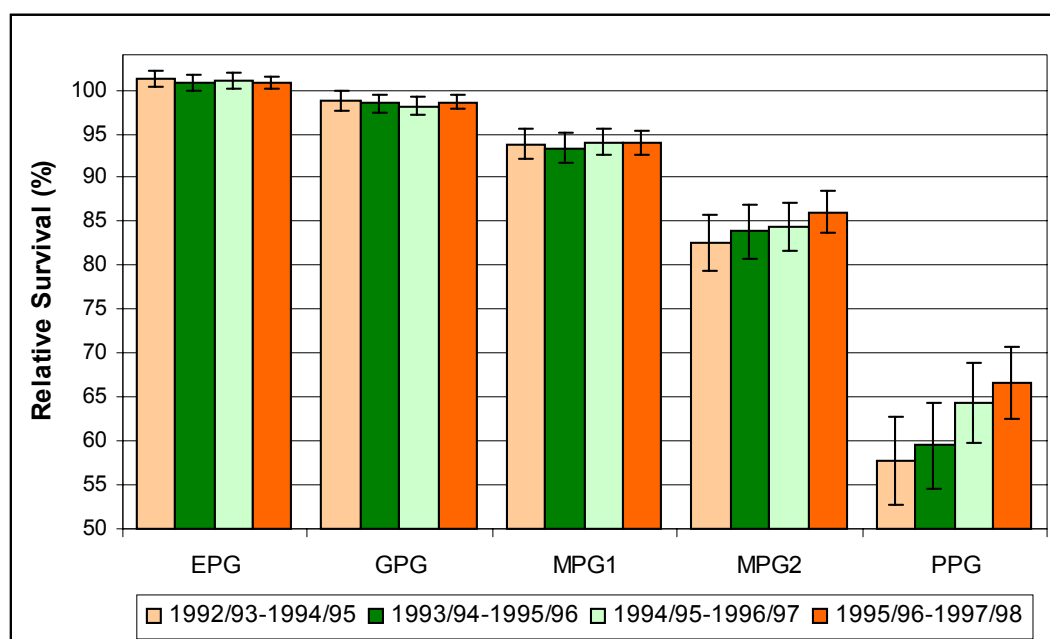


Figure 64 (Table 150) : Variation in 5 year relative survival by NPI for women with screen detected invasive breast cancer diagnosed in 1995/96-1997/98

#### COMMENT:

- Of the 31,200 cancers with known invasive status submitted to the survival analysis for the period 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1998, 885 (3%) were excluded because they were not registered at the cancer registry. A further 919 cancers (3%) were excluded because the cancer registry could not confirm that the cancer detected by screening was the primary tumour.
- The survival analysis included 29,396 screen detected cancers. Of these, 23,756 were invasive cancers, 617 micro-invasive cancers and 5023 non-invasive cancers.

- Data completeness has improved markedly in the 6 year period studied. The proportion of invasive cancers with unknown size has fallen from 7% in 1992/93 to 2% in 1997/98. The proportion of invasive cancers with unknown NPI score has decreased from 54% in 1992/93 to 20% in 1997/98.
- Cause-specific survival was not performed due to regional differences in the proportion of breast cancer deaths.
- 5 year relative survival for invasive cancers screen detected in 1997/98 was 95.8% (95%CI 95.0%-96.5%).
- 5 year relative survival for invasive cancers screen detected in 1997/98 was highest for small (<10mm diameter), node negative, Grade I cancers.
- 10 year relative survival for invasive cancers screen detected in 1992/93 was 87.8% (95%CI 86.3%-89.3%).
- The 5 year relative survival rate in 1995-98 for tumours in the excellent prognostic group (EPG) was 100.9% (95% CI 100.1%-101.6%), indicating that their chance of survival was no worse than that of the general UK female population.
- For women with tumours in the poor prognostic group (PPG) the 5 year relative survival rate has increased from 57.8% (95% CI 52.8%-62.8%) in 1992-95 to 66.7% (95% CI 62.6%-70.8%) in 1995-98.

## APPENDIX 1

### ABS AT BASO AUDIT OF SCREEN DETECTED BREAST CANCERS FOR THE YEAR OF SCREENING 1ST APRIL 2002 - 31ST MARCH 2003

| <b>REVISED AUDIT TIMETABLE (EXTENDED SURVIVAL DEADLINE)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date</b>                                                 | <b>Event</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3 April 03                                                  | Audit group meet to plan the 2002/03 audit. Proposed data items emailed to QA Co-ordinators as soon as possible after the meeting.                                                                                                                                                                                                                                                                                                                                                                                                      |
| 14 May 03                                                   | Survival audit to be discussed at Cancer Registry Directors meeting                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 23 May 03                                                   | Draft audit documents emailed to QA Reference Centres (QARCs) for comment.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 28 May 03                                                   | Draft audit documents discussed at QA Co-ordinators Meeting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 29 May -<br>11 Jun 03                                       | QA Co-ordinators to discuss draft audit documents with their QA Surgeon, QA Director and QA Data Managers and return comments to the West Midlands Cancer Intelligence Unit (WMCIU).                                                                                                                                                                                                                                                                                                                                                    |
| 13 Jun 03                                                   | Audit documents sent to QA Surgeons, QA Directors and QA Co-ordinators. QA Co-ordinators liaise with lead surgeons, data managers and screening office managers on methods used to collect data.<br><br>Survival and adjuvant audit data collection can begin immediately. Main audit data can be collected as soon as the screening office computer system is ready to provide a KC62 return for 2002/03. <i>Main audit data collection is not dependent on the version of KC62 to be run nor on the deadline for KC62 submission.</i> |
| 19 Jun 03                                                   | Audit to be discussed at QA Directors meeting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 18 Aug 03                                                   | Deadline for QARCs to request survival audit data from Cancer Registries.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6-10 Oct 03                                                 | All QARCs to ensure that an appropriate member of staff is available to respond to any queries from the WMCIU regarding the survival audit.                                                                                                                                                                                                                                                                                                                                                                                             |
| 1 Oct 03                                                    | Audit to be discussed at the ABS at BASO Screening Representatives meeting                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5 Dec 03<br>or earlier                                      | Suggested deadline for main and adjuvant audit data to be provided to QARCs with the signature of the lead breast surgeon to confirm that the data are correct.<br><i>An earlier deadline may be set by the QARC due to local issues, eg. new NBSS software.</i>                                                                                                                                                                                                                                                                        |
| 5 Dec 03 –<br>16 Jan 04                                     | QARCs validate audit data and collate into the main and adjuvant spreadsheets provided. QARCs ensure that all cases are coded correctly, that all internal data checks are resolved and that there are no anomalies in the data.                                                                                                                                                                                                                                                                                                        |
| <b>19 Jan 04</b>                                            | <b>Deadline for receipt of main and adjuvant audit data from QARCs at the WMCIU.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 19-30 Jan<br>04                                             | All QARCs to ensure that an appropriate member of staff is available to respond to any queries from the WMCIU.<br>The WMCIU liaises with QARCs to ensure data are complete, correct and surgically confirmed. It will not be possible to incorporate new or late data after this stage.                                                                                                                                                                                                                                                 |
| <b>23 Jan 04</b>                                            | <b>Deadline for Cancer Registries to provide data to the QARCs for the survival audit.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>30 Jan 04</b>                                            | <b>Deadline for receipt of survival data from QARCs at the WMCIU.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 20 Feb 04                                                   | Data tables sent to the Audit Group in advance of the first draft meeting.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 26 Feb 04                                                   | Audit Group meet to discuss the first draft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3 Mar 04                                                    | Audit booklet first draft to be taken to the ABS at BASO Screening Representatives meeting, and emailed to QA Reference Centres for information. <i>All draft data should be marked "Not for circulation" to avoid unpublished data getting into the public domain.</i>                                                                                                                                                                                                                                                                 |
| 26 Mar 04                                                   | Audit booklet final draft sent to the Audit Group to act as scrutinisers/editors and to finalise the possible issues to be raised during the Motorcycle Museum presentation.                                                                                                                                                                                                                                                                                                                                                            |
| 19 April 04                                                 | Deadline for receipt of the audit booklet at the printers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 19-23 April<br>04                                           | Advance copies of booklet to be sent to speakers and QARCs for the information of QA Directors, QA Co-ordinators and QA Data Managers. Possible issues to be raised during the Motorcycle Museum presentation to be sent to QA Directors and QA Surgeons.                                                                                                                                                                                                                                                                               |
| <b>26 May 04</b>                                            | <b>2004 ABS at BASO Meeting at the East Midlands Conference Centre, Nottingham</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## APPENDIX 2

### ABS AT BASO AUDIT OF WOMEN WITH SCREEN DETECTED BREAST CANCER DETECTED BETWEEN 1<sup>ST</sup> APRIL 2002 AND 31<sup>ST</sup> MARCH 2003

**PLEASE SUPPLY DATA FOR WOMEN OF ALL AGES WITH SCREEN DETECTED  
BREAST CANCER WITH FIRST OFFERED APPOINTMENT FROM  
1<sup>ST</sup> APRIL 2002 - 31<sup>ST</sup> MARCH 2003 INCLUSIVE  
ACCORDING TO THE REGIONAL BOUNDARIES EXTANT FROM 1<sup>ST</sup> APRIL 2003**

This document accompanies the MS Excel spreadsheet designed to record ABS at BASO breast audit main surgical data and screening surgical caseload data which has been prepared by the West Midlands Cancer Intelligence Unit.

It is the responsibility of the QA Co-ordinator to organise collection at unit level, on paper and/or using copies of the spreadsheet. Regional data should then be sent to the West Midlands Cancer Intelligence Unit (WMCIU) on the accompanying spreadsheet for collation of national data. A number of data quality checks have been included in the questionnaire to assist those supplying and collating data. These should be checked before submitting the data. **Please do not delete any rows, columns or tables in the spreadsheet.**

Each unit should be identified with a distinct code such as "Unit 1", "Unit 2" etc. Data will be presented by region and unit (with only the region identified). Each surgeon should be identified by their GMC code in order to audit screening caseload accurately. The unique identifying number known as the "Sx" number is required for data validation and matching purposes.

***The deadline for submission of regional data by the regional QA Co-ordinator  
to the WMCIU is 19<sup>th</sup> January 2004***

\*\*\*\*\*

**UNIT:**

**REGION:**

\*\*\*\*\*

#### **SURGICAL CONFIRMATION**

**I confirm that these data are an accurate record for the  
above unit**

**Signed (Lead Surgeon):**

**Print name:**

**Date:**

## DEFINITIONS AND GUIDANCE NOTES

**Bilateral and multiple cancers:** The KC62 report only counts one cancer per woman. Cancers included in the ABS at BASO breast audit should be counted in the same way so that the total number of cancers in the ABS at BASO breast audit equals the total number of cancers counted on the KC62 report for 2002/03. If bilateral or multiple cancers have been detected the KC62 software selects the worst prognosis cancer. If a non-invasive and an invasive tumour have been detected the KC62 report counts the invasive tumour only. The same rules should be applied for this audit. All data for bilateral cases should be taken from the cancer included in the KC62.

**Diagnosis on radiological and/or clinical grounds only:** Cancers diagnosed with neither C5 nor B5 nor malignant diagnostic open biopsy should not be included this audit. Enter the total number of such cancers in the preliminary data table.

**Pre-operative diagnosis for cancers:** NHSBSP policy defines non-operative diagnosis as diagnosis by C5 cytology and/or B5 core biopsy only. These cancers appear in KC62 C18 L24. The more familiar term “pre-operative” is retained for this audit rather than “non-operative” even though not all cancers with C5/B5 undergo surgery.

**Malignant diagnostic open biopsies:** Cancers diagnosed by neither C5 nor B5 will have had a diagnostic open biopsy with outcome of cancer. These cancers appear in KC62 C24 L24, which includes some cancers with operations which were both diagnostic and therapeutic. If the diagnostic open biopsy was treatment, and was the only operation, then the total number of therapeutic operations is zero.

**Cytology and Core biopsy:** The following codes are used on the NHSBSP pathology reporting forms

### Cytology reporting

C1=Unsatisfactory

C2=Benign

C3=Atypia probably benign

C4=Suspicious of malignancy

C5=Malignant

### Core biopsy reporting

B1=Unsatisfactory/Normal tissue only

B2=Benign

B3=Benign but of uncertain malignant potential

B4=Suspicious of malignancy

B5A=Non-invasive cancer

B5B=Invasive cancer

B5C=Cancer of not assessable invasive status

If cytology was carried out please indicate the highest (worst) cytology result in the “worst cytology”. If no cytology was carried out enter NONE. If core biopsy was carried out please indicate the highest (worst) core biopsy result in the “worst core biopsy” column. If no core biopsy was carried out enter NONE. If a B5 result was obtained but the malignancy type (B5A, B5B or B5C) is unknown enter B5U in the “worst core biopsy” column

The number of visits to an assessment clinic (excluding results clinics) in order to undergo core biopsy or cytology procedures should be recorded.

**Screening surgical caseload:** To each cancer in Part A assign the GMC code of the consultant surgeon. Women with no GMC code assigned (e.g. because the woman refused treatment) should be recorded as having no surgery in the surgical caseload audit. If the woman was under the care of more than one consultant surgeon for her diagnostic and therapeutic surgery enter GMC codes for

each of the surgeons in Part A (separated by semicolons) and count the woman in the caseloads for each surgeon in the surgical caseload audit. By assigning a GMC code to each cancer in Part A each consultant surgeon can be credited with their total UK NHSBSP screening caseload.

**Reasons for low caseload:** An explanation is required for surgeons who have screening caseload <10 in 2002/03. Explanations given at unit level may become redundant when caseloads are collated at regional and then at national level.

**First surgery date:** The first surgery date given should be the first overall, whether this surgery was diagnostic or therapeutic.

**Reconstruction surgery:** Surgery which is only for the purpose of reconstruction should be excluded when calculating the date of final surgery. For women undergoing mastectomy, the surgeon should indicate whether there was immediate reconstruction.

**Surgery for benign conditions:** Surgery for benign conditions should be excluded when calculating the total number of therapeutic operations.

**Type of operation/treatment :** An operation is a visit to theatre, at which one or more procedures may be carried out. For this audit, code each diagnostic or therapeutic operation (up to a maximum of 5) according to whether conservation surgery or mastectomy was carried out, with or without an axillary procedure. Exclude reconstruction. Conservation surgery can be wide local excision, repeat excision, localisation biopsy etc. If a case had only 2 operations, code the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> operation as no surgery (NS).

**Diagnostic and therapeutic operations :** The number of operations will be calculated by the West Midlands Cancer Intelligence Unit. A woman with screen detected breast cancer who did not have a pre-operative diagnosis (C5 or B5) must have had a diagnostic open biopsy to be included in this audit. All other operations (including axillary procedures), are considered to be therapeutic for this audit. If the diagnostic open biopsy was treatment, and was the only operation, then the total number of therapeutic operations is zero.

**Nodal Status:** Nodal status refers to **axillary lymph nodes only**. The number of nodes obtained at each operation (visit to theatre) is requested. This will be 0 in many cases, even if an axillary procedure is recorded as part of the operation type. Incidental nodes may be obtained at operations where no axillary procedure is recorded. These should be recorded in the nodal columns but all such anomalies should be checked before submission. If a case had only 2 operations, code the nodal columns for the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> operation as no surgery (NS).

**Sentinel node biopsy:** In some regions a small number of cancers may have undergone a sentinel node procedure as part of the ALMANAC trial, or another sentinel node trial. For the first, second and third operation, there are separate columns to record the number of nodes according to whether the nodes were obtained as part of a sentinel node procedure or not. A sentinel node procedure endeavours to obtain the sentinel node, however more than 1 node may be obtained.

**Lobular carcinoma in situ (LCIS):** All women with non-invasive cancer, including those with LCIS, should be included in Part C of the audit. It is accepted that for LCIS the grade, disease extent and size are not assessable.

**Micro-invasive cancer :** Non-invasive cancer with possible micro-invasion should be included in Part A and Part C of the audit. Cancers which are definitely micro-invasive should only appear in Part A.

## DATA CHECKS

References to the new KC62 Table T column and line numbers are given for information.

- |             |                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check 1     | The total number of cancers should equal KC62 C25 L36 and be equal to the number of invasive cancers (KC62 C35 L36) plus the number of micro-invasive cancers (KC62 C28 L36) plus the number of non-invasive cancers (KC62 C27 L36) plus the number of cancers with invasive status unknown (KC62 C26 L36).                           |
| Check 2     | We assume that any cancer with neither B5 nor C5 was diagnosed by malignant diagnostic open biopsy. The number of pre-operative diagnoses (B5 and/or C5) should match KC62 C18 L24. The number of malignant diagnostic open biopsies should match KC62 C24 L24.                                                                       |
| Check 3     | If the age at first offered appointment cannot be calculated, #VALUE! will appear. If the age at first offered appointment is negative, the date of diagnosis has been entered as before the date of birth. All such cases should be checked.                                                                                         |
| Check 4     | If the number of days from assessment to first surgery cannot be calculated, #VALUE! will appear. If the number of days is negative, the first surgery date has been entered as before the date of assessment. All such cases should be checked.                                                                                      |
| Check 5     | If the number of days from first to final surgery cannot be calculated, #VALUE! will appear. If the number of days is negative, the date of final surgery has been entered as before the date of first surgery. All such cases should be checked. Cases with only 1 surgery (so first surgery equals final surgery) should display 0. |
| Check 6     | The invasive size of tumour should be less than or equal to the whole size.                                                                                                                                                                                                                                                           |
| Checks 7-16 | Checks are embedded into the spreadsheet to ensure that the following items can be calculated for all cases; pre-operative diagnosis, type of pre-operative procedure, number of operations, number of nodes, number of positive nodes,                                                                                               |

nodal status, and size bands. All checks should be examined, in particular nodal status and size bands, to ensure that the spreadsheet is picking up the data correctly.

**Caseload Check** In the screening surgical caseload audit, the total number of cancers should equal the total caseload plus the total number of women with no surgery minus the total number of women treated by two surgeons. This formula is different if any woman is treated by more than 2 surgeons.

The regional QA Coordinator must ensure that the data checks are satisfactory, that only valid codes have been entered and that no blanks remain in any tables. Anomalies between columns, especially between operation type and node columns, should be identified and checked prior to submission of the audit to the WMCIU.

## **Queries**

Any queries about the ABS at BASO audit should be directed to:

Dr Jackie Walton  
Breast Screening QA Research and Information Manager  
West Midlands Cancer Intelligence Unit  
Public Health Building  
The University of Birmingham  
Birmingham  
B15 2TT

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Jackie.Walton@wmciu.nhs.uk  
qarc@wmciu.nhs.uk

**ABS AT BASO BREAST AUDIT 2002/03**

# PRELIMINARY DATA SHEET

[illegible]











Please fill in Part A first.

Cases with no surgery (NS) should appear on the top line.

Cases treated by more than one surgeon should be counted in each surgeon's caseload. The number of such cases is needed for the Caseload Check.

[illegible]

### APPENDIX 3

#### **ABS AT AUDIT FOR WOMEN WITH SCREEN DETECTED BREAST CANCER BASO ADJUVANT DETECTED BETWEEN 1<sup>ST</sup> APRIL 2001 AND 31<sup>ST</sup> MARCH 2002**

**PLEASE SUPPLY DATA FOR WOMEN OF ALL AGES WITH SCREEN DETECTED  
BREAST CANCER WITH FIRST OFFERED APPOINTMENT FROM  
1<sup>ST</sup> APRIL 2001 TO 31<sup>ST</sup> MARCH 2002 INCLUSIVE  
ACCORDING TO THE REGIONAL BOUNDARIES EXTANT FROM 1<sup>ST</sup> APRIL 2003**

This document accompanies the MS Excel spreadsheet designed to record BASO breast audit adjuvant therapy data which has been prepared by the West Midlands Cancer Intelligence Unit (WMCIU). The spreadsheet contains data validation checks.

The BASO breast audit group expects the consultant surgeon to collect adjuvant therapy data for the list of cases supplied by the screening office or regional QA Reference Centre. The QA Co-ordinator will organise collation of these data. A box is provided for the signature of the surgeons to verify that these data are correct.

Data will be presented by region and unit (with only the region identified). The unique identifying number known as the "Sx" number is required for data validation and matching purposes. **Names, dates of birth and other identifiable data should not be sent by the QA Co-ordinator to the WMCIU.**

***The deadline for submission of regional data by the regional QA Co-ordinator  
to the WMCIU is 19<sup>th</sup> January 2004***

#### **DEFINITIONS AND GUIDANCE NOTES**

**Audit cut-off date:** If a woman has not received radiotherapy or chemotherapy or hormonal therapy before 31<sup>st</sup> March 2003 then it should be assumed for the purposes of this audit that she has not had this treatment. This cut off date allows at least 1 year follow up for all cases.

**Bilateral and multiple cancers:** The KC62 report only counts one cancer per woman. Cancers included in the BASO breast audit should be counted in the same way so that the number of cancers in the BASO breast audit equals the number counted on the KC62 report. If bilateral or multiple cancers have been detected the KC62 selects the worst prognosis cancer. If a non-invasive and an invasive tumour have been detected the KC62 report counts the invasive tumour only. The same rules should be applied for this audit.

**Diagnosis on radiological and/or clinical grounds only:** Cancers diagnosed with neither C5 nor B5 nor malignant diagnostic open biopsy should not be included in this audit.

**First surgery date:** The first surgery date given should be the first overall, whether this surgery was diagnostic or therapeutic.

**Reconstruction surgery:** Surgery which is only for the purpose of reconstruction should be excluded when calculating the date of final surgery.

**Surgery for benign conditions:** Surgery for benign conditions should be excluded when calculating the dates of first and final surgery.

## **MATCHING TO TUMOUR DATA**

The adjuvant data collected in this audit will be matched by the WMCIU to previously collected tumour data. In order to do this, the WMCIU must be advised of any changes in the region or anonymous unit code assigned to each screening unit's cases.

## **DATA CHECKS**

The following checks are included in the Excel spreadsheet

|                                          |                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Checks 1-4 (Assessment to Treatment)     | If the number of days from assessment to treatment (surgery, RT, CT, HT) cannot be calculated, #VALUE! will appear. If the number of days is negative, the date of treatment has been entered as before the date of assessment. All such cases should be checked.                                                                     |
| Check 5 (First surgery to final surgery) | If the number of days from first to final surgery cannot be calculated, #VALUE! will appear. If the number of days is negative, the date of final surgery has been entered as before the date of first surgery. All such cases should be checked. Cases with only 1 surgery (so first surgery equals final surgery) should display 0. |
| Data check Summary                       | Minima, maxima, average and quartiles of the number of days in each data check are provided in the spreadsheet.                                                                                                                                                                                                                       |

## **Queries**

Any queries about the adjuvant audit should be directed to:

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## APPENDIX 4

|                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ABS AT BASO SURVIVAL AUDIT FOR WOMEN WITH SCREEN DETECTED BREAST<br/>CANCER DETECTED BETWEEN 1<sup>ST</sup> APRIL 1992 AND 31<sup>ST</sup> MARCH 1998</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Aim:** To combine NHS Breast Screening Programme (NHSBSP) data for women with breast cancer detected by screening between 1<sup>st</sup> April 1992 – 31<sup>st</sup> March 1998 with data recorded by regional cancer registries to enable analysis of breast cancer survival for a period of up to 10 years post-diagnosis. Where tumour size, grade and nodal status are available the survival profiles according to prognostic characteristics will be examined. The audit will continue to demonstrate effective information exchange between the NHSBSP and regional cancer registries.

**Study population:** All women with breast cancer detected at screening with a date of first offered appointment between 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1998 should be included in the audit.

Core patient and tumour data for women detected at screening with a date of first offered appointment between 1<sup>st</sup> April 1997 and 31<sup>st</sup> March 1998 should be extracted from screening service computer systems and matched with records held by regional cancer registries. Screen detected cancers matched to recurrences at the cancer registry should be included in the audit, but flagged by the cancer registry so that they can be excluded from the survival analysis.

Data for cancers detected on screening between 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1997 have previously been collected from screening offices and matched to the cancer registry records. Lists of cases submitted in previous years should be checked to confirm that they accurately reflect past screening activity. Women may have been excluded in the past because they were under 45 or over 75 at diagnosis or because the cancer was not histologically verified or not registered as a primary tumour at the cancer registry. Duplicate cases may now be evident.

Cancer registries should identify deaths in women with breast cancer detected on screening between 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1998 prior to the end of study censor date of 31<sup>st</sup> March 2003. Each cancer registry should confirm that death data are complete to 31<sup>st</sup> March 2003, or provide an alternative date to which survival can be calculated.

**Data collection:** Two MS Excel spreadsheets have been designed by the West Midlands Cancer Intelligence Unit to record survival audit data. Copies of these spreadsheets have been provided to each Breast Screening Quality Assurance Reference Centre. QA Reference Centres should liaise with Cancer Registries to complete the survival audit spreadsheets:

- a spreadsheet to record data from screening offices and cancer registries for women with breast cancer detected on screening between 1<sup>st</sup> April 1997 and 31<sup>st</sup> March 1998 (SURVIVAL A.xls).
- a spreadsheet to update data from cancer registries for women with breast cancer detected on screening between 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1997 (SURVIVAL B.xls).

Lists of cases submitted in previous years are provided in spreadsheet SURVIVAL C.xls. Corrections to screening data can be submitted to the WMCIU if necessary. This could be in the same format as spreadsheet C or in another format, subject to the following rules.

- All corrections to previously submitted cases must be accompanied by the unique “SurvivalID” assigned by the WMCIU.
- The spreadsheet recording updated cancer registry data (Spreadsheet B) should include new and corrected cases.
- Cases for which corrections are not necessary should not be included in the list of corrections.

A paper representation of the format used in the spreadsheets is provided and may be used as the basis for a data collection form. Co-writer reports designed by Mrs Margot Wheaton may be used to collect data from screening offices that use the NBSS computer system.

**The completed spreadsheets should be submitted by the Breast Screening QA Reference Centre to the WMCIU by 26<sup>th</sup> September 2003.**

## DATA TO BE COLLECTED FROM SCREENING SERVICES AND COLLATED BY BREAST SCREENING QUALITY ASSURANCE REFERENCE CENTRES

For cases screen detected in 1997/98 the following data should be extracted from breast screening computer systems:

- Forename for use within region only
- Surname for use within region only
- NHS number for use within region only
- Address for use within region only
- Postcode for use within region only
- Date of birth (dd/mm/yyyy) necessary for age calculations
- Sx No. (Screening Office Number) for checking data and matching queries
- Date of first surgery (dd/mm/yyyy, NS, U) a proxy for date of diagnosis, and to help match cases at the cancer registry.
- Invasive status Invasive/Micro-Invasive/Non-Invasive/Unknown  
*For invasive cancers only (enter X if the case is not invasive):*
- Tumour size invasive size in mm, 'U' for unknown
- Tumour grade Bloom & Richardson I, II, III, NA or 'U' for unknown
- Total number of lymph nodes total number, 0 if no nodes obtained, 'U' if unknown  
*(new data item for 1997/98 cases)*
- Number of positive lymph nodes total number, 0 if node negative, 'U' if unknown

The region, screening unit and cancer registry should be added to each case.

## DATA TO BE COLLECTED FROM REGIONAL CANCER REGISTRIES

Regional cancer registries will be asked by the Breast Screening QA Reference Centres to match screen detected breast tumours detected by screening in 1997/98 with data held on the cancer registration systems using name, NHS number, address, postcode, date of birth, and date of first surgery (as a proxy for date of diagnosis). Regional cancer registries will also be asked to update data previously submitted for 1992-97 cases. Overall responsibility for regional data collection remains with the QA Co-ordinator.

**All requests for data should be submitted to the Cancer Registry by 18<sup>th</sup> August 2003.**

The following data items are required from the cancer registry for all breast tumours screen detected between 1<sup>st</sup> April 1992 and 31<sup>st</sup> March 1998.

- Registration number the unique registration number should be added. **For cases not registered indicate NR in the appropriate column. For cases matched to recurrences enter the primary tumour registration number and indicate R in the appropriate column.**
- Date of diagnosis dd/mm/yyyy (leave blank if unknown)
- Date of death dd/mm/yyyy (leave blank if no death)
- ICDM code morphology code e.g. 85003
- Cause of death code B= breast cancer,  
C = other cancer (ie. other than the screen detected tumour),  
N= non-cancer,  
U = unknown,  
X = Information not collected at cancer registry  
(leave blank if no death)
- Cause of death text for all deaths the actual cause of death should be entered e.g. for a

woman who died from pneumonia due to lung cancer (code 'C') the cause text should read 'lung'. For a woman who died from breast cancer metastases (code 'B') the text should read 'breast'.

The censor date for the audit has been set at **31<sup>st</sup> March 2003**. The cancer registry should confirm to the QA Reference Centre that death data are complete to 31<sup>st</sup> March 2003, or provide an alternative date to which survival time can be calculated.

**Cancer Registries should return these data to the appropriate QA Reference Centre by  
19<sup>th</sup> September 2003.**

## **DATA VALIDATION**

A number of data checks have been incorporated into the spreadsheet.

- |                            |                                                                                                                                                                                                                                                                                                                                         |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check 1 (Age at Diagnosis) | If the age at diagnosis cannot be calculated, #VALUE! will appear. If the age at diagnosis is negative, the date of diagnosis has been entered as before the date of birth. All such cases should be checked.                                                                                                                           |
| Check 2 (Invasive Status)  | If an invasive status has not been entered a prompt will appear in this column.                                                                                                                                                                                                                                                         |
| Check 3 (Survival Status)  | The survival status is whether the woman was alive or dead at the end of the audit period. If the survival status cannot be calculated, #VALUE! will appear. All such cases should be checked.                                                                                                                                          |
| Check 4 (Survival Time)    | The survival time is the number of complete years from diagnosis to death or the end of the study period, whichever is earlier. If the survival time cannot be calculated, #VALUE! will appear. If the survival time is negative, the date of death has been entered as before the date of diagnosis. All such cases should be checked. |
| Check 5 (Nodal Status)     | The nodal status is unknown if no axillary lymph nodes were obtained, or if it is unknown whether nodes were obtained. If the number of positive nodes is unknown, or greater than the number of nodes obtained, a check will appear. All such cases should be checked.                                                                 |

## **QUERIES**

Any queries about the survival audit should be directed to:

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## APPENDIX 5

### DATA FROM THE 2002/03 AUDIT OF SCREEN DETECTED BREAST CANCERS IN WOMEN ALL AGES FOR THE PERIOD 1<sup>ST</sup> APRIL 2002 – 31<sup>ST</sup> MARCH 2003

| Table 1 : Number and invasive status of screen detected breast cancers and total women screened |             |           |                |          |              |           |                |          |              |            |                      |                          |                      |
|-------------------------------------------------------------------------------------------------|-------------|-----------|----------------|----------|--------------|-----------|----------------|----------|--------------|------------|----------------------|--------------------------|----------------------|
| Region                                                                                          | Invasive    |           | Micro-invasive |          | Non-invasive |           | Status unknown |          | Total        |            | Total women screened | Non-invasive cancer rate | Invasive cancer rate |
|                                                                                                 | No          | %         | No             | %        | No           | %         | No             | %        | No           | %          |                      |                          |                      |
| N East, Yorks & Humber                                                                          | 1134        | 78        | 13             | 1        | 306          | 21        | 4              | 0        | 1457         | 100        | 202366               | 1.6                      | 5.6                  |
| East Midlands                                                                                   | 720         | 77        | 17             | 2        | 192          | 21        | 1              | 0        | 930          | 100        | 123655               | 1.7                      | 5.8                  |
| East of England                                                                                 | 954         | 77        | 4              | 0        | 262          | 21        | 25             | 2        | 1245         | 100        | 163415               | 1.6                      | 5.8                  |
| London                                                                                          | 862         | 76        | 14             | 1        | 260          | 23        | 3              | 0        | 1139         | 100        | 155277               | 1.8                      | 5.6                  |
| South East (East)                                                                               | 652         | 76        | 11             | 1        | 196          | 23        | 4              | 0        | 863          | 100        | 122588               | 1.7                      | 5.3                  |
| South East (West)                                                                               | 596         | 81        | 7              | 1        | 135          | 18        | 0              | 0        | 738          | 100        | 110014               | 1.3                      | 5.4                  |
| South West                                                                                      | 849         | 81        | 3              | 0        | 198          | 19        | 3              | 0        | 1053         | 100        | 130823               | 1.5                      | 6.5                  |
| West Midlands                                                                                   | 811         | 78        | 11             | 1        | 210          | 20        | 2              | 0        | 1034         | 100        | 149252               | 1.5                      | 5.4                  |
| North West                                                                                      | 1141        | 81        | 16             | 1        | 244          | 17        | 2              | 0        | 1403         | 100        | 190004               | 1.4                      | 6.0                  |
| Wales                                                                                           | 532         | 81        | 8              | 1        | 120          | 18        | 0              | 0        | 660          | 100        | 78354                | 1.6                      | 6.8                  |
| Northern Ireland                                                                                | 163         | 75        | 3              | 1        | 49           | 23        | 1              | 0        | 216          | 100        | 31705                | 1.6                      | 5.1                  |
| Scotland                                                                                        | 672         | 79        | 7              | 1        | 176          | 21        | 0              | 0        | 855          | 100        | 124816               | 1.5                      | 5.4                  |
| <b>United Kingdom</b>                                                                           | <b>9086</b> | <b>78</b> | <b>114</b>     | <b>1</b> | <b>2348</b>  | <b>20</b> | <b>45</b>      | <b>0</b> | <b>11593</b> | <b>100</b> | <b>1582269</b>       | <b>1.6</b>               | <b>5.7</b>           |

| Table 2 : Age at screening appointment |            |          |             |           |             |           |            |          |              |  |
|----------------------------------------|------------|----------|-------------|-----------|-------------|-----------|------------|----------|--------------|--|
| Region                                 | <50        |          | 50-64       |           | 65-70       |           | >70        |          | Total        |  |
|                                        | No         | %        | No          | %         | No          | %         | No         | %        |              |  |
| N East, Yorks & Humber                 | 31         | 2        | 1189        | 82        | 183         | 13        | 54         | 4        | 1457         |  |
| East Midlands                          | 15         | 2        | 737         | 79        | 145         | 16        | 33         | 4        | 930          |  |
| East of England                        | 8          | 1        | 1001        | 80        | 171         | 14        | 65         | 5        | 1245         |  |
| London                                 | 22         | 2        | 937         | 82        | 128         | 11        | 52         | 5        | 1139         |  |
| South East (East)                      | 19         | 2        | 694         | 80        | 115         | 13        | 35         | 4        | 863          |  |
| South East (West)                      | 16         | 2        | 604         | 82        | 73          | 10        | 45         | 6        | 738          |  |
| South West                             | 13         | 1        | 835         | 79        | 140         | 13        | 65         | 6        | 1053         |  |
| West Midlands                          | 27         | 3        | 812         | 79        | 171         | 17        | 24         | 2        | 1034         |  |
| North West                             | 37         | 3        | 1099        | 78        | 217         | 15        | 50         | 4        | 1403         |  |
| Wales                                  | 11         | 2        | 522         | 79        | 79          | 12        | 48         | 7        | 660          |  |
| Northern Ireland                       | 4          | 2        | 197         | 91        | 12          | 6         | 3          | 1        | 216          |  |
| Scotland                               | 1          | 0        | 716         | 84        | 97          | 11        | 41         | 5        | 855          |  |
| <b>United Kingdom</b>                  | <b>204</b> | <b>2</b> | <b>9343</b> | <b>81</b> | <b>1531</b> | <b>13</b> | <b>515</b> | <b>4</b> | <b>11593</b> |  |

| Table 3 : Cancers diagnosed on radiological/clinical grounds only |                                                       |                                                         |             |
|-------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------|-------------|
| Region                                                            | Total cancers including radiological/clinical cancers | Cancers diagnosed on radiological/clinical grounds only |             |
|                                                                   |                                                       | No                                                      | %           |
| N East, Yorks & Humber                                            | 1457                                                  | 0                                                       | 0.00        |
| East Midlands                                                     | 930                                                   | 0                                                       | 0.00        |
| East of England                                                   | 1246                                                  | 1                                                       | 0.08        |
| London                                                            | 1142                                                  | 3                                                       | 0.26        |
| South East (East)                                                 | 863                                                   | 0                                                       | 0.00        |
| South East (West)                                                 | 739                                                   | 1                                                       | 0.14        |
| South West                                                        | 1055                                                  | 2                                                       | 0.19        |
| West Midlands                                                     | 1036                                                  | 2                                                       | 0.19        |
| North West                                                        | 1403                                                  | 0                                                       | 0.00        |
| Wales                                                             | 661                                                   | 1                                                       | 0.15        |
| Northern Ireland                                                  | 216                                                   | 0                                                       | 0.00        |
| Scotland                                                          | 855                                                   | 0                                                       | 0.00        |
| <b>United Kingdom</b>                                             | <b>11603</b>                                          | <b>10</b>                                               | <b>0.09</b> |

| Table 4 : Pre-operative diagnosis rate |               |             |           |            |          |             |           |                              |           |
|----------------------------------------|---------------|-------------|-----------|------------|----------|-------------|-----------|------------------------------|-----------|
| Region                                 | Total cancers | C5 only     |           | C5 & B5    |          | B5 only     |           | Pre-operative diagnosis rate |           |
|                                        |               | No          | %         | No         | %        | No          | %         | No                           | %         |
| N East, Yorks & Humber                 | 1457          | 214         | 15        | 128        | 9        | 997         | 68        | 1339                         | 92        |
| East Midlands                          | 930           | 96          | 10        | 21         | 2        | 758         | 82        | 875                          | 94        |
| East of England                        | 1245          | 143         | 11        | 150        | 12       | 846         | 68        | 1139                         | 91        |
| London                                 | 1139          | 59          | 5         | 62         | 5        | 910         | 80        | 1031                         | 91        |
| South East (East)                      | 863           | 102         | 12        | 50         | 6        | 627         | 73        | 779                          | 90        |
| South East (West)                      | 738           | 92          | 12        | 21         | 3        | 550         | 75        | 663                          | 90        |
| South West                             | 1053          | 50          | 5         | 20         | 2        | 897         | 85        | 967                          | 92        |
| West Midlands                          | 1034          | 80          | 8         | 33         | 3        | 835         | 81        | 948                          | 92        |
| North West                             | 1403          | 221         | 16        | 41         | 3        | 991         | 71        | 1253                         | 89        |
| Wales                                  | 660           | 10          | 2         | 22         | 3        | 578         | 88        | 610                          | 92        |
| Northern Ireland                       | 216           | 65          | 30        | 44         | 20       | 83          | 38        | 192                          | 89        |
| Scotland                               | 855           | 73          | 9         | 336        | 39       | 370         | 43        | 779                          | 91        |
| <b>United Kingdom</b>                  | <b>11593</b>  | <b>1205</b> | <b>10</b> | <b>928</b> | <b>8</b> | <b>8442</b> | <b>73</b> | <b>10575</b>                 | <b>91</b> |

| Table 5 : Pre-operative diagnosis rate (invasive cancers) |               |             |           |            |          |             |           |                              |           |
|-----------------------------------------------------------|---------------|-------------|-----------|------------|----------|-------------|-----------|------------------------------|-----------|
| Region                                                    | Total cancers | C5 only     |           | C5 & B5    |          | B5 only     |           | Pre-operative diagnosis rate |           |
|                                                           |               | No          | %         | No         | %        | No          | %         | No                           | %         |
| N East, Yorks & Humber                                    | 1134          | 193         | 17        | 105        | 9        | 788         | 69        | 1086                         | 96        |
| East Midlands                                             | 720           | 94          | 13        | 19         | 3        | 584         | 81        | 697                          | 97        |
| East of England                                           | 954           | 133         | 14        | 130        | 14       | 638         | 67        | 901                          | 94        |
| London                                                    | 862           | 49          | 6         | 56         | 6        | 709         | 82        | 814                          | 94        |
| South East (East)                                         | 652           | 96          | 15        | 46         | 7        | 484         | 74        | 626                          | 96        |
| South East (West)                                         | 596           | 91          | 15        | 20         | 3        | 442         | 74        | 553                          | 93        |
| South West                                                | 849           | 46          | 5         | 20         | 2        | 746         | 88        | 812                          | 96        |
| West Midlands                                             | 811           | 72          | 9         | 30         | 4        | 676         | 83        | 778                          | 96        |
| North West                                                | 1141          | 214         | 19        | 38         | 3        | 808         | 71        | 1060                         | 93        |
| Wales                                                     | 532           | 8           | 2         | 22         | 4        | 480         | 90        | 510                          | 96        |
| Northern Ireland                                          | 163           | 62          | 38        | 38         | 23       | 55          | 34        | 155                          | 95        |
| Scotland                                                  | 672           | 68          | 10        | 296        | 44       | 285         | 42        | 649                          | 97        |
| <b>United Kingdom</b>                                     | <b>9086</b>   | <b>1126</b> | <b>12</b> | <b>820</b> | <b>9</b> | <b>6695</b> | <b>74</b> | <b>8641</b>                  | <b>95</b> |

| Table 6 : Pre-operative diagnosis rate (non-invasive cancers) |               |           |          |           |          |             |           |                              |           |
|---------------------------------------------------------------|---------------|-----------|----------|-----------|----------|-------------|-----------|------------------------------|-----------|
| Region                                                        | Total cancers | C5 only   |          | C5 & B5   |          | B5 only     |           | Pre-operative diagnosis rate |           |
|                                                               |               | No        | %        | No        | %        | No          | %         | No                           | %         |
| N East, Yorks & Humber                                        | 306           | 18        | 6        | 22        | 7        | 196         | 64        | 236                          | 77        |
| East Midlands                                                 | 192           | 2         | 1        | 2         | 1        | 156         | 81        | 160                          | 83        |
| East of England                                               | 262           | 7         | 3        | 17        | 6        | 188         | 72        | 212                          | 81        |
| London                                                        | 260           | 8         | 3        | 6         | 2        | 188         | 72        | 202                          | 78        |
| South East (East)                                             | 196           | 3         | 2        | 3         | 2        | 135         | 69        | 141                          | 72        |
| South East (West)                                             | 135           | 1         | 1        | 1         | 1        | 101         | 75        | 103                          | 76        |
| South West                                                    | 198           | 3         | 2        | 0         | 0        | 147         | 74        | 150                          | 76        |
| West Midlands                                                 | 210           | 6         | 3        | 2         | 1        | 150         | 71        | 158                          | 75        |
| North West                                                    | 244           | 6         | 2        | 2         | 1        | 169         | 69        | 177                          | 73        |
| Wales                                                         | 120           | 2         | 2        | 0         | 0        | 90          | 75        | 92                           | 77        |
| Northern Ireland                                              | 49            | 3         | 6        | 5         | 10       | 25          | 51        | 33                           | 67        |
| Scotland                                                      | 176           | 5         | 3        | 38        | 22       | 81          | 46        | 124                          | 70        |
| <b>United Kingdom</b>                                         | <b>2348</b>   | <b>64</b> | <b>3</b> | <b>98</b> | <b>4</b> | <b>1626</b> | <b>69</b> | <b>1788</b>                  | <b>76</b> |

| Table 7 : Invasive status of the diagnostic core biopsy |             |                    |           |                |           |                      |          |            |          |
|---------------------------------------------------------|-------------|--------------------|-----------|----------------|-----------|----------------------|----------|------------|----------|
| Region                                                  | Total       | B5a (Non-invasive) |           | B5b (Invasive) |           | B5c (Not assessable) |          | Unknown    |          |
|                                                         |             | No                 | %         | No             | %         | No                   | %        | No         | %        |
| N East, Yorks & Humber                                  | 1125        | 285                | 25        | 828            | 74        | 0                    | 0        | 12         | 1        |
| East Midlands                                           | 779         | 202                | 26        | 576            | 74        | 1                    | 0        | 0          | 0        |
| East of England                                         | 996         | 239                | 24        | 679            | 68        | 3                    | 0        | 75         | 8        |
| London                                                  | 972         | 250                | 26        | 699            | 72        | 9                    | 1        | 14         | 1        |
| South East (East)                                       | 677         | 181                | 27        | 493            | 73        | 0                    | 0        | 3          | 0        |
| South East (West)                                       | 571         | 144                | 25        | 420            | 74        | 6                    | 1        | 1          | 0        |
| South West                                              | 917         | 215                | 23        | 698            | 76        | 0                    | 0        | 4          | 0        |
| West Midlands                                           | 868         | 209                | 24        | 659            | 76        | 0                    | 0        | 0          | 0        |
| North West                                              | 1032        | 225                | 22        | 783            | 76        | 2                    | 0        | 22         | 2        |
| Wales                                                   | 600         | 138                | 23        | 460            | 77        | 2                    | 0        | 0          | 0        |
| Northern Ireland                                        | 127         | 45                 | 35        | 75             | 59        | 0                    | 0        | 7          | 6        |
| Scotland                                                | 706         | 141                | 20        | 551            | 78        | 0                    | 0        | 14         | 2        |
| <b>United Kingdom</b>                                   | <b>9370</b> | <b>2274</b>        | <b>24</b> | <b>6921</b>    | <b>74</b> | <b>23</b>            | <b>0</b> | <b>152</b> | <b>2</b> |

| Table 8 : B5a (Non-invasive) core biopsy: histological invasive status after surgery |            |           |                |          |              |           |            |          |                |          |             |            |
|--------------------------------------------------------------------------------------|------------|-----------|----------------|----------|--------------|-----------|------------|----------|----------------|----------|-------------|------------|
| Region                                                                               | Invasive   |           | Micro-invasive |          | Non-invasive |           | No surgery |          | Unknown status |          | Total       |            |
|                                                                                      | No         | %         | No             | %        | No           | %         | No         | %        | No             | %        | No          | %          |
| N East, Yorks & Humber                                                               | 69         | 24        | 12             | 4        | 201          | 71        | 3          | 1        | 0              | 0        | 285         | 100        |
| East Midlands                                                                        | 32         | 16        | 14             | 7        | 154          | 76        | 2          | 1        | 0              | 0        | 202         | 100        |
| East of England                                                                      | 45         | 19        | 1              | 0        | 180          | 75        | 4          | 2        | 9              | 4        | 239         | 100        |
| London                                                                               | 67         | 27        | 10             | 4        | 167          | 67        | 6          | 2        | 0              | 0        | 250         | 100        |
| South East (East)                                                                    | 37         | 20        | 7              | 4        | 132          | 73        | 5          | 3        | 0              | 0        | 181         | 100        |
| South East (West)                                                                    | 36         | 25        | 7              | 5        | 100          | 69        | 1          | 1        | 0              | 0        | 144         | 100        |
| South West                                                                           | 67         | 31        | 2              | 1        | 144          | 67        | 2          | 1        | 0              | 0        | 215         | 100        |
| West Midlands                                                                        | 50         | 24        | 9              | 4        | 148          | 71        | 2          | 1        | 0              | 0        | 209         | 100        |
| North West                                                                           | 58         | 26        | 13             | 6        | 151          | 67        | 2          | 1        | 1              | 0        | 225         | 100        |
| Wales                                                                                | 45         | 33        | 6              | 4        | 85           | 62        | 2          | 1        | 0              | 0        | 138         | 100        |
| Northern Ireland                                                                     | 17         | 38        | 2              | 4        | 26           | 58        | 0          | 0        | 0              | 0        | 45          | 100        |
| Scotland                                                                             | 25         | 18        | 4              | 3        | 112          | 79        | 0          | 0        | 0              | 0        | 141         | 100        |
| <b>United Kingdom</b>                                                                | <b>548</b> | <b>24</b> | <b>87</b>      | <b>4</b> | <b>1600</b>  | <b>70</b> | <b>29</b>  | <b>1</b> | <b>10</b>      | <b>0</b> | <b>2274</b> | <b>100</b> |

| Table 9 : B5b (Invasive) core biopsy: histological invasive status after surgery |             |           |                |          |              |          |            |          |                |          |             |            |
|----------------------------------------------------------------------------------|-------------|-----------|----------------|----------|--------------|----------|------------|----------|----------------|----------|-------------|------------|
| Region                                                                           | Invasive    |           | Micro-invasive |          | Non-invasive |          | No surgery |          | Unknown status |          | Total       |            |
|                                                                                  | No          | %         | No             | %        | No           | %        | No         | %        | No             | %        | No          | %          |
| N East, Yorks & Humber                                                           | 802         | 97        | 0              | 0        | 8            | 1        | 17         | 2        | 1              | 0        | 828         | 100        |
| East Midlands                                                                    | 557         | 97        | 3              | 1        | 2            | 0        | 14         | 2        | 0              | 0        | 576         | 100        |
| East of England                                                                  | 656         | 97        | 1              | 0        | 6            | 1        | 13         | 2        | 3              | 0        | 679         | 100        |
| London                                                                           | 666         | 95        | 0              | 0        | 17           | 2        | 16         | 2        | 0              | 0        | 699         | 100        |
| South East (East)                                                                | 485         | 98        | 0              | 0        | 2            | 0        | 6          | 1        | 0              | 0        | 493         | 100        |
| South East (West)                                                                | 418         | 100       | 0              | 0        | 0            | 0        | 2          | 0        | 0              | 0        | 420         | 100        |
| South West                                                                       | 690         | 99        | 0              | 0        | 1            | 0        | 7          | 1        | 0              | 0        | 698         | 100        |
| West Midlands                                                                    | 651         | 99        | 1              | 0        | 2            | 0        | 5          | 1        | 0              | 0        | 659         | 100        |
| North West                                                                       | 758         | 97        | 0              | 0        | 13           | 2        | 11         | 1        | 1              | 0        | 783         | 100        |
| Wales                                                                            | 451         | 98        | 2              | 0        | 3            | 1        | 4          | 1        | 0              | 0        | 460         | 100        |
| Northern Ireland                                                                 | 71          | 95        | 0              | 0        | 4            | 5        | 0          | 0        | 0              | 0        | 75          | 100        |
| Scotland                                                                         | 538         | 98        | 1              | 0        | 3            | 1        | 9          | 2        | 0              | 0        | 551         | 100        |
| <b>United Kingdom</b>                                                            | <b>6743</b> | <b>97</b> | <b>8</b>       | <b>0</b> | <b>61</b>    | <b>1</b> | <b>104</b> | <b>2</b> | <b>5</b>       | <b>0</b> | <b>6921</b> | <b>100</b> |

| Table 10 : Invasive status of cancers diagnosed by C5 only |             |             |           |                |          |              |          |                |          |
|------------------------------------------------------------|-------------|-------------|-----------|----------------|----------|--------------|----------|----------------|----------|
| Region                                                     | Total       | Invasive    |           | Micro-invasive |          | Non-invasive |          | Status unknown |          |
|                                                            |             | No.         | %         | No.            | %        | No.          | %        | No.            | %        |
| N East, Yorks & Humber                                     | 214         | 193         | 90        | 1              | 0        | 18           | 8        | 2              | 1        |
| East Midlands                                              | 96          | 94          | 98        | 0              | 0        | 2            | 2        | 0              | 0        |
| East of England                                            | 143         | 133         | 93        | 0              | 0        | 7            | 5        | 3              | 2        |
| London                                                     | 59          | 49          | 83        | 2              | 3        | 8            | 14       | 0              | 0        |
| South East (East)                                          | 102         | 96          | 94        | 1              | 1        | 3            | 3        | 2              | 2        |
| South East (West)                                          | 92          | 91          | 99        | 0              | 0        | 1            | 1        | 0              | 0        |
| South West                                                 | 50          | 46          | 92        | 0              | 0        | 3            | 6        | 1              | 2        |
| West Midlands                                              | 80          | 72          | 90        | 0              | 0        | 6            | 8        | 2              | 3        |
| North West                                                 | 221         | 214         | 97        | 1              | 0        | 6            | 3        | 0              | 0        |
| Wales                                                      | 10          | 8           | 80        | 0              | 0        | 2            | 20       | 0              | 0        |
| Northern Ireland                                           | 65          | 62          | 95        | 0              | 0        | 3            | 5        | 0              | 0        |
| Scotland                                                   | 73          | 68          | 93        | 0              | 0        | 5            | 7        | 0              | 0        |
| <b>United Kingdom</b>                                      | <b>1205</b> | <b>1126</b> | <b>93</b> | <b>5</b>       | <b>0</b> | <b>64</b>    | <b>5</b> | <b>10</b>      | <b>1</b> |

| Table 11 : Number of visits for cytology/core biopsy for all cancers |           |          |             |           |             |           |           |          |            |          |              |            |                                |           |
|----------------------------------------------------------------------|-----------|----------|-------------|-----------|-------------|-----------|-----------|----------|------------|----------|--------------|------------|--------------------------------|-----------|
| Region                                                               | 0         |          | 1           |           | 2           |           | 3+        |          | Unknown    |          | Total        |            | Repeat (2+) visit for core/cyt |           |
|                                                                      | No.       | %        | No.         | %         | No.         | %         | No.       | %        | No.        | %        | No.          | %          | No.                            | %         |
| N East, Yorks & Humber                                               | 1         | 0        | 1290        | 89        | 162         | 11        | 4         | 0        | 0          | 0        | 1457         | 100        | 166                            | 11        |
| East Midlands                                                        | 5         | 1        | 815         | 88        | 103         | 11        | 7         | 1        | 0          | 0        | 930          | 100        | 110                            | 12        |
| East of England                                                      | 1         | 0        | 683         | 55        | 138         | 11        | 14        | 1        | 409        | 33       | 1245         | 100        | 152                            | 12        |
| London                                                               | 0         | 0        | 1035        | 91        | 97          | 9         | 7         | 1        | 0          | 0        | 1139         | 100        | 104                            | 9         |
| South East (East)                                                    | 0         | 0        | 683         | 79        | 162         | 19        | 18        | 2        | 0          | 0        | 863          | 100        | 180                            | 21        |
| South East (West)                                                    | 7         | 1        | 631         | 86        | 91          | 12        | 9         | 1        | 0          | 0        | 738          | 100        | 100                            | 14        |
| South West                                                           | 5         | 0        | 888         | 84        | 150         | 14        | 9         | 1        | 1          | 0        | 1053         | 100        | 159                            | 15        |
| West Midlands                                                        | 6         | 1        | 929         | 90        | 95          | 9         | 4         | 0        | 0          | 0        | 1034         | 100        | 99                             | 10        |
| North West                                                           | 6         | 0        | 1192        | 85        | 199         | 14        | 5         | 0        | 1          | 0        | 1403         | 100        | 204                            | 15        |
| Wales                                                                | 5         | 1        | 619         | 94        | 35          | 5         | 1         | 0        | 0          | 0        | 660          | 100        | 36                             | 5         |
| Northern Ireland                                                     | 0         | 0        | 203         | 94        | 10          | 5         | 2         | 1        | 1          | 0        | 216          | 100        | 12                             | 6         |
| Scotland                                                             | 5         | 1        | 732         | 86        | 115         | 13        | 3         | 0        | 0          | 0        | 855          | 100        | 118                            | 14        |
| <b>United Kingdom</b>                                                | <b>41</b> | <b>0</b> | <b>9700</b> | <b>84</b> | <b>1357</b> | <b>12</b> | <b>83</b> | <b>1</b> | <b>412</b> | <b>4</b> | <b>11593</b> | <b>100</b> | <b>1440</b>                    | <b>12</b> |

| Table 12 : Average number of visits |              |            |          |          |          |
|-------------------------------------|--------------|------------|----------|----------|----------|
| Region                              | Total        | Mean       | Min      | Median   | Max      |
| N East, Yorks & Humber              | 1457         | 1.1        | 0        | 1        | 3        |
| East Midlands                       | 930          | 1.1        | 0        | 1        | 4        |
| East of England                     | 1245         | 1.2        | 0        | 1        | 4        |
| London                              | 1139         | 1.1        | 1        | 1        | 3        |
| South East (East)                   | 863          | 1.2        | 1        | 1        | 4        |
| South East (West)                   | 738          | 1.1        | 0        | 1        | 4        |
| South West                          | 1053         | 1.2        | 0        | 1        | 5        |
| West Midlands                       | 1034         | 1.1        | 0        | 1        | 3        |
| North West                          | 1403         | 1.1        | 0        | 1        | 4        |
| Wales                               | 660          | 1.0        | 0        | 1        | 3        |
| Northern Ireland                    | 216          | 1.1        | 1        | 1        | 3        |
| Scotland                            | 855          | 1.1        | 0        | 1        | 3        |
| <b>United Kingdom</b>               | <b>11593</b> | <b>1.1</b> | <b>0</b> | <b>1</b> | <b>5</b> |

| Table 13 : Pre-operative diagnosis rate compared to C5 and/or B5 at first visit |             |           |                         |           |              |            |
|---------------------------------------------------------------------------------|-------------|-----------|-------------------------|-----------|--------------|------------|
| Region                                                                          | 1 C5/B5     |           | Pre-operative diagnosis |           | All cancers  |            |
|                                                                                 | No.         | %         | No.                     | %         | No.          | %          |
| N East, Yorks & Humber                                                          | 1207        | 83        | 1339                    | 92        | 1457         | 100        |
| East Midlands                                                                   | 781         | 84        | 875                     | 94        | 930          | 100        |
| East of England*                                                                | 629         | 51        | 1139                    | 91        | 1245         | 100        |
| London                                                                          | 943         | 83        | 1031                    | 91        | 1139         | 100        |
| South East (East)                                                               | 644         | 75        | 779                     | 90        | 863          | 100        |
| South East (West)                                                               | 581         | 79        | 663                     | 90        | 738          | 100        |
| South West                                                                      | 822         | 78        | 967                     | 92        | 1053         | 100        |
| West Midlands                                                                   | 866         | 84        | 948                     | 92        | 1034         | 100        |
| North West                                                                      | 1092        | 78        | 1253                    | 89        | 1403         | 100        |
| Wales                                                                           | 578         | 88        | 610                     | 92        | 660          | 100        |
| Northern Ireland                                                                | 183         | 85        | 192                     | 89        | 216          | 100        |
| Scotland                                                                        | 677         | 79        | 779                     | 91        | 855          | 100        |
| <b>United Kingdom</b>                                                           | <b>9003</b> | <b>78</b> | <b>10575</b>            | <b>91</b> | <b>11593</b> | <b>100</b> |

\*Results affected by data completeness.

| Table 14 : Status of diagnostic open biopsies |             |           |             |           |             |            |                      |                    |                       |
|-----------------------------------------------|-------------|-----------|-------------|-----------|-------------|------------|----------------------|--------------------|-----------------------|
| Region                                        | Benign      |           | Malignant   |           | Total       |            | Total women screened | Benign biopsy rate | Malignant biopsy rate |
|                                               | No.         | %         | No.         | %         | No.         | %          |                      |                    |                       |
| N East, Yorks & Humber                        | 245         | 67        | 118         | 33        | 363         | 100        | 202366               | 1.21               | 0.58                  |
| East Midlands                                 | 126         | 70        | 55          | 30        | 181         | 100        | 123655               | 1.02               | 0.44                  |
| East of England                               | 243         | 70        | 106         | 30        | 349         | 100        | 163415               | 1.49               | 0.65                  |
| London                                        | 167         | 61        | 108         | 39        | 275         | 100        | 155277               | 1.08               | 0.70                  |
| South East (East)                             | 128         | 60        | 84          | 40        | 212         | 100        | 122588               | 1.04               | 0.69                  |
| South East (West)                             | 119         | 61        | 75          | 39        | 194         | 100        | 110014               | 1.08               | 0.68                  |
| South West                                    | 169         | 66        | 86          | 34        | 255         | 100        | 130823               | 1.29               | 0.66                  |
| West Midlands                                 | 191         | 69        | 86          | 31        | 277         | 100        | 149252               | 1.28               | 0.58                  |
| North West                                    | 241         | 62        | 150         | 38        | 391         | 100        | 190004               | 1.27               | 0.79                  |
| Wales                                         | 101         | 67        | 50          | 33        | 151         | 100        | 78354                | 1.29               | 0.64                  |
| Northern Ireland                              | 34          | 59        | 24          | 41        | 58          | 100        | 31705                | 1.07               | 0.76                  |
| Scotland                                      | 137         | 64        | 76          | 36        | 213         | 100        | 124816               | 1.10               | 0.61                  |
| <b>United Kingdom</b>                         | <b>1901</b> | <b>65</b> | <b>1018</b> | <b>35</b> | <b>2919</b> | <b>100</b> | <b>1582269</b>       | <b>1.20</b>        | <b>0.64</b>           |

| Table 15 : Invasive status of malignant diagnostic open biopsies |                               |            |           |                |          |              |           |                |          |
|------------------------------------------------------------------|-------------------------------|------------|-----------|----------------|----------|--------------|-----------|----------------|----------|
| Region                                                           | Total malignant open biopsies | Invasive   |           | Micro-invasive |          | Non-invasive |           | Status unknown |          |
|                                                                  |                               | No.        | %         | No.            | %        | No.          | %         | No.            | %        |
| N East, Yorks & Humber                                           | 118                           | 48         | 41        | 0              | 0        | 70           | 59        | 0              | 0        |
| East Midlands                                                    | 55                            | 23         | 42        | 0              | 0        | 32           | 58        | 0              | 0        |
| East of England                                                  | 106                           | 53         | 50        | 2              | 2        | 50           | 47        | 1              | 1        |
| London                                                           | 108                           | 48         | 44        | 2              | 2        | 58           | 54        | 0              | 0        |
| South East (East)                                                | 84                            | 26         | 31        | 3              | 4        | 55           | 65        | 0              | 0        |
| South East (West)                                                | 75                            | 43         | 57        | 0              | 0        | 32           | 43        | 0              | 0        |
| South West                                                       | 86                            | 37         | 43        | 1              | 1        | 48           | 56        | 0              | 0        |
| West Midlands                                                    | 86                            | 33         | 38        | 1              | 1        | 52           | 60        | 0              | 0        |
| North West                                                       | 150                           | 81         | 54        | 2              | 1        | 67           | 45        | 0              | 0        |
| Wales                                                            | 50                            | 22         | 44        | 0              | 0        | 28           | 56        | 0              | 0        |
| Northern Ireland                                                 | 24                            | 8          | 33        | 0              | 0        | 16           | 67        | 0              | 0        |
| Scotland                                                         | 76                            | 23         | 30        | 1              | 1        | 52           | 68        | 0              | 0        |
| <b>United Kingdom</b>                                            | <b>1018</b>                   | <b>445</b> | <b>44</b> | <b>12</b>      | <b>1</b> | <b>560</b>   | <b>55</b> | <b>1</b>       | <b>0</b> |

| Table 16 : Pre-operative history for invasive cancers diagnosed by open biopsy |                               |                             |          |               |           |                  |           |                               |           |
|--------------------------------------------------------------------------------|-------------------------------|-----------------------------|----------|---------------|-----------|------------------|-----------|-------------------------------|-----------|
| Region                                                                         | Total malignant open biopsies | No pre-operative procedures |          | Cytology only |           | Core biopsy only |           | Both cytology and core biopsy |           |
|                                                                                |                               | No.                         | %        | No.           | %         | No.              | %         | No.                           | %         |
| N East, Yorks & Humber                                                         | 48                            | 3                           | 6        | 3             | 6         | 26               | 54        | 16                            | 33        |
| East Midlands                                                                  | 23                            | 2                           | 9        | 1             | 4         | 13               | 57        | 7                             | 30        |
| East of England                                                                | 53                            | 3                           | 6        | 16            | 30        | 20               | 38        | 14                            | 26        |
| London                                                                         | 48                            | 1                           | 2        | 7             | 15        | 31               | 65        | 9                             | 19        |
| South East (East)                                                              | 26                            | 1                           | 4        | 4             | 15        | 14               | 54        | 7                             | 27        |
| South East (West)                                                              | 43                            | 4                           | 9        | 8             | 19        | 24               | 56        | 7                             | 16        |
| South West                                                                     | 37                            | 5                           | 14       | 4             | 11        | 23               | 62        | 5                             | 14        |
| West Midlands                                                                  | 33                            | 3                           | 9        | 4             | 12        | 23               | 70        | 3                             | 9         |
| North West                                                                     | 81                            | 6                           | 7        | 22            | 27        | 40               | 49        | 13                            | 16        |
| Wales                                                                          | 22                            | 3                           | 14       | 0             | 0         | 19               | 86        | 0                             | 0         |
| Northern Ireland                                                               | 8                             | 0                           | 0        | 0             | 0         | 4                | 50        | 4                             | 50        |
| Scotland                                                                       | 23                            | 5                           | 22       | 2             | 9         | 7                | 30        | 9                             | 39        |
| <b>United Kingdom</b>                                                          | <b>445</b>                    | <b>36</b>                   | <b>8</b> | <b>71</b>     | <b>16</b> | <b>244</b>       | <b>55</b> | <b>94</b>                     | <b>21</b> |

| Table 17 : Pre-operative history for non-invasive cancers diagnosed by open biopsy |                               |                             |          |               |          |                  |           |                               |           |
|------------------------------------------------------------------------------------|-------------------------------|-----------------------------|----------|---------------|----------|------------------|-----------|-------------------------------|-----------|
| Region                                                                             | Total malignant open biopsies | No pre-operative procedures |          | Cytology only |          | Core biopsy only |           | Both cytology and core biopsy |           |
|                                                                                    |                               | No.                         | %        | No.           | %        | No.              | %         | No.                           | %         |
| N East, Yorks & Humber                                                             | 70                            | 0                           | 0        | 2             | 3        | 55               | 79        | 13                            | 19        |
| East Midlands                                                                      | 32                            | 3                           | 9        | 0             | 0        | 28               | 88        | 1                             | 3         |
| East of England                                                                    | 50                            | 1                           | 2        | 1             | 2        | 30               | 60        | 18                            | 36        |
| London                                                                             | 58                            | 1                           | 2        | 4             | 7        | 46               | 79        | 7                             | 12        |
| South East (East)                                                                  | 55                            | 1                           | 2        | 1             | 2        | 50               | 91        | 3                             | 5         |
| South East (West)                                                                  | 32                            | 3                           | 9        | 0             | 0        | 27               | 84        | 2                             | 6         |
| South West                                                                         | 48                            | 1                           | 2        | 2             | 4        | 42               | 88        | 3                             | 6         |
| West Midlands                                                                      | 52                            | 3                           | 6        | 0             | 0        | 48               | 92        | 1                             | 2         |
| North West                                                                         | 67                            | 0                           | 0        | 2             | 3        | 57               | 85        | 8                             | 12        |
| Wales                                                                              | 28                            | 2                           | 7        | 1             | 4        | 24               | 86        | 1                             | 4         |
| Northern Ireland                                                                   | 16                            | 0                           | 0        | 4             | 25       | 5                | 31        | 7                             | 44        |
| Scotland                                                                           | 52                            | 2                           | 4        | 1             | 2        | 38               | 73        | 11                            | 21        |
| <b>United Kingdom</b>                                                              | <b>560</b>                    | <b>17</b>                   | <b>3</b> | <b>18</b>     | <b>3</b> | <b>450</b>       | <b>80</b> | <b>75</b>                     | <b>13</b> |

| Table 18 : Highest cytology and core biopsy score prior to malignant diagnostic open biopsies (invasive cancer) |                               |                             |          |                |           |                |           |                |           |                |           |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------|----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
| Region                                                                                                          | Total malignant open biopsies | No pre-operative procedures |          | C4, B4 or both |           | C3, B3 or both |           | C2, B2 or both |           | C1, B1 or both |           |
|                                                                                                                 |                               | No.                         | %        | No.            | %         | No.            | %         | No.            | %         | No.            | %         |
| N East, Yorks & Humber                                                                                          | 48                            | 3                           | 6        | 22             | 46        | 13             | 27        | 4              | 8         | 6              | 13        |
| East Midlands                                                                                                   | 23                            | 2                           | 9        | 9              | 39        | 7              | 30        | 3              | 13        | 2              | 9         |
| East of England                                                                                                 | 53                            | 3                           | 6        | 24             | 45        | 9              | 17        | 9              | 17        | 8              | 15        |
| London                                                                                                          | 48                            | 1                           | 2        | 24             | 50        | 14             | 29        | 4              | 8         | 5              | 10        |
| South East (East)                                                                                               | 26                            | 1                           | 4        | 11             | 42        | 7              | 27        | 1              | 4         | 6              | 23        |
| South East (West)                                                                                               | 43                            | 4                           | 9        | 15             | 35        | 10             | 23        | 8              | 19        | 6              | 14        |
| South West                                                                                                      | 37                            | 5                           | 14       | 15             | 41        | 4              | 11        | 7              | 19        | 6              | 16        |
| West Midlands                                                                                                   | 33                            | 3                           | 9        | 11             | 33        | 6              | 18        | 3              | 9         | 10             | 30        |
| North West                                                                                                      | 81                            | 6                           | 7        | 37             | 46        | 18             | 22        | 6              | 7         | 14             | 17        |
| Wales                                                                                                           | 22                            | 3                           | 14       | 9              | 41        | 1              | 5         | 7              | 32        | 2              | 9         |
| Northern Ireland                                                                                                | 8                             | 0                           | 0        | 2              | 25        | 4              | 50        | 0              | 0         | 2              | 25        |
| Scotland                                                                                                        | 23                            | 5                           | 22       | 10             | 43        | 5              | 22        | 2              | 9         | 1              | 4         |
| <b>United Kingdom</b>                                                                                           | <b>445</b>                    | <b>36</b>                   | <b>8</b> | <b>189</b>     | <b>42</b> | <b>98</b>      | <b>22</b> | <b>54</b>      | <b>12</b> | <b>68</b>      | <b>15</b> |

**Table 19 : Highest cytology and core biopsy score prior to malignant diagnostic open biopsies (non-invasive cancer)**

| Region                 | Total malignant open biopsies | No pre-operative procedures |          | C4, B4 or both |           | C3, B3 or both |           | C2, B2 or both |           | C1, B1 or both |           |
|------------------------|-------------------------------|-----------------------------|----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
|                        |                               | No.                         | %        | No.            | %         | No.            | %         | No.            | %         | No.            | %         |
| N East, Yorks & Humber | 70                            | 0                           | 0        | 29             | 41        | 27             | 39        | 7              | 10        | 7              | 10        |
| East Midlands          | 32                            | 3                           | 9        | 13             | 41        | 6              | 19        | 4              | 13        | 6              | 19        |
| East of England        | 50                            | 1                           | 2        | 17             | 34        | 15             | 30        | 6              | 12        | 11             | 22        |
| London                 | 58                            | 1                           | 2        | 17             | 29        | 28             | 48        | 4              | 7         | 8              | 14        |
| South East (East)      | 55                            | 1                           | 2        | 25             | 45        | 26             | 47        | 2              | 4         | 1              | 2         |
| South East (West)      | 32                            | 3                           | 9        | 5              | 16        | 17             | 53        | 5              | 16        | 2              | 6         |
| South West             | 48                            | 1                           | 2        | 21             | 44        | 14             | 29        | 8              | 17        | 4              | 8         |
| West Midlands          | 52                            | 3                           | 6        | 22             | 42        | 18             | 35        | 2              | 4         | 7              | 13        |
| North West             | 67                            | 0                           | 0        | 26             | 39        | 26             | 39        | 9              | 13        | 6              | 9         |
| Wales                  | 28                            | 2                           | 7        | 11             | 39        | 4              | 14        | 4              | 14        | 7              | 25        |
| Northern Ireland       | 16                            | 0                           | 0        | 10             | 63        | 4              | 25        | 0              | 0         | 2              | 13        |
| Scotland               | 52                            | 2                           | 4        | 21             | 40        | 19             | 37        | 3              | 6         | 7              | 13        |
| <b>United Kingdom</b>  | <b>560</b>                    | <b>17</b>                   | <b>3</b> | <b>217</b>     | <b>39</b> | <b>204</b>     | <b>36</b> | <b>54</b>      | <b>10</b> | <b>68</b>      | <b>12</b> |

**Table 20 : Treatment for non-invasive and micro-invasive breast cancers**

| Region                 | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
|                        | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber | 197                  | 62        | 119        | 37        | 3          | 1        | 0        | 0        | 319         | 100        |
| East Midlands          | 141                  | 67        | 66         | 32        | 2          | 1        | 0        | 0        | 209         | 100        |
| East of England        | 191                  | 72        | 72         | 27        | 3          | 1        | 0        | 0        | 266         | 100        |
| London                 | 208                  | 76        | 52         | 19        | 10         | 4        | 4        | 1        | 274         | 100        |
| South East (East)      | 147                  | 71        | 55         | 27        | 5          | 2        | 0        | 0        | 207         | 100        |
| South East (West)      | 92                   | 65        | 49         | 35        | 1          | 1        | 0        | 0        | 142         | 100        |
| South West             | 139                  | 69        | 60         | 30        | 2          | 1        | 0        | 0        | 201         | 100        |
| West Midlands          | 150                  | 68        | 68         | 31        | 2          | 1        | 1        | 0        | 221         | 100        |
| North West             | 195                  | 75        | 62         | 24        | 2          | 1        | 1        | 0        | 260         | 100        |
| Wales                  | 74                   | 58        | 52         | 41        | 2          | 2        | 0        | 0        | 128         | 100        |
| Northern Ireland       | 41                   | 79        | 11         | 21        | 0          | 0        | 0        | 0        | 52          | 100        |
| Scotland               | 125                  | 68        | 58         | 32        | 0          | 0        | 0        | 0        | 183         | 100        |
| <b>United Kingdom</b>  | <b>1700</b>          | <b>69</b> | <b>724</b> | <b>29</b> | <b>32</b>  | <b>1</b> | <b>6</b> | <b>0</b> | <b>2462</b> | <b>100</b> |

**Table 21 : Nuclear grade of non-invasive cancers**

| Region                 | High        |           | Other      |           | Not assessable |          | Unknown    |           | Total       |            |
|------------------------|-------------|-----------|------------|-----------|----------------|----------|------------|-----------|-------------|------------|
|                        | No.         | %         | No.        | %         | No.            | %        | No.        | %         | No.         | %          |
| N East, Yorks & Humber | 153         | 50        | 138        | 45        | 10             | 3        | 5          | 2         | 306         | 100        |
| East Midlands          | 109         | 57        | 79         | 41        | 4              | 2        | 0          | 0         | 192         | 100        |
| East of England        | 103         | 39        | 102        | 39        | 7              | 3        | 50         | 19        | 262         | 100        |
| London                 | 112         | 43        | 110        | 42        | 5              | 2        | 33         | 13        | 260         | 100        |
| South East (East)      | 99          | 51        | 88         | 45        | 0              | 0        | 9          | 5         | 196         | 100        |
| South East (West)      | 71          | 53        | 59         | 44        | 0              | 0        | 5          | 4         | 135         | 100        |
| South West             | 115         | 58        | 77         | 39        | 3              | 2        | 3          | 2         | 198         | 100        |
| West Midlands          | 126         | 60        | 73         | 35        | 7              | 3        | 4          | 2         | 210         | 100        |
| North West             | 93          | 38        | 70         | 29        | 4              | 2        | 77         | 32        | 244         | 100        |
| Wales                  | 53          | 44        | 59         | 49        | 5              | 4        | 3          | 3         | 120         | 100        |
| Northern Ireland       | 27          | 55        | 18         | 37        | 0              | 0        | 4          | 8         | 49          | 100        |
| Scotland               | 61          | 35        | 33         | 19        | 5              | 3        | 77         | 44        | 176         | 100        |
| <b>United Kingdom</b>  | <b>1122</b> | <b>48</b> | <b>906</b> | <b>39</b> | <b>50</b>      | <b>2</b> | <b>270</b> | <b>11</b> | <b>2348</b> | <b>100</b> |

| Table 22 : Disease extent of non-invasive cancers |             |           |                     |          |                |           |                                |           |          |          |            |           |             |            |
|---------------------------------------------------|-------------|-----------|---------------------|----------|----------------|-----------|--------------------------------|-----------|----------|----------|------------|-----------|-------------|------------|
| Region                                            | Localized   |           | Multiple            |          | Not assessable |           | Unknown disease extent with... |           |          |          |            |           | Total       |            |
|                                                   | Size known  |           | Size not assessable |          | Size unknown   |           |                                |           |          |          |            |           |             |            |
|                                                   | No.         | %         | No.                 | %        | No.            | %         | No.                            | %         | No.      | %        | No.        | %         | No.         | %          |
| N East, Yorks & Humber                            | 119         | 39        | 17                  | 6        | 35             | 11        | 107                            | 35        | 0        | 0        | 28         | 9         | 306         | 100        |
| East Midlands                                     | 136         | 71        | 34                  | 18       | 22             | 11        | 0                              | 0         | 0        | 0        | 0          | 0         | 192         | 100        |
| East of England                                   | 51          | 19        | 22                  | 8        | 14             | 5         | 90                             | 34        | 6        | 2        | 79         | 30        | 262         | 100        |
| London                                            | 104         | 40        | 13                  | 5        | 44             | 17        | 66                             | 25        | 0        | 0        | 33         | 13        | 260         | 100        |
| South East (East)                                 | 60          | 31        | 10                  | 5        | 96             | 49        | 18                             | 9         | 0        | 0        | 12         | 6         | 196         | 100        |
| South East (West)                                 | 29          | 21        | 9                   | 7        | 14             | 10        | 68                             | 50        | 0        | 0        | 15         | 11        | 135         | 100        |
| South West                                        | 70          | 35        | 23                  | 12       | 33             | 17        | 48                             | 24        | 0        | 0        | 24         | 12        | 198         | 100        |
| West Midlands                                     | 128         | 61        | 18                  | 9        | 15             | 7         | 43                             | 20        | 1        | 0        | 5          | 2         | 210         | 100        |
| North West                                        | 75          | 31        | 11                  | 5        | 11             | 5         | 111                            | 45        | 0        | 0        | 36         | 15        | 244         | 100        |
| Wales                                             | 66          | 55        | 16                  | 13       | 5              | 4         | 31                             | 26        | 0        | 0        | 2          | 2         | 120         | 100        |
| Northern Ireland                                  | 18          | 37        | 5                   | 10       | 1              | 2         | 14                             | 29        | 0        | 0        | 11         | 22        | 49          | 100        |
| Scotland                                          | 149         | 85        | 19                  | 11       | 3              | 2         | 4                              | 2         | 0        | 0        | 1          | 1         | 176         | 100        |
| <b>United Kingdom</b>                             | <b>1005</b> | <b>43</b> | <b>197</b>          | <b>8</b> | <b>293</b>     | <b>12</b> | <b>600</b>                     | <b>26</b> | <b>7</b> | <b>0</b> | <b>246</b> | <b>10</b> | <b>2348</b> | <b>100</b> |

| Table 23 : Size of non-invasive cancers |       |    |          |    |        |    |                |   |         |    |       |     |
|-----------------------------------------|-------|----|----------|----|--------|----|----------------|---|---------|----|-------|-----|
| Region                                  | <15mm |    | 15-<30mm |    | 30+ mm |    | Not assessable |   | Unknown |    | Total |     |
|                                         | No.   | %  | No.      | %  | No.    | %  | No.            | % | No.     | %  | No.   | %   |
| N East, Yorks & Humber                  | 105   | 34 | 79       | 26 | 75     | 25 | 3              | 1 | 44      | 14 | 306   | 100 |
| East Midlands                           | 93    | 48 | 59       | 31 | 33     | 17 | 7              | 4 | 0       | 0  | 192   | 100 |
| East of England                         | 88    | 34 | 44       | 17 | 33     | 13 | 13             | 5 | 84      | 32 | 262   | 100 |
| London                                  | 108   | 42 | 52       | 20 | 39     | 15 | 6              | 2 | 55      | 21 | 260   | 100 |
| South East (East)                       | 86    | 44 | 49       | 25 | 27     | 14 | 0              | 0 | 34      | 17 | 196   | 100 |
| South East (West)                       | 52    | 39 | 38       | 28 | 26     | 19 | 0              | 0 | 19      | 14 | 135   | 100 |
| South West                              | 77    | 39 | 51       | 26 | 37     | 19 | 4              | 2 | 29      | 15 | 198   | 100 |
| West Midlands                           | 87    | 41 | 56       | 27 | 48     | 23 | 10             | 5 | 9       | 4  | 210   | 100 |
| North West                              | 108   | 44 | 62       | 25 | 26     | 11 | 0              | 0 | 48      | 20 | 244   | 100 |
| Wales                                   | 53    | 44 | 25       | 21 | 29     | 24 | 3              | 3 | 10      | 8  | 120   | 100 |
| Northern Ireland                        | 10    | 20 | 13       | 27 | 14     | 29 | 0              | 0 | 12      | 24 | 49    | 100 |
| Scotland                                | 83    | 47 | 47       | 27 | 39     | 22 | 1              | 1 | 6       | 3  | 176   | 100 |
| United Kingdom                          | 950   | 40 | 575      | 24 | 426    | 18 | 47             | 2 | 350     | 15 | 2348  | 100 |

| Table 24 : Data completeness for non-invasive cancers |                       |           |                        |           |              |           |                       |           |             |  |
|-------------------------------------------------------|-----------------------|-----------|------------------------|-----------|--------------|-----------|-----------------------|-----------|-------------|--|
| Region                                                | Unknown nuclear grade |           | Unknown disease extent |           | Unknown size |           | Unknown grade or size |           | Total       |  |
|                                                       | No.                   | %         | No.                    | %         | No.          | %         | No.                   | %         |             |  |
| N East, Yorks & Humber                                | 5                     | 2         | 135                    | 44        | 44           | 14        | 44                    | 14        | 306         |  |
| East Midlands                                         | 0                     | 0         | 0                      | 0         | 0            | 0         | 0                     | 0         | 192         |  |
| East of England                                       | 50                    | 19        | 175                    | 67        | 84           | 32        | 87                    | 33        | 262         |  |
| London                                                | 33                    | 13        | 99                     | 38        | 55           | 21        | 60                    | 23        | 260         |  |
| South East (East)                                     | 9                     | 5         | 30                     | 15        | 34           | 17        | 34                    | 17        | 196         |  |
| South East (West)                                     | 5                     | 4         | 83                     | 61        | 19           | 14        | 21                    | 16        | 135         |  |
| South West                                            | 3                     | 2         | 72                     | 36        | 29           | 15        | 30                    | 15        | 198         |  |
| West Midlands                                         | 4                     | 2         | 49                     | 23        | 9            | 4         | 9                     | 4         | 210         |  |
| North West                                            | 77                    | 32        | 147                    | 60        | 48           | 20        | 103                   | 42        | 244         |  |
| Wales                                                 | 3                     | 3         | 33                     | 28        | 10           | 8         | 13                    | 11        | 120         |  |
| Northern Ireland                                      | 4                     | 8         | 25                     | 51        | 12           | 24        | 14                    | 29        | 49          |  |
| Scotland                                              | 77                    | 44        | 5                      | 3         | 6            | 3         | 80                    | 45        | 176         |  |
| <b>United Kingdom</b>                                 | <b>270</b>            | <b>11</b> | <b>853</b>             | <b>36</b> | <b>350</b>   | <b>15</b> | <b>495</b>            | <b>21</b> | <b>2348</b> |  |

| Table 25 : Treatment of high grade multi-focal non-invasive cancers |                      |           |            |           |            |            |
|---------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|------------|
| Region                                                              | Conservation Surgery |           | Mastectomy |           | Total      |            |
|                                                                     | No.                  | %         | No.        | %         | No.        | %          |
| N East, Yorks & Humber                                              | 1                    | 11        | 8          | 89        | 9          | 100        |
| East Midlands                                                       | 4                    | 27        | 11         | 73        | 15         | 100        |
| East of England                                                     | 6                    | 43        | 8          | 57        | 14         | 100        |
| London                                                              | 1                    | 17        | 5          | 83        | 6          | 100        |
| South East (East)                                                   | 1                    | 17        | 5          | 83        | 6          | 100        |
| South East (West)                                                   | 0                    | 0         | 5          | 100       | 5          | 100        |
| South West                                                          | 8                    | 53        | 7          | 47        | 15         | 100        |
| West Midlands                                                       | 2                    | 17        | 10         | 83        | 12         | 100        |
| North West                                                          | 2                    | 29        | 5          | 71        | 7          | 100        |
| Wales                                                               | 0                    | 0         | 9          | 100       | 9          | 100        |
| Northern Ireland                                                    | 1                    | 20        | 4          | 80        | 5          | 100        |
| Scotland                                                            | 2                    | 18        | 9          | 82        | 11         | 100        |
| <b>United Kingdom</b>                                               | <b>28</b>            | <b>25</b> | <b>86</b>  | <b>75</b> | <b>114</b> | <b>100</b> |

| Table 26 : Treatment of multi-focal non-invasive cancers (30+ mm) |                      |          |            |           |            |          |          |          |           |            |
|-------------------------------------------------------------------|----------------------|----------|------------|-----------|------------|----------|----------|----------|-----------|------------|
| Region                                                            | Conservation Surgery |          | Mastectomy |           | No Surgery |          | Unknown  |          | Total     |            |
|                                                                   | No.                  | %        | No.        | %         | No.        | %        | No.      | %        | No.       | %          |
| N East, Yorks & Humber                                            | 0                    | 0        | 4          | 100       | 0          | 0        | 0        | 0        | 4         | 100        |
| East Midlands                                                     | 0                    | 0        | 9          | 100       | 0          | 0        | 0        | 0        | 9         | 100        |
| East of England                                                   | 1                    | 13       | 7          | 88        | 0          | 0        | 0        | 0        | 8         | 100        |
| London                                                            | 1                    | 25       | 3          | 75        | 0          | 0        | 0        | 0        | 4         | 100        |
| South East (East)                                                 | 0                    | 0        | 1          | 100       | 0          | 0        | 0        | 0        | 1         | 100        |
| South East (West)                                                 | 0                    | 0        | 3          | 100       | 0          | 0        | 0        | 0        | 3         | 100        |
| South West                                                        | 2                    | 40       | 3          | 60        | 0          | 0        | 0        | 0        | 5         | 100        |
| West Midlands                                                     | 0                    | 0        | 6          | 100       | 0          | 0        | 0        | 0        | 6         | 100        |
| North West                                                        | 0                    | 0        | 2          | 100       | 0          | 0        | 0        | 0        | 2         | 100        |
| Wales                                                             | 0                    | 0        | 9          | 100       | 0          | 0        | 0        | 0        | 9         | 100        |
| Northern Ireland                                                  | 1                    | 20       | 4          | 80        | 0          | 0        | 0        | 0        | 5         | 100        |
| Scotland                                                          | 1                    | 11       | 8          | 89        | 0          | 0        | 0        | 0        | 9         | 100        |
| <b>United Kingdom</b>                                             | <b>6</b>             | <b>9</b> | <b>59</b>  | <b>91</b> | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>65</b> | <b>100</b> |

| Table 27 : Treatment of high grade non-invasive cancers (30+ mm) |                      |           |            |           |            |          |          |          |            |            |
|------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|------------|------------|
| Region                                                           | Conservation Surgery |           | Mastectomy |           | No Surgery |          | Unknown  |          | Total      |            |
|                                                                  | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.        | %          |
| N East, Yorks & Humber                                           | 12                   | 24        | 39         | 76        | 0          | 0        | 0        | 0        | 51         | 100        |
| East Midlands                                                    | 7                    | 29        | 17         | 71        | 0          | 0        | 0        | 0        | 24         | 100        |
| East of England                                                  | 6                    | 35        | 11         | 65        | 0          | 0        | 0        | 0        | 17         | 100        |
| London                                                           | 14                   | 61        | 9          | 39        | 0          | 0        | 0        | 0        | 23         | 100        |
| South East (East)                                                | 4                    | 24        | 12         | 71        | 1          | 6        | 0        | 0        | 17         | 100        |
| South East (West)                                                | 7                    | 37        | 12         | 63        | 0          | 0        | 0        | 0        | 19         | 100        |
| South West                                                       | 10                   | 38        | 16         | 62        | 0          | 0        | 0        | 0        | 26         | 100        |
| West Midlands                                                    | 9                    | 26        | 26         | 74        | 0          | 0        | 0        | 0        | 35         | 100        |
| North West                                                       | 7                    | 35        | 13         | 65        | 0          | 0        | 0        | 0        | 20         | 100        |
| Wales                                                            | 5                    | 24        | 16         | 76        | 0          | 0        | 0        | 0        | 21         | 100        |
| Northern Ireland                                                 | 5                    | 42        | 7          | 58        | 0          | 0        | 0        | 0        | 12         | 100        |
| Scotland                                                         | 4                    | 17        | 20         | 83        | 0          | 0        | 0        | 0        | 24         | 100        |
| <b>United Kingdom</b>                                            | <b>90</b>            | <b>31</b> | <b>198</b> | <b>69</b> | <b>1</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>289</b> | <b>100</b> |

| Table 28 : Treatment of unknown grade non-invasive cancers (30+ mm) |                      |           |            |           |            |          |          |          |           |            |
|---------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-----------|------------|
| Region                                                              | Conservation Surgery |           | Mastectomy |           | No Surgery |          | Unknown  |          | Total     |            |
|                                                                     | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.       | %          |
| North West                                                          | 1                    | 33        | 2          | 67        | 0          | 0        | 0        | 0        | 3         | 100        |
| Scotland                                                            | 2                    | 25        | 6          | 75        | 0          | 0        | 0        | 0        | 8         | 100        |
| <b>United Kingdom</b>                                               | <b>3</b>             | <b>27</b> | <b>8</b>   | <b>73</b> | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>11</b> | <b>100</b> |

| Table 29 : Treatment of non-invasive cancers with high grade and unknown size |                      |           |            |           |            |          |          |          |           |            |
|-------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-----------|------------|
| Region                                                                        | Conservation Surgery |           | Mastectomy |           | No Surgery |          | Unknown  |          | Total     |            |
|                                                                               | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.       | %          |
| N East, Yorks & Humber                                                        | 9                    | 60        | 6          | 40        | 0          | 0        | 0        | 0        | 15        | 100        |
| East Midlands                                                                 | 0                    | -         | 0          | -         | 0          | -        | 0        | -        | 0         | 0          |
| East of England                                                               | 4                    | 33        | 8          | 67        | 0          | 0        | 0        | 0        | 12        | 100        |
| London                                                                        | 13                   | 68        | 6          | 32        | 0          | 0        | 0        | 0        | 19        | 100        |
| South East (East)                                                             | 7                    | 64        | 4          | 36        | 0          | 0        | 0        | 0        | 11        | 100        |
| South East (West)                                                             | 5                    | 56        | 4          | 44        | 0          | 0        | 0        | 0        | 9         | 100        |
| South West                                                                    | 7                    | 54        | 6          | 46        | 0          | 0        | 0        | 0        | 13        | 100        |
| West Midlands                                                                 | 0                    | 0         | 1          | 100       | 0          | 0        | 0        | 0        | 1         | 100        |
| North West                                                                    | 5                    | 42        | 6          | 50        | 1          | 8        | 0        | 0        | 12        | 100        |
| Wales                                                                         | 0                    | 0         | 1          | 100       | 0          | 0        | 0        | 0        | 1         | 100        |
| Northern Ireland                                                              | 3                    | 75        | 1          | 25        | 0          | 0        | 0        | 0        | 4         | 100        |
| Scotland                                                                      | 1                    | 100       | 0          | 0         | 0          | 0        | 0        | 0        | 1         | 100        |
| <b>United Kingdom</b>                                                         | <b>54</b>            | <b>55</b> | <b>43</b>  | <b>44</b> | <b>1</b>   | <b>1</b> | <b>0</b> | <b>0</b> | <b>98</b> | <b>100</b> |

| Table 30 : Treatment of non-invasive cancers with unknown grade and unknown size |                      |           |            |           |            |           |          |          |            |            |
|----------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|-----------|----------|----------|------------|------------|
| Region                                                                           | Conservation Surgery |           | Mastectomy |           | No Surgery |           | Unknown  |          | Total      |            |
|                                                                                  | No.                  | %         | No.        | %         | No.        | %         | No.      | %        | No.        | %          |
| N East, Yorks & Humber                                                           | 1                    | 20        | 1          | 20        | 3          | 60        | 0        | 0        | 5          | 100        |
| East Midlands                                                                    | 0                    | -         | 0          | -         | 0          | -         | 0        | -        | 0          | 0          |
| East of England                                                                  | 27                   | 57        | 17         | 36        | 3          | 6         | 0        | 0        | 47         | 100        |
| London                                                                           | 10                   | 36        | 6          | 21        | 9          | 32        | 3        | 11       | 28         | 100        |
| South East (East)                                                                | 4                    | 44        | 2          | 22        | 3          | 33        | 0        | 0        | 9          | 100        |
| South East (West)                                                                | 3                    | 100       | 0          | 0         | 0          | 0         | 0        | 0        | 3          | 100        |
| South West                                                                       | 1                    | 50        | 0          | 0         | 1          | 50        | 0        | 0        | 2          | 100        |
| West Midlands                                                                    | 0                    | 0         | 1          | 25        | 2          | 50        | 1        | 25       | 4          | 100        |
| North West                                                                       | 14                   | 64        | 7          | 32        | 1          | 5         | 0        | 0        | 22         | 100        |
| Wales                                                                            | 0                    | -         | 0          | -         | 0          | -         | 0        | -        | 0          | 0          |
| Northern Ireland                                                                 | 2                    | 100       | 0          | 0         | 0          | 0         | 0        | 0        | 2          | 100        |
| Scotland                                                                         | 2                    | 67        | 1          | 33        | 0          | 0         | 0        | 0        | 3          | 100        |
| <b>United Kingdom</b>                                                            | <b>64</b>            | <b>51</b> | <b>35</b>  | <b>28</b> | <b>22</b>  | <b>18</b> | <b>4</b> | <b>3</b> | <b>125</b> | <b>100</b> |

| Table 31 : Treatment for invasive breast cancers of all sizes including size unknown |                      |           |             |           |            |          |           |          |             |            |
|--------------------------------------------------------------------------------------|----------------------|-----------|-------------|-----------|------------|----------|-----------|----------|-------------|------------|
| Region                                                                               | Conservation surgery |           | Mastectomy  |           | No surgery |          | Unknown   |          | Total       |            |
|                                                                                      | No.                  | %         | No.         | %         | No.        | %        | No.       | %        | No.         | %          |
| N East, Yorks & Humber                                                               | 718                  | 63        | 395         | 35        | 17         | 1        | 4         | 0        | 1134        | 100        |
| East Midlands                                                                        | 493                  | 68        | 211         | 29        | 16         | 2        | 0         | 0        | 720         | 100        |
| East of England                                                                      | 729                  | 76        | 217         | 23        | 5          | 1        | 3         | 0        | 954         | 100        |
| London                                                                               | 677                  | 79        | 160         | 19        | 15         | 2        | 10        | 1        | 862         | 100        |
| South East (East)                                                                    | 475                  | 73        | 168         | 26        | 6          | 1        | 3         | 0        | 652         | 100        |
| South East (West)                                                                    | 447                  | 75        | 146         | 24        | 2          | 0        | 1         | 0        | 596         | 100        |
| South West                                                                           | 633                  | 75        | 211         | 25        | 5          | 1        | 0         | 0        | 849         | 100        |
| West Midlands                                                                        | 595                  | 73        | 211         | 26        | 5          | 1        | 0         | 0        | 811         | 100        |
| North West                                                                           | 814                  | 71        | 314         | 28        | 11         | 1        | 2         | 0        | 1141        | 100        |
| Wales                                                                                | 347                  | 65        | 181         | 34        | 4          | 1        | 0         | 0        | 532         | 100        |
| Northern Ireland                                                                     | 125                  | 77        | 38          | 23        | 0          | 0        | 0         | 0        | 163         | 100        |
| Scotland                                                                             | 466                  | 69        | 192         | 29        | 14         | 2        | 0         | 0        | 672         | 100        |
| <b>United Kingdom</b>                                                                | <b>6519</b>          | <b>72</b> | <b>2444</b> | <b>27</b> | <b>100</b> | <b>1</b> | <b>23</b> | <b>0</b> | <b>9086</b> | <b>100</b> |

| Table 32 : Size of invasive breast cancers |             |           |             |           |             |           |             |           |            |          |            |          |             |            |
|--------------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|------------|----------|------------|----------|-------------|------------|
| Region                                     | <10mm       |           | 10-<15mm    |           | 15-<20mm    |           | 20-<50mm    |           | 50+mm      |          | Unknown    |          | Total       |            |
|                                            | No.         | %         | No.         | %         | No.         | %         | No.         | %         | No.        | %        | No.        | %        | No.         | %          |
| N East, Yorks & Humber                     | 272         | 24        | 314         | 28        | 217         | 19        | 281         | 25        | 27         | 2        | 23         | 2        | 1134        | 100        |
| East Midlands                              | 171         | 24        | 249         | 35        | 127         | 18        | 144         | 20        | 12         | 2        | 17         | 2        | 720         | 100        |
| East of England                            | 220         | 23        | 247         | 26        | 169         | 18        | 153         | 16        | 12         | 1        | 153        | 16       | 954         | 100        |
| London                                     | 213         | 25        | 253         | 29        | 164         | 19        | 181         | 21        | 17         | 2        | 34         | 4        | 862         | 100        |
| South East (East)                          | 186         | 29        | 189         | 29        | 132         | 20        | 123         | 19        | 16         | 2        | 6          | 1        | 652         | 100        |
| South East (West)                          | 153         | 26        | 163         | 27        | 116         | 19        | 146         | 24        | 11         | 2        | 7          | 1        | 596         | 100        |
| South West                                 | 202         | 24        | 267         | 31        | 173         | 20        | 188         | 22        | 11         | 1        | 8          | 1        | 849         | 100        |
| West Midlands                              | 173         | 21        | 242         | 30        | 181         | 22        | 191         | 24        | 16         | 2        | 8          | 1        | 811         | 100        |
| North West                                 | 286         | 25        | 326         | 29        | 201         | 18        | 258         | 23        | 26         | 2        | 44         | 4        | 1141        | 100        |
| Wales                                      | 131         | 25        | 171         | 32        | 107         | 20        | 110         | 21        | 9          | 2        | 4          | 1        | 532         | 100        |
| Northern Ireland                           | 43          | 26        | 42          | 26        | 31          | 19        | 39          | 24        | 5          | 3        | 3          | 2        | 163         | 100        |
| Scotland                                   | 182         | 27        | 183         | 27        | 134         | 20        | 151         | 22        | 9          | 1        | 13         | 2        | 672         | 100        |
| <b>United Kingdom</b>                      | <b>2232</b> | <b>25</b> | <b>2646</b> | <b>29</b> | <b>1752</b> | <b>19</b> | <b>1965</b> | <b>22</b> | <b>171</b> | <b>2</b> | <b>320</b> | <b>4</b> | <b>9086</b> | <b>100</b> |

| Table 33 : Treatment for invasive breast cancers <10mm |                      |           |            |           |            |          |          |          |             |            |
|--------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                 | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                        | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                 | 186                  | 68        | 85         | 31        | 0          | 0        | 1        | 0        | 272         | 100        |
| East Midlands                                          | 131                  | 77        | 40         | 23        | 0          | 0        | 0        | 0        | 171         | 100        |
| East of England                                        | 182                  | 83        | 36         | 16        | 0          | 0        | 2        | 1        | 220         | 100        |
| London                                                 | 183                  | 86        | 30         | 14        | 0          | 0        | 0        | 0        | 213         | 100        |
| South East (East)                                      | 153                  | 82        | 31         | 17        | 1          | 1        | 1        | 1        | 186         | 100        |
| South East (West)                                      | 129                  | 84        | 24         | 16        | 0          | 0        | 0        | 0        | 153         | 100        |
| South West                                             | 164                  | 81        | 38         | 19        | 0          | 0        | 0        | 0        | 202         | 100        |
| West Midlands                                          | 147                  | 85        | 26         | 15        | 0          | 0        | 0        | 0        | 173         | 100        |
| North West                                             | 229                  | 80        | 57         | 20        | 0          | 0        | 0        | 0        | 286         | 100        |
| Wales                                                  | 98                   | 75        | 33         | 25        | 0          | 0        | 0        | 0        | 131         | 100        |
| Northern Ireland                                       | 39                   | 91        | 4          | 9         | 0          | 0        | 0        | 0        | 43          | 100        |
| Scotland                                               | 153                  | 84        | 28         | 15        | 1          | 1        | 0        | 0        | 182         | 100        |
| <b>United Kingdom</b>                                  | <b>1794</b>          | <b>80</b> | <b>432</b> | <b>19</b> | <b>2</b>   | <b>0</b> | <b>4</b> | <b>0</b> | <b>2232</b> | <b>100</b> |

| Table 34 : Treatment for invasive breast cancers 10-<15mm |                      |           |            |           |            |          |          |          |             |            |
|-----------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                    | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                           | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                    | 244                  | 78        | 70         | 22        | 0          | 0        | 0        | 0        | 314         | 100        |
| East Midlands                                             | 193                  | 78        | 56         | 22        | 0          | 0        | 0        | 0        | 249         | 100        |
| East of England                                           | 209                  | 85        | 38         | 15        | 0          | 0        | 0        | 0        | 247         | 100        |
| London                                                    | 222                  | 88        | 31         | 12        | 0          | 0        | 0        | 0        | 253         | 100        |
| South East (East)                                         | 152                  | 80        | 36         | 19        | 0          | 0        | 1        | 1        | 189         | 100        |
| South East (West)                                         | 135                  | 83        | 28         | 17        | 0          | 0        | 0        | 0        | 163         | 100        |
| South West                                                | 224                  | 84        | 42         | 16        | 1          | 0        | 0        | 0        | 267         | 100        |
| West Midlands                                             | 208                  | 86        | 34         | 14        | 0          | 0        | 0        | 0        | 242         | 100        |
| North West                                                | 268                  | 82        | 58         | 18        | 0          | 0        | 0        | 0        | 326         | 100        |
| Wales                                                     | 126                  | 74        | 45         | 26        | 0          | 0        | 0        | 0        | 171         | 100        |
| Northern Ireland                                          | 34                   | 81        | 8          | 19        | 0          | 0        | 0        | 0        | 42          | 100        |
| Scotland                                                  | 141                  | 77        | 40         | 22        | 2          | 1        | 0        | 0        | 183         | 100        |
| <b>United Kingdom</b>                                     | <b>2156</b>          | <b>81</b> | <b>486</b> | <b>18</b> | <b>3</b>   | <b>0</b> | <b>1</b> | <b>0</b> | <b>2646</b> | <b>100</b> |

| Table 35 : Treatment for invasive breast cancers <15mm |                      |           |            |           |            |          |          |          |             |            |
|--------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                 | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                        | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                 | 430                  | 73        | 155        | 26        | 0          | 0        | 1        | 0        | 586         | 100        |
| East Midlands                                          | 324                  | 77        | 96         | 23        | 0          | 0        | 0        | 0        | 420         | 100        |
| East of England                                        | 391                  | 84        | 74         | 16        | 0          | 0        | 2        | 0        | 467         | 100        |
| London                                                 | 405                  | 87        | 61         | 13        | 0          | 0        | 0        | 0        | 466         | 100        |
| South East (East)                                      | 305                  | 81        | 67         | 18        | 1          | 0        | 2        | 1        | 375         | 100        |
| South East (West)                                      | 264                  | 84        | 52         | 16        | 0          | 0        | 0        | 0        | 316         | 100        |
| South West                                             | 388                  | 83        | 80         | 17        | 1          | 0        | 0        | 0        | 469         | 100        |
| West Midlands                                          | 355                  | 86        | 60         | 14        | 0          | 0        | 0        | 0        | 415         | 100        |
| North West                                             | 497                  | 81        | 115        | 19        | 0          | 0        | 0        | 0        | 612         | 100        |
| Wales                                                  | 224                  | 74        | 78         | 26        | 0          | 0        | 0        | 0        | 302         | 100        |
| Northern Ireland                                       | 73                   | 86        | 12         | 14        | 0          | 0        | 0        | 0        | 85          | 100        |
| Scotland                                               | 294                  | 81        | 68         | 19        | 3          | 1        | 0        | 0        | 365         | 100        |
| <b>United Kingdom</b>                                  | <b>3950</b>          | <b>81</b> | <b>918</b> | <b>19</b> | <b>5</b>   | <b>0</b> | <b>5</b> | <b>0</b> | <b>4878</b> | <b>100</b> |

| Table 36 : Treatment for invasive breast cancers 15-<20mm |                      |           |            |           |            |          |          |          |             |            |
|-----------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                    | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                           | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                    | 151                  | 70        | 66         | 30        | 0          | 0        | 0        | 0        | 217         | 100        |
| East Midlands                                             | 94                   | 74        | 33         | 26        | 0          | 0        | 0        | 0        | 127         | 100        |
| East of England                                           | 130                  | 77        | 39         | 23        | 0          | 0        | 0        | 0        | 169         | 100        |
| London                                                    | 139                  | 85        | 24         | 15        | 0          | 0        | 1        | 1        | 164         | 100        |
| South East (East)                                         | 102                  | 77        | 29         | 22        | 0          | 0        | 1        | 1        | 132         | 100        |
| South East (West)                                         | 87                   | 75        | 29         | 25        | 0          | 0        | 0        | 0        | 116         | 100        |
| South West                                                | 134                  | 77        | 39         | 23        | 0          | 0        | 0        | 0        | 173         | 100        |
| West Midlands                                             | 129                  | 71        | 52         | 29        | 0          | 0        | 0        | 0        | 181         | 100        |
| North West                                                | 145                  | 72        | 56         | 28        | 0          | 0        | 0        | 0        | 201         | 100        |
| Wales                                                     | 73                   | 68        | 34         | 32        | 0          | 0        | 0        | 0        | 107         | 100        |
| Northern Ireland                                          | 27                   | 87        | 4          | 13        | 0          | 0        | 0        | 0        | 31          | 100        |
| Scotland                                                  | 101                  | 75        | 32         | 24        | 1          | 1        | 0        | 0        | 134         | 100        |
| <b>United Kingdom</b>                                     | <b>1312</b>          | <b>75</b> | <b>437</b> | <b>25</b> | <b>1</b>   | <b>0</b> | <b>2</b> | <b>0</b> | <b>1752</b> | <b>100</b> |

| Table 37 : Treatment for invasive breast cancers 20-<50mm |                      |           |            |           |            |          |          |          |             |            |
|-----------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                    | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                           | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                    | 132                  | 47        | 149        | 53        | 0          | 0        | 0        | 0        | 281         | 100        |
| East Midlands                                             | 72                   | 50        | 72         | 50        | 0          | 0        | 0        | 0        | 144         | 100        |
| East of England                                           | 99                   | 65        | 54         | 35        | 0          | 0        | 0        | 0        | 153         | 100        |
| London                                                    | 121                  | 67        | 58         | 32        | 1          | 1        | 1        | 1        | 181         | 100        |
| South East (East)                                         | 65                   | 53        | 58         | 47        | 0          | 0        | 0        | 0        | 123         | 100        |
| South East (West)                                         | 90                   | 62        | 56         | 38        | 0          | 0        | 0        | 0        | 146         | 100        |
| South West                                                | 109                  | 58        | 79         | 42        | 0          | 0        | 0        | 0        | 188         | 100        |
| West Midlands                                             | 104                  | 54        | 87         | 46        | 0          | 0        | 0        | 0        | 191         | 100        |
| North West                                                | 141                  | 55        | 116        | 45        | 0          | 0        | 1        | 0        | 258         | 100        |
| Wales                                                     | 48                   | 44        | 62         | 56        | 0          | 0        | 0        | 0        | 110         | 100        |
| Northern Ireland                                          | 23                   | 59        | 16         | 41        | 0          | 0        | 0        | 0        | 39          | 100        |
| Scotland                                                  | 68                   | 45        | 83         | 55        | 0          | 0        | 0        | 0        | 151         | 100        |
| <b>United Kingdom</b>                                     | <b>1072</b>          | <b>55</b> | <b>890</b> | <b>45</b> | <b>1</b>   | <b>0</b> | <b>2</b> | <b>0</b> | <b>1965</b> | <b>100</b> |

| Table 38 : Treatment for invasive breast cancers 50+mm |                      |           |            |           |            |          |          |          |            |            |
|--------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|------------|------------|
| Region                                                 | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total      |            |
|                                                        | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.        | %          |
| N East, Yorks & Humber                                 | 3                    | 11        | 22         | 81        | 0          | 0        | 2        | 7        | 27         | 100        |
| East Midlands                                          | 3                    | 25        | 9          | 75        | 0          | 0        | 0        | 0        | 12         | 100        |
| East of England                                        | 3                    | 25        | 9          | 75        | 0          | 0        | 0        | 0        | 12         | 100        |
| London                                                 | 2                    | 12        | 14         | 82        | 0          | 0        | 1        | 6        | 17         | 100        |
| South East (East)                                      | 2                    | 13        | 14         | 88        | 0          | 0        | 0        | 0        | 16         | 100        |
| South East (West)                                      | 2                    | 18        | 9          | 82        | 0          | 0        | 0        | 0        | 11         | 100        |
| South West                                             | 0                    | 0         | 11         | 100       | 0          | 0        | 0        | 0        | 11         | 100        |
| West Midlands                                          | 4                    | 25        | 12         | 75        | 0          | 0        | 0        | 0        | 16         | 100        |
| North West                                             | 7                    | 27        | 19         | 73        | 0          | 0        | 0        | 0        | 26         | 100        |
| Wales                                                  | 2                    | 22        | 7          | 78        | 0          | 0        | 0        | 0        | 9          | 100        |
| Northern Ireland                                       | 1                    | 20        | 4          | 80        | 0          | 0        | 0        | 0        | 5          | 100        |
| Scotland                                               | 0                    | 0         | 8          | 89        | 1          | 11       | 0        | 0        | 9          | 100        |
| <b>United Kingdom</b>                                  | <b>29</b>            | <b>17</b> | <b>138</b> | <b>81</b> | <b>1</b>   | <b>1</b> | <b>3</b> | <b>2</b> | <b>171</b> | <b>100</b> |

| Table 39 : Whole size of invasive breast cancers |             |           |             |           |             |           |             |           |            |          |             |           |             |
|--------------------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|------------|----------|-------------|-----------|-------------|
| Region                                           | <10mm       |           | 10-<15mm    |           | 15-<20mm    |           | 20-<50mm    |           | 50+mm      |          | Unknown     |           | Total       |
|                                                  | No.         | %         | No.         | %         | No.         | %         | No.         | %         | No.        | %        | No.         | %         | No.         |
| N East, Yorks & Humber                           | 168         | 15        | 262         | 23        | 262         | 23        | 365         | 32        | 54         | 5        | 23          | 2         | 1134        |
| East Midlands                                    | 102         | 14        | 202         | 28        | 151         | 21        | 220         | 31        | 28         | 4        | 17          | 2         | 720         |
| East of England                                  | 149         | 16        | 238         | 25        | 174         | 18        | 217         | 23        | 19         | 2        | 157         | 16        | 954         |
| London                                           | 86          | 10        | 139         | 16        | 117         | 14        | 213         | 25        | 23         | 3        | 284         | 33        | 862         |
| South East (East)                                | 84          | 13        | 140         | 21        | 119         | 18        | 147         | 23        | 14         | 2        | 148         | 23        | 652         |
| South East (West)                                | 68          | 11        | 123         | 21        | 101         | 17        | 147         | 25        | 20         | 3        | 137         | 23        | 596         |
| South West                                       | 122         | 14        | 220         | 26        | 164         | 19        | 241         | 28        | 21         | 2        | 81          | 10        | 849         |
| West Midlands                                    | 103         | 13        | 224         | 28        | 186         | 23        | 254         | 31        | 33         | 4        | 11          | 1         | 811         |
| North West                                       | 154         | 13        | 236         | 21        | 181         | 16        | 267         | 23        | 29         | 3        | 274         | 24        | 1141        |
| Wales                                            | 83          | 16        | 141         | 27        | 98          | 18        | 137         | 26        | 17         | 3        | 56          | 11        | 532         |
| Northern Ireland                                 | 18          | 11        | 31          | 19        | 31          | 19        | 47          | 29        | 5          | 3        | 31          | 19        | 163         |
| Scotland                                         | 138         | 21        | 170         | 25        | 144         | 21        | 176         | 26        | 21         | 3        | 23          | 3         | 672         |
| <b>United Kingdom</b>                            | <b>1275</b> | <b>14</b> | <b>2126</b> | <b>23</b> | <b>1728</b> | <b>19</b> | <b>2431</b> | <b>27</b> | <b>284</b> | <b>3</b> | <b>1242</b> | <b>14</b> | <b>9086</b> |

| Table 40 : Whole size of invasive cancers with invasive size <15mm |                  |           |                     |          |                     |          |                  |          |                    |           |             |            |
|--------------------------------------------------------------------|------------------|-----------|---------------------|----------|---------------------|----------|------------------|----------|--------------------|-----------|-------------|------------|
| Region                                                             | Whole size <15mm |           | Whole size 15-<20mm |          | Whole size 20-<50mm |          | Whole size 50+mm |          | Whole size unknown |           | Total       |            |
|                                                                    | No.              | %         | No.                 | %        | No.                 | %        | No.              | %        | No.                | %         | No.         | %          |
| N East, Yorks & Humber                                             | 430              | 73        | 72                  | 12       | 67                  | 11       | 17               | 3        | 0                  | 0         | 586         | 100        |
| East Midlands                                                      | 304              | 72        | 53                  | 13       | 53                  | 13       | 10               | 2        | 0                  | 0         | 420         | 100        |
| East of England                                                    | 387              | 83        | 36                  | 8        | 34                  | 7        | 6                | 1        | 4                  | 1         | 467         | 100        |
| London                                                             | 224              | 48        | 36                  | 8        | 53                  | 11       | 6                | 1        | 147                | 32        | 466         | 100        |
| South East (East)                                                  | 224              | 60        | 30                  | 8        | 29                  | 8        | 4                | 1        | 88                 | 23        | 375         | 100        |
| South East (West)                                                  | 191              | 60        | 27                  | 9        | 31                  | 10       | 9                | 3        | 58                 | 18        | 316         | 100        |
| South West                                                         | 342              | 73        | 43                  | 9        | 40                  | 9        | 4                | 1        | 40                 | 9         | 469         | 100        |
| West Midlands                                                      | 325              | 78        | 36                  | 9        | 46                  | 11       | 6                | 1        | 2                  | 0         | 415         | 100        |
| North West                                                         | 390              | 64        | 41                  | 7        | 45                  | 7        | 8                | 1        | 128                | 21        | 612         | 100        |
| Wales                                                              | 224              | 74        | 17                  | 6        | 23                  | 8        | 4                | 1        | 34                 | 11        | 302         | 100        |
| Northern Ireland                                                   | 48               | 56        | 11                  | 13       | 15                  | 18       | 1                | 1        | 10                 | 12        | 85          | 100        |
| Scotland                                                           | 308              | 84        | 22                  | 6        | 22                  | 6        | 6                | 2        | 7                  | 2         | 365         | 100        |
| <b>United Kingdom</b>                                              | <b>3397</b>      | <b>70</b> | <b>424</b>          | <b>9</b> | <b>458</b>          | <b>9</b> | <b>81</b>        | <b>2</b> | <b>518</b>         | <b>11</b> | <b>4878</b> | <b>100</b> |

| Table 41 : Treatment for invasive breast cancers <15mm with whole size <15mm |                      |           |            |           |            |          |          |          |             |            |
|------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                                       | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                                              | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                                       | 340                  | 79        | 89         | 21        | 0          | 0        | 1        | 0        | 430         | 100        |
| East Midlands                                                                | 259                  | 85        | 45         | 15        | 0          | 0        | 0        | 0        | 304         | 100        |
| East of England                                                              | 335                  | 87        | 51         | 13        | 0          | 0        | 1        | 0        | 387         | 100        |
| London                                                                       | 206                  | 92        | 18         | 8         | 0          | 0        | 0        | 0        | 224         | 100        |
| South East (East)                                                            | 188                  | 84        | 34         | 15        | 1          | 0        | 1        | 0        | 224         | 100        |
| South East (West)                                                            | 177                  | 93        | 14         | 7         | 0          | 0        | 0        | 0        | 191         | 100        |
| South West                                                                   | 298                  | 87        | 44         | 13        | 0          | 0        | 0        | 0        | 342         | 100        |
| West Midlands                                                                | 288                  | 89        | 37         | 11        | 0          | 0        | 0        | 0        | 325         | 100        |
| North West                                                                   | 327                  | 84        | 63         | 16        | 0          | 0        | 0        | 0        | 390         | 100        |
| Wales                                                                        | 169                  | 75        | 55         | 25        | 0          | 0        | 0        | 0        | 224         | 100        |
| Northern Ireland                                                             | 44                   | 92        | 4          | 8         | 0          | 0        | 0        | 0        | 48          | 100        |
| Scotland                                                                     | 264                  | 86        | 42         | 14        | 2          | 1        | 0        | 0        | 308         | 100        |
| <b>United Kingdom</b>                                                        | <b>2895</b>          | <b>85</b> | <b>496</b> | <b>15</b> | <b>3</b>   | <b>0</b> | <b>3</b> | <b>0</b> | <b>3397</b> | <b>100</b> |

| Table 42 : Treatment for invasive breast cancers <15mm with whole size <15mm or whole size unknown |                      |           |            |           |            |          |          |          |             |            |
|----------------------------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-------------|------------|
| Region                                                                                             | Conservation surgery |           | Mastectomy |           | No surgery |          | Unknown  |          | Total       |            |
|                                                                                                    | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.         | %          |
| N East, Yorks & Humber                                                                             | 340                  | 79        | 89         | 21        | 0          | 0        | 1        | 0        | 430         | 100        |
| East Midlands                                                                                      | 259                  | 85        | 45         | 15        | 0          | 0        | 0        | 0        | 304         | 100        |
| East of England                                                                                    | 337                  | 86        | 52         | 13        | 0          | 0        | 2        | 1        | 391         | 100        |
| London                                                                                             | 331                  | 89        | 40         | 11        | 0          | 0        | 0        | 0        | 371         | 100        |
| South East (East)                                                                                  | 264                  | 85        | 45         | 14        | 1          | 0        | 2        | 1        | 312         | 100        |
| South East (West)                                                                                  | 223                  | 90        | 26         | 10        | 0          | 0        | 0        | 0        | 249         | 100        |
| South West                                                                                         | 325                  | 85        | 56         | 15        | 0          | 0        | 1        | 0        | 382         | 100        |
| West Midlands                                                                                      | 289                  | 88        | 38         | 12        | 0          | 0        | 0        | 0        | 327         | 100        |
| North West                                                                                         | 432                  | 83        | 86         | 17        | 0          | 0        | 0        | 0        | 518         | 100        |
| Wales                                                                                              | 193                  | 75        | 65         | 25        | 0          | 0        | 0        | 0        | 258         | 100        |
| Northern Ireland                                                                                   | 52                   | 90        | 6          | 10        | 0          | 0        | 0        | 0        | 58          | 100        |
| Scotland                                                                                           | 267                  | 85        | 46         | 15        | 2          | 1        | 0        | 0        | 315         | 100        |
| <b>United Kingdom</b>                                                                              | <b>3312</b>          | <b>85</b> | <b>594</b> | <b>15</b> | <b>3</b>   | <b>0</b> | <b>6</b> | <b>0</b> | <b>3915</b> | <b>100</b> |

| Table 43 : Treatment for invasive breast cancers <15mm with whole size 15-<20mm |                      |           |            |           |          |          |            |            |
|---------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|----------|----------|------------|------------|
| Region                                                                          | Conservation surgery |           | Mastectomy |           | Unknown  |          | Total      |            |
|                                                                                 | No.                  | %         | No.        | %         | No.      | %        | No.        | %          |
| N East, Yorks & Humber                                                          | 54                   | 75        | 18         | 25        | 0        | 0        | 72         | 100        |
| East Midlands                                                                   | 37                   | 70        | 16         | 30        | 0        | 0        | 53         | 100        |
| East of England                                                                 | 26                   | 72        | 10         | 28        | 0        | 0        | 36         | 100        |
| London                                                                          | 31                   | 86        | 5          | 14        | 0        | 0        | 36         | 100        |
| South East (East)                                                               | 23                   | 77        | 7          | 23        | 0        | 0        | 30         | 100        |
| South East (West)                                                               | 24                   | 89        | 3          | 11        | 0        | 0        | 27         | 100        |
| South West                                                                      | 34                   | 79        | 9          | 21        | 0        | 0        | 43         | 100        |
| West Midlands                                                                   | 34                   | 94        | 2          | 6         | 0        | 0        | 36         | 100        |
| North West                                                                      | 32                   | 78        | 9          | 22        | 0        | 0        | 41         | 100        |
| Wales                                                                           | 15                   | 88        | 2          | 12        | 0        | 0        | 17         | 100        |
| Northern Ireland                                                                | 10                   | 91        | 1          | 9         | 0        | 0        | 11         | 100        |
| Scotland                                                                        | 16                   | 73        | 5          | 23        | 1        | 5        | 22         | 100        |
| <b>United Kingdom</b>                                                           | <b>336</b>           | <b>79</b> | <b>87</b>  | <b>21</b> | <b>1</b> | <b>0</b> | <b>424</b> | <b>100</b> |

| Table 44 : Treatment for invasive breast cancers <15mm with whole size 20-<50mm |                      |           |            |           |          |          |            |            |
|---------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|----------|----------|------------|------------|
| Region                                                                          | Conservation surgery |           | Mastectomy |           | Unknown  |          | Total      |            |
|                                                                                 | No.                  | %         | No.        | %         | No.      | %        | No.        | %          |
| N East, Yorks & Humber                                                          | 36                   | 54        | 31         | 46        | 0        | 0        | 67         | 100        |
| East Midlands                                                                   | 28                   | 53        | 25         | 47        | 0        | 0        | 53         | 100        |
| East of England                                                                 | 25                   | 74        | 9          | 26        | 0        | 0        | 34         | 100        |
| London                                                                          | 43                   | 81        | 10         | 19        | 0        | 0        | 53         | 100        |
| South East (East)                                                               | 16                   | 55        | 13         | 45        | 0        | 0        | 29         | 100        |
| South East (West)                                                               | 17                   | 55        | 14         | 45        | 0        | 0        | 31         | 100        |
| South West                                                                      | 29                   | 73        | 11         | 28        | 0        | 0        | 40         | 100        |
| West Midlands                                                                   | 28                   | 61        | 18         | 39        | 0        | 0        | 46         | 100        |
| North West                                                                      | 33                   | 73        | 12         | 27        | 0        | 0        | 45         | 100        |
| Wales                                                                           | 16                   | 70        | 7          | 30        | 0        | 0        | 23         | 100        |
| Northern Ireland                                                                | 11                   | 73        | 4          | 27        | 0        | 0        | 15         | 100        |
| Scotland                                                                        | 10                   | 45        | 12         | 55        | 0        | 0        | 22         | 100        |
| <b>United Kingdom</b>                                                           | <b>292</b>           | <b>64</b> | <b>166</b> | <b>36</b> | <b>0</b> | <b>0</b> | <b>458</b> | <b>100</b> |

| Table 45 : Treatment for invasive breast cancers <15mm with whole size 50+mm |                      |           |            |           |            |          |          |          |           |            |
|------------------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|----------|----------|-----------|------------|
| Region                                                                       | Conservation surgery |           | Mastectomy |           | No Surgery |          | Unknown  |          | Total     |            |
|                                                                              | No.                  | %         | No.        | %         | No.        | %        | No.      | %        | No.       | %          |
| N East, Yorks & Humber                                                       | 0                    | 0         | 17         | 100       | 0          | 0        | 0        | 0        | 17        | 100        |
| East Midlands                                                                | 0                    | 0         | 10         | 100       | 0          | 0        | 0        | 0        | 10        | 100        |
| East of England                                                              | 3                    | 50        | 3          | 50        | 0          | 0        | 0        | 0        | 6         | 100        |
| London                                                                       | 0                    | 0         | 6          | 100       | 0          | 0        | 0        | 0        | 6         | 100        |
| South East (East)                                                            | 2                    | 50        | 2          | 50        | 0          | 0        | 0        | 0        | 4         | 100        |
| South East (West)                                                            | 0                    | 0         | 9          | 100       | 0          | 0        | 0        | 0        | 9         | 100        |
| South West                                                                   | 0                    | 0         | 4          | 100       | 0          | 0        | 0        | 0        | 4         | 100        |
| West Midlands                                                                | 4                    | 67        | 2          | 33        | 0          | 0        | 0        | 0        | 6         | 100        |
| North West                                                                   | 0                    | 0         | 8          | 100       | 0          | 0        | 0        | 0        | 8         | 100        |
| Wales                                                                        | 0                    | 0         | 4          | 100       | 0          | 0        | 0        | 0        | 4         | 100        |
| Northern Ireland                                                             | 0                    | 0         | 1          | 100       | 0          | 0        | 0        | 0        | 1         | 100        |
| Scotland                                                                     | 1                    | 17        | 5          | 83        | 0          | 0        | 0        | 0        | 6         | 100        |
| <b>United Kingdom</b>                                                        | <b>10</b>            | <b>12</b> | <b>71</b>  | <b>88</b> | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>81</b> | <b>100</b> |

| Table 46 : Immediate reconstruction with mastectomy (all cancers) |                          |          |                              |           |            |           |                    |            |
|-------------------------------------------------------------------|--------------------------|----------|------------------------------|-----------|------------|-----------|--------------------|------------|
| Region                                                            | Immediate Reconstruction |          | No Immediate Reconstruction* |           | Unknown    |           | Total Mastectomies |            |
|                                                                   | No.                      | %        | No.                          | %         | No.        | %         | No.                | %          |
| N East, Yorks & Humber                                            | 30                       | 6        | 355                          | 69        | 129        | 25        | 514                | 100        |
| East Midlands                                                     | 15                       | 5        | 262                          | 95        | 0          | 0         | 277                | 100        |
| East of England                                                   | 27                       | 9        | 201                          | 68        | 67         | 23        | 295                | 100        |
| London                                                            | 10                       | 5        | 84                           | 40        | 118        | 56        | 212                | 100        |
| South East (East)                                                 | 22                       | 10       | 17                           | 8         | 184        | 83        | 223                | 100        |
| South East (West)                                                 | 21                       | 11       | 95                           | 49        | 79         | 41        | 195                | 100        |
| South West                                                        | 25                       | 9        | 173                          | 64        | 73         | 27        | 271                | 100        |
| West Midlands                                                     | 26                       | 9        | 251                          | 90        | 2          | 1         | 279                | 100        |
| North West                                                        | 23                       | 6        | 232                          | 62        | 121        | 32        | 376                | 100        |
| Wales                                                             | 33                       | 14       | 200                          | 86        | 0          | 0         | 233                | 100        |
| Northern Ireland                                                  | 1                        | 2        | 26                           | 53        | 22         | 45        | 49                 | 100        |
| Scotland                                                          | 31                       | 12       | 210                          | 84        | 9          | 4         | 250                | 100        |
| <b>United Kingdom</b>                                             | <b>264</b>               | <b>8</b> | <b>2106</b>                  | <b>66</b> | <b>804</b> | <b>25</b> | <b>3174</b>        | <b>100</b> |

\*May include some cases with immediate reconstruction not recorded at the breast unit.

| Table 47: Invasive status of immediate reconstruction after mastectomy |            |           |                |          |              |           |            |            |
|------------------------------------------------------------------------|------------|-----------|----------------|----------|--------------|-----------|------------|------------|
| Region                                                                 | Invasive   |           | Micro-invasive |          | Non-invasive |           | Total      |            |
|                                                                        | No.        | %         | No.            | %        | No.          | %         | No.        | %          |
| N East, Yorks & Humber                                                 | 16         | 53        | 1              | 3        | 13           | 43        | 30         | 100        |
| East Midlands                                                          | 8          | 53        | 0              | 0        | 7            | 47        | 15         | 100        |
| East of England                                                        | 22         | 81        | 0              | 0        | 5            | 19        | 27         | 100        |
| London                                                                 | 6          | 60        | 0              | 0        | 4            | 40        | 10         | 100        |
| South East (East)                                                      | 14         | 64        | 1              | 5        | 7            | 32        | 22         | 100        |
| South East (West)                                                      | 13         | 62        | 1              | 5        | 7            | 33        | 21         | 100        |
| South West                                                             | 17         | 68        | 0              | 0        | 8            | 32        | 25         | 100        |
| West Midlands                                                          | 9          | 35        | 1              | 4        | 16           | 62        | 26         | 100        |
| North West                                                             | 15         | 65        | 1              | 4        | 7            | 30        | 23         | 100        |
| Wales                                                                  | 18         | 55        | 0              | 0        | 15           | 45        | 33         | 100        |
| Northern Ireland                                                       | 0          | 0         | 0              | 0        | 1            | 100       | 1          | 100        |
| Scotland                                                               | 18         | 58        | 0              | 0        | 13           | 42        | 31         | 100        |
| <b>United Kingdom</b>                                                  | <b>156</b> | <b>59</b> | <b>5</b>       | <b>2</b> | <b>103</b>   | <b>39</b> | <b>264</b> | <b>100</b> |

| Table 48 : Availability of lymph node status for invasive cancers |                        |                    |           |                                   |          |                   |          |                           |          |
|-------------------------------------------------------------------|------------------------|--------------------|-----------|-----------------------------------|----------|-------------------|----------|---------------------------|----------|
| Region                                                            | Total invasive cancers | Nodal status known |           | Nodes obtained but status unknown |          | No nodes obtained |          | Unknown if nodes obtained |          |
|                                                                   |                        | No.                | %         | No.                               | %        | No.               | %        | No.                       | %        |
| N East, Yorks & Humber                                            | 1134                   | 1086               | 96        | 0                                 | 0        | 45                | 4        | 3                         | 0        |
| East Midlands                                                     | 720                    | 693                | 96        | 0                                 | 0        | 27                | 4        | 0                         | 0        |
| East of England                                                   | 954                    | 871                | 91        | 0                                 | 0        | 77                | 8        | 6                         | 1        |
| London                                                            | 862                    | 760                | 88        | 0                                 | 0        | 83                | 10       | 19                        | 2        |
| South East (East)                                                 | 652                    | 623                | 96        | 0                                 | 0        | 29                | 4        | 0                         | 0        |
| South East (West)                                                 | 596                    | 574                | 96        | 0                                 | 0        | 22                | 4        | 0                         | 0        |
| South West                                                        | 849                    | 807                | 95        | 0                                 | 0        | 42                | 5        | 0                         | 0        |
| West Midlands                                                     | 811                    | 800                | 99        | 0                                 | 0        | 11                | 1        | 0                         | 0        |
| North West                                                        | 1141                   | 1067               | 94        | 0                                 | 0        | 69                | 6        | 5                         | 0        |
| Wales                                                             | 532                    | 527                | 99        | 0                                 | 0        | 5                 | 1        | 0                         | 0        |
| Northern Ireland                                                  | 163                    | 140                | 86        | 0                                 | 0        | 9                 | 6        | 14                        | 9        |
| Scotland                                                          | 672                    | 659                | 98        | 0                                 | 0        | 13                | 2        | 0                         | 0        |
| <b>United Kingdom</b>                                             | <b>9086</b>            | <b>8607</b>        | <b>95</b> | <b>0</b>                          | <b>0</b> | <b>432</b>        | <b>5</b> | <b>47</b>                 | <b>1</b> |

| Table 49 : Nodal status of nodes with status known for invasive cancers |                          |             |           |             |           |
|-------------------------------------------------------------------------|--------------------------|-------------|-----------|-------------|-----------|
| Region                                                                  | Total known nodal status | Positive    |           | Negative    |           |
|                                                                         |                          | No.         | %         | No.         | %         |
| N East, Yorks & Humber                                                  | 1086                     | 265         | 24        | 821         | 76        |
| East Midlands                                                           | 693                      | 162         | 23        | 531         | 77        |
| East of England                                                         | 871                      | 211         | 24        | 660         | 76        |
| London                                                                  | 760                      | 194         | 26        | 566         | 74        |
| South East (East)                                                       | 623                      | 158         | 25        | 465         | 75        |
| South East (West)                                                       | 574                      | 157         | 27        | 417         | 73        |
| South West                                                              | 807                      | 200         | 25        | 607         | 75        |
| West Midlands                                                           | 800                      | 217         | 27        | 583         | 73        |
| North West                                                              | 1067                     | 253         | 24        | 814         | 76        |
| Wales                                                                   | 527                      | 123         | 23        | 404         | 77        |
| Northern Ireland                                                        | 140                      | 38          | 27        | 102         | 73        |
| Scotland                                                                | 659                      | 155         | 24        | 504         | 76        |
| <b>United Kingdom</b>                                                   | <b>8607</b>              | <b>2133</b> | <b>25</b> | <b>6474</b> | <b>75</b> |

| Table 50 : Average number of nodes obtained for invasive cancers |                                                |                               |                                 |
|------------------------------------------------------------------|------------------------------------------------|-------------------------------|---------------------------------|
| Region                                                           | Total invasive cancers with known nodal status | Mean number of nodes examined | Median number of nodes examined |
| N East, Yorks & Humber                                           | 1086                                           | 11                            | 9                               |
| East Midlands                                                    | 693                                            | 8                             | 6                               |
| East of England                                                  | 871                                            | 10                            | 10                              |
| London                                                           | 760                                            | 12                            | 11                              |
| South East (East)                                                | 623                                            | 10                            | 8                               |
| South East (West)                                                | 574                                            | 11                            | 11                              |
| South West                                                       | 807                                            | 11                            | 10                              |
| West Midlands                                                    | 800                                            | 11                            | 10                              |
| North West                                                       | 1067                                           | 11                            | 10                              |
| Wales                                                            | 527                                            | 11                            | 10                              |
| Northern Ireland                                                 | 140                                            | 15                            | 15                              |
| Scotland                                                         | 659                                            | 11                            | 10                              |
| <b>United Kingdom</b>                                            | <b>8607</b>                                    | <b>11</b>                     | <b>10</b>                       |

| Table 51 : Status of cases with <4 nodes obtained for invasive cancers |                               |                                              |            |                         |            |                      |            |                         |            |                      |            |
|------------------------------------------------------------------------|-------------------------------|----------------------------------------------|------------|-------------------------|------------|----------------------|------------|-------------------------|------------|----------------------|------------|
| Region                                                                 | Total with nodal status known | Nodal status determined on basis of <4 nodes |            | Positive                |            |                      |            | Negative                |            |                      |            |
|                                                                        |                               |                                              |            | Sentinel node procedure |            | Other node procedure |            | Sentinel node procedure |            | Other node procedure |            |
|                                                                        |                               | No.                                          | %          | No.                     | %          | No.                  | %          | No.                     | %          | No.                  | %          |
| N East, Yorks & Humber                                                 | 1086                          | 32                                           | 2.9        | 0                       | 0.0        | 4                    | 0.4        | 0                       | 0.0        | 28                   | 2.6        |
| East Midlands                                                          | 693                           | 35                                           | 5.1        | 1                       | 0.1        | 2                    | 0.3        | 5                       | 0.7        | 27                   | 3.9        |
| East of England                                                        | 871                           | 64                                           | 7.3        | 2                       | 0.2        | 6                    | 0.7        | 26                      | 3.0        | 30                   | 3.4        |
| London                                                                 | 760                           | 58                                           | 7.6        | 0                       | 0.0        | 3                    | 0.4        | 4                       | 0.5        | 51                   | 6.7        |
| South East (East)                                                      | 623                           | 59                                           | 9.5        | 1                       | 0.2        | 2                    | 0.3        | 25                      | 4.0        | 31                   | 5.0        |
| South East (West)                                                      | 574                           | 25                                           | 4.4        | 1                       | 0.2        | 0                    | 0.0        | 7                       | 1.2        | 17                   | 3.0        |
| South West                                                             | 807                           | 33                                           | 4.1        | 1                       | 0.1        | 3                    | 0.4        | 4                       | 0.5        | 25                   | 3.1        |
| West Midlands                                                          | 800                           | 35                                           | 4.4        | 0                       | 0.0        | 6                    | 0.8        | 7                       | 0.9        | 22                   | 2.8        |
| North West                                                             | 1067                          | 72                                           | 6.7        | 0                       | 0.0        | 11                   | 1.0        | 0                       | 0.0        | 61                   | 5.7        |
| Wales                                                                  | 527                           | 15                                           | 2.8        | 0                       | 0.0        | 0                    | 0.0        | 2                       | 0.4        | 13                   | 2.5        |
| Northern Ireland                                                       | 140                           | 1                                            | 0.7        | 0                       | 0.0        | 0                    | 0.0        | 0                       | 0.0        | 1                    | 0.7        |
| Scotland                                                               | 659                           | 17                                           | 2.6        | 0                       | 0.0        | 2                    | 0.3        | 1                       | 0.2        | 14                   | 2.1        |
| <b>United Kingdom</b>                                                  | <b>8607</b>                   | <b>446</b>                                   | <b>5.2</b> | <b>6</b>                | <b>0.1</b> | <b>39</b>            | <b>0.5</b> | <b>81</b>               | <b>0.9</b> | <b>320</b>           | <b>3.7</b> |

| Table 52: Availability of lymph node status for non-invasive cancers |                            |                    |           |                                   |          |                   |           |                           |          |
|----------------------------------------------------------------------|----------------------------|--------------------|-----------|-----------------------------------|----------|-------------------|-----------|---------------------------|----------|
| Region                                                               | Total non-invasive cancers | Nodal status known |           | Nodes obtained but status unknown |          | No nodes obtained |           | Unknown if nodes obtained |          |
|                                                                      |                            | No.                | %         | No.                               | %        | No.               | %         | No.                       | %        |
| N East, Yorks & Humber                                               | 306                        | 95                 | 31        | 0                                 | 0        | 210               | 69        | 1                         | 0        |
| East Midlands                                                        | 192                        | 61                 | 32        | 0                                 | 0        | 131               | 68        | 0                         | 0        |
| East of England                                                      | 262                        | 46                 | 18        | 0                                 | 0        | 216               | 82        | 0                         | 0        |
| London                                                               | 260                        | 49                 | 19        | 0                                 | 0        | 204               | 78        | 7                         | 3        |
| South East (East)                                                    | 196                        | 43                 | 22        | 0                                 | 0        | 153               | 78        | 0                         | 0        |
| South East (West)                                                    | 135                        | 43                 | 32        | 0                                 | 0        | 92                | 68        | 0                         | 0        |
| South West                                                           | 198                        | 44                 | 22        | 0                                 | 0        | 154               | 78        | 0                         | 0        |
| West Midlands                                                        | 210                        | 49                 | 23        | 0                                 | 0        | 160               | 76        | 1                         | 0        |
| North West                                                           | 244                        | 70                 | 29        | 0                                 | 0        | 173               | 71        | 1                         | 0        |
| Wales                                                                | 120                        | 44                 | 37        | 0                                 | 0        | 76                | 63        | 0                         | 0        |
| Northern Ireland                                                     | 49                         | 8                  | 16        | 0                                 | 0        | 20                | 41        | 21                        | 43       |
| Scotland                                                             | 176                        | 53                 | 30        | 0                                 | 0        | 123               | 70        | 0                         | 0        |
| <b>United Kingdom</b>                                                | <b>2348</b>                | <b>605</b>         | <b>26</b> | <b>0</b>                          | <b>0</b> | <b>1712</b>       | <b>73</b> | <b>31</b>                 | <b>1</b> |

| Table 53 : Nodal status of nodes with status known for non-invasive cancers |                          |           |          |            |           |
|-----------------------------------------------------------------------------|--------------------------|-----------|----------|------------|-----------|
| Region                                                                      | Total known nodal status | Positive  |          | Negative   |           |
|                                                                             |                          | No.       | %        | No.        | %         |
| N East, Yorks & Humber                                                      | 95                       | 3         | 3        | 92         | 97        |
| East Midlands                                                               | 61                       | 0         | 0        | 61         | 100       |
| East of England                                                             | 46                       | 0         | 0        | 46         | 100       |
| London                                                                      | 49                       | 4         | 8        | 45         | 92        |
| South East (East)                                                           | 43                       | 0         | 0        | 43         | 100       |
| South East (West)                                                           | 43                       | 0         | 0        | 43         | 100       |
| South West                                                                  | 44                       | 1         | 2        | 43         | 98        |
| West Midlands                                                               | 49                       | 0         | 0        | 49         | 100       |
| North West                                                                  | 70                       | 2         | 3        | 68         | 97        |
| Wales                                                                       | 44                       | 0         | 0        | 44         | 100       |
| Northern Ireland                                                            | 8                        | 0         | 0        | 8          | 100       |
| Scotland                                                                    | 53                       | 1         | 2        | 52         | 98        |
| <b>United Kingdom</b>                                                       | <b>605</b>               | <b>11</b> | <b>2</b> | <b>594</b> | <b>98</b> |

| Table 54 : Average number of nodes obtained for non-invasive cancers |                                                    |                               |                                 |
|----------------------------------------------------------------------|----------------------------------------------------|-------------------------------|---------------------------------|
| Region                                                               | Total non-invasive cancers with known nodal status | Mean number of nodes examined | Median number of nodes examined |
| N East, Yorks & Humber                                               | 95                                                 | 8                             | 6                               |
| East Midlands                                                        | 61                                                 | 6                             | 6                               |
| East of England                                                      | 46                                                 | 8                             | 7                               |
| London                                                               | 49                                                 | 8                             | 6                               |
| South East (East)                                                    | 43                                                 | 6                             | 5                               |
| South East (West)                                                    | 43                                                 | 7                             | 5                               |
| South West                                                           | 44                                                 | 7                             | 6                               |
| West Midlands                                                        | 49                                                 | 7                             | 6                               |
| North West                                                           | 70                                                 | 6                             | 5                               |
| Wales                                                                | 44                                                 | 6                             | 5                               |
| Northern Ireland                                                     | 8                                                  | 16                            | 14                              |
| Scotland                                                             | 53                                                 | 5                             | 5                               |
| <b>United Kingdom</b>                                                | <b>605</b>                                         | <b>7</b>                      | <b>5</b>                        |

| Table 55 : Treatment for non-invasive cancers with known nodal status |                          |              |           |            |           |
|-----------------------------------------------------------------------|--------------------------|--------------|-----------|------------|-----------|
| Region                                                                | Total known nodal status | Conservation |           | Mastectomy |           |
|                                                                       |                          | No.          | %         | No.        | %         |
| N East, Yorks & Humber                                                | 95                       | 21           | 22        | 74         | 78        |
| East Midlands                                                         | 61                       | 12           | 20        | 49         | 80        |
| East of England                                                       | 46                       | 13           | 28        | 33         | 72        |
| London                                                                | 49                       | 17           | 35        | 32         | 65        |
| South East (East)                                                     | 43                       | 11           | 26        | 32         | 74        |
| South East (West)                                                     | 43                       | 5            | 12        | 38         | 88        |
| South West                                                            | 44                       | 6            | 14        | 38         | 86        |
| West Midlands                                                         | 49                       | 14           | 29        | 35         | 71        |
| North West                                                            | 70                       | 29           | 41        | 41         | 59        |
| Wales                                                                 | 44                       | 6            | 14        | 38         | 86        |
| Northern Ireland                                                      | 8                        | 4            | 50        | 4          | 50        |
| Scotland                                                              | 53                       | 6            | 11        | 47         | 89        |
| <b>United Kingdom</b>                                                 | <b>605</b>               | <b>144</b>   | <b>24</b> | <b>461</b> | <b>76</b> |

| Table 56: Pre-operative history for non-invasive cancers with known nodal status treated by conservation surgery |            |            |           |            |           |                  |          |           |           |           |          |
|------------------------------------------------------------------------------------------------------------------|------------|------------|-----------|------------|-----------|------------------|----------|-----------|-----------|-----------|----------|
| Region                                                                                                           | Total      | B5a +/- C5 |           | B5b +/- C5 |           | B5c & Unknown B5 |          | C5 only   |           | No C5/B5  |          |
|                                                                                                                  |            | No         | %         | No         | %         | No               | %        | No        | %         | No        | %        |
| N East, Yorks & Humber                                                                                           | 21         | 10         | 48        | 3          | 14        | 2                | 10       | 4         | 19        | 2         | 10       |
| East Midlands                                                                                                    | 12         | 7          | 58        | 2          | 17        | 0                | 0        | 1         | 8         | 2         | 17       |
| East of England                                                                                                  | 13         | 6          | 46        | 3          | 23        | 1                | 8        | 0         | 0         | 3         | 23       |
| London                                                                                                           | 17         | 8          | 47        | 7          | 41        | 0                | 0        | 1         | 6         | 1         | 6        |
| South East (East)                                                                                                | 11         | 8          | 73        | 0          | 0         | 0                | 0        | 1         | 9         | 2         | 18       |
| South East (West)                                                                                                | 5          | 4          | 80        | 0          | 0         | 0                | 0        | 1         | 20        | 0         | 0        |
| South West                                                                                                       | 6          | 5          | 83        | 1          | 17        | 0                | 0        | 0         | 0         | 0         | 0        |
| West Midlands                                                                                                    | 14         | 8          | 57        | 2          | 14        | 0                | 0        | 4         | 29        | 0         | 0        |
| North West                                                                                                       | 29         | 19         | 66        | 3          | 10        | 1                | 3        | 4         | 14        | 2         | 7        |
| Wales                                                                                                            | 6          | 4          | 67        | 2          | 33        | 0                | 0        | 0         | 0         | 0         | 0        |
| Northern Ireland                                                                                                 | 4          | 0          | 0         | 1          | 25        | 0                | 0        | 3         | 75        | 0         | 0        |
| Scotland                                                                                                         | 6          | 2          | 33        | 1          | 17        | 0                | 0        | 2         | 33        | 1         | 17       |
| <b>United Kingdom</b>                                                                                            | <b>144</b> | <b>81</b>  | <b>56</b> | <b>25</b>  | <b>17</b> | <b>4</b>         | <b>3</b> | <b>21</b> | <b>15</b> | <b>13</b> | <b>9</b> |

| Table 57: Treatment for non-invasive cancers with no nodes obtained |             |              |           |            |           |            |          |
|---------------------------------------------------------------------|-------------|--------------|-----------|------------|-----------|------------|----------|
| Region                                                              | Total       | Conservation |           | Mastectomy |           | No Surgery |          |
|                                                                     |             | No.          | %         | No.        | %         | No.        | %        |
| N East, Yorks & Humber                                              | 210         | 167          | 80        | 40         | 19        | 3          | 1        |
| East Midlands                                                       | 131         | 116          | 89        | 13         | 10        | 2          | 2        |
| East of England                                                     | 216         | 175          | 81        | 38         | 18        | 3          | 1        |
| London                                                              | 204         | 176          | 86        | 18         | 9         | 10         | 5        |
| South East (East)                                                   | 153         | 130          | 85        | 18         | 12        | 5          | 3        |
| South East (West)                                                   | 92          | 84           | 91        | 7          | 8         | 1          | 1        |
| South West                                                          | 154         | 133          | 86        | 19         | 12        | 2          | 1        |
| West Midlands                                                       | 160         | 127          | 79        | 31         | 19        | 2          | 1        |
| North West                                                          | 173         | 155          | 90        | 16         | 9         | 2          | 1        |
| Wales                                                               | 76          | 63           | 83        | 11         | 14        | 2          | 3        |
| Northern Ireland                                                    | 20          | 18           | 90        | 2          | 10        | 0          | 0        |
| Scotland                                                            | 123         | 114          | 93        | 9          | 7         | 0          | 0        |
| <b>United Kingdom</b>                                               | <b>1712</b> | <b>1458</b>  | <b>85</b> | <b>222</b> | <b>13</b> | <b>32</b>  | <b>2</b> |

| Table 58 : Grade of invasive cancers |             |           |             |           |             |           |                |          |            |          |             |            |
|--------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|----------------|----------|------------|----------|-------------|------------|
| Region                               | Grade I     |           | Grade II    |           | Grade III   |           | Not Assessable |          | Unknown    |          | Total       |            |
|                                      | No.         | %         | No.         | %         | No.         | %         | No.            | %        | No.        | %        | No.         | %          |
| N East, Yorks & Humber               | 418         | 37        | 514         | 45        | 179         | 16        | 6              | 1        | 17         | 1        | 1134        | 100        |
| East Midlands                        | 239         | 33        | 335         | 47        | 127         | 18        | 18             | 3        | 1          | 0        | 720         | 100        |
| East of England                      | 259         | 27        | 415         | 44        | 119         | 12        | 0              | 0        | 161        | 17       | 954         | 100        |
| London                               | 287         | 33        | 366         | 42        | 166         | 19        | 11             | 1        | 32         | 4        | 862         | 100        |
| South East (East)                    | 211         | 32        | 321         | 49        | 106         | 16        | 4              | 1        | 10         | 2        | 652         | 100        |
| South East (West)                    | 204         | 34        | 272         | 46        | 111         | 19        | 3              | 1        | 6          | 1        | 596         | 100        |
| South West                           | 255         | 30        | 450         | 53        | 128         | 15        | 12             | 1        | 4          | 0        | 849         | 100        |
| West Midlands                        | 276         | 34        | 384         | 47        | 142         | 18        | 3              | 0        | 6          | 1        | 811         | 100        |
| North West                           | 368         | 32        | 546         | 48        | 178         | 16        | 10             | 1        | 39         | 3        | 1141        | 100        |
| Wales                                | 178         | 33        | 271         | 51        | 70          | 13        | 3              | 1        | 10         | 2        | 532         | 100        |
| Northern Ireland                     | 46          | 28        | 73          | 45        | 39          | 24        | 0              | 0        | 5          | 3        | 163         | 100        |
| Scotland                             | 211         | 31        | 302         | 45        | 133         | 20        | 8              | 1        | 18         | 3        | 672         | 100        |
| <b>United Kingdom</b>                | <b>2952</b> | <b>32</b> | <b>4249</b> | <b>47</b> | <b>1498</b> | <b>16</b> | <b>78</b>      | <b>1</b> | <b>309</b> | <b>3</b> | <b>9086</b> | <b>100</b> |

| Table 59 : Data completeness for invasive cancers |                             |    |                         |    |                  |    |                 |    |                   |     |
|---------------------------------------------------|-----------------------------|----|-------------------------|----|------------------|----|-----------------|----|-------------------|-----|
|                                                   | Unknown<br>invasive<br>size |    | Unknown<br>nodal status |    | Unknown<br>grade |    | Unknown<br>NPI* |    | Invasive<br>Total |     |
| Region                                            | No                          | %  | No                      | %  | No               | %  | No              | %  | No                | %   |
| N East, Yorks & Humber                            | 23                          | 2  | 48                      | 4  | 17               | 1  | 54              | 5  | 1134              | 100 |
| East Midlands                                     | 17                          | 2  | 27                      | 4  | 1                | 0  | 29              | 4  | 720               | 100 |
| East of England                                   | 153                         | 16 | 83                      | 9  | 161              | 17 | 217             | 23 | 954               | 100 |
| London                                            | 34                          | 4  | 102                     | 12 | 32               | 4  | 127             | 15 | 862               | 100 |
| South East (East)                                 | 6                           | 1  | 29                      | 4  | 10               | 2  | 37              | 6  | 652               | 100 |
| South East (West)                                 | 7                           | 1  | 22                      | 4  | 6                | 1  | 31              | 5  | 596               | 100 |
| South West                                        | 8                           | 1  | 42                      | 5  | 4                | 0  | 53              | 6  | 849               | 100 |
| West Midlands                                     | 8                           | 1  | 11                      | 1  | 6                | 1  | 17              | 2  | 811               | 100 |
| North West                                        | 44                          | 4  | 74                      | 6  | 39               | 3  | 115             | 10 | 1141              | 100 |
| Wales                                             | 4                           | 1  | 5                       | 1  | 10               | 2  | 16              | 3  | 532               | 100 |
| Northern Ireland                                  | 3                           | 2  | 23                      | 14 | 5                | 3  | 27              | 17 | 163               | 100 |
| Scotland                                          | 13                          | 2  | 13                      | 2  | 18               | 3  | 30              | 4  | 672               | 100 |
| United Kingdom                                    | 320                         | 4  | 479                     | 5  | 309              | 3  | 753             | 8  | 9086              | 100 |

\*NPI is unknown if size, nodal status or grade are unknown or grade is not assessable

| Table 60 : NPI Group of invasive cancers |             |           |             |           |             |           |            |           |            |          |                      |            |
|------------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|------------|-----------|------------|----------|----------------------|------------|
| Region                                   | EPG         |           | GPG         |           | MPG1        |           | MPG2       |           | PPG        |          | Total with known NPI |            |
|                                          | No.         | %         | No.         | %         | No.         | %         | No.        | %         | No.        | %        | No.                  | %          |
| N East, Yorks & Humber                   | 314         | 29        | 362         | 34        | 229         | 21        | 115        | 11        | 60         | 6        | 1080                 | 100        |
| East Midlands                            | 194         | 28        | 248         | 36        | 142         | 21        | 69         | 10        | 38         | 5        | 691                  | 100        |
| East of England                          | 183         | 25        | 283         | 38        | 173         | 23        | 65         | 9         | 33         | 4        | 737                  | 100        |
| London                                   | 205         | 28        | 224         | 30        | 180         | 24        | 78         | 11        | 48         | 7        | 735                  | 100        |
| South East (East)                        | 147         | 24        | 232         | 38        | 145         | 24        | 55         | 9         | 36         | 6        | 615                  | 100        |
| South East (West)                        | 144         | 25        | 188         | 33        | 142         | 25        | 56         | 10        | 35         | 6        | 565                  | 100        |
| South West                               | 177         | 22        | 297         | 37        | 207         | 26        | 76         | 10        | 39         | 5        | 796                  | 100        |
| West Midlands                            | 208         | 26        | 267         | 34        | 182         | 23        | 80         | 10        | 57         | 7        | 794                  | 100        |
| North West                               | 258         | 25        | 373         | 36        | 242         | 24        | 96         | 9         | 57         | 6        | 1026                 | 100        |
| Wales                                    | 142         | 28        | 191         | 37        | 112         | 22        | 44         | 9         | 27         | 5        | 516                  | 100        |
| Northern Ireland                         | 31          | 23        | 43          | 32        | 35          | 26        | 17         | 13        | 10         | 7        | 136                  | 100        |
| Scotland                                 | 172         | 27        | 221         | 34        | 139         | 22        | 70         | 11        | 40         | 6        | 642                  | 100        |
| <b>United Kingdom</b>                    | <b>2175</b> | <b>26</b> | <b>2929</b> | <b>35</b> | <b>1928</b> | <b>23</b> | <b>821</b> | <b>10</b> | <b>480</b> | <b>6</b> | <b>8333</b>          | <b>100</b> |

| Table 61 : Annual screening surgical caseload per surgeon |                |            |           |             |           |             |           |             |           |            |          |
|-----------------------------------------------------------|----------------|------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|------------|----------|
| Region                                                    | Total surgeons | <10 cases  |           | 10-19 cases |           | 20-29 cases |           | 30-99 cases |           | 100+ cases |          |
|                                                           |                | No.        | %         | No.         | %         | No.         | %         | No.         | %         | No.        | %        |
| N East, Yorks & Humber                                    | 63             | 25         | 40        | 8           | 13        | 11          | 17        | 19          | 30        | 0          | 0        |
| East Midlands                                             | 33             | 12         | 36        | 1           | 3         | 4           | 12        | 16          | 48        | 0          | 0        |
| East of England                                           | 54             | 23         | 43        | 5           | 9         | 6           | 11        | 19          | 35        | 1          | 2        |
| London                                                    | 82             | 39         | 48        | 13          | 16        | 11          | 13        | 19          | 23        | 0          | 0        |
| South East (East)                                         | 42             | 11         | 26        | 8           | 19        | 5           | 12        | 17          | 40        | 1          | 2        |
| South East (West)                                         | 41             | 15         | 37        | 5           | 12        | 8           | 20        | 13          | 32        | 0          | 0        |
| South West                                                | 43             | 14         | 33        | 6           | 14        | 6           | 14        | 17          | 40        | 0          | 0        |
| West Midlands                                             | 39             | 4          | 10        | 6           | 15        | 8           | 21        | 21          | 54        | 0          | 0        |
| North West                                                | 58             | 18         | 31        | 13          | 22        | 6           | 10        | 20          | 34        | 1          | 2        |
| Wales                                                     | 23             | 9          | 39        | 1           | 4         | 1           | 4         | 12          | 52        | 0          | 0        |
| Northern Ireland                                          | 12             | 1          | 8         | 7           | 58        | 3           | 25        | 1           | 8         | 0          | 0        |
| Scotland                                                  | 32             | 10         | 31        | 7           | 22        | 5           | 16        | 8           | 25        | 2          | 6        |
| <b>United Kingdom</b>                                     | <b>472</b>     | <b>174</b> | <b>37</b> | <b>70</b>   | <b>15</b> | <b>70</b>   | <b>15</b> | <b>154</b>  | <b>33</b> | <b>4</b>   | <b>0</b> |

NB : The surgeons in each region are credited with their total UK screening caseload.

Surgeons working in more than one region appear in each of these region's figures.

| Table 62 : Screening cases per surgeon |                |             |          |              |           |              |            |
|----------------------------------------|----------------|-------------|----------|--------------|-----------|--------------|------------|
| Region                                 | Total surgeons | Mean        | Min.     | 1st quartile | Median    | 3rd quartile | Max.       |
| N East, Yorks & Humber                 | 63             | 23.0        | 1        | 5            | 17        | 36           | 93         |
| East Midlands                          | 33             | 31.7        | 1        | 6            | 28        | 52           | 90         |
| East of England                        | 54             | 25.2        | 1        | 3            | 18        | 41           | 108        |
| London                                 | 82             | 18.9        | 1        | 2            | 11        | 27           | 87         |
| South East (East)                      | 42             | 30.7        | 1        | 9            | 26        | 46           | 100        |
| South East (West)                      | 41             | 24.0        | 1        | 6            | 21        | 35           | 94         |
| South West                             | 43             | 27.0        | 1        | 8            | 26        | 45           | 95         |
| West Midlands                          | 39             | 32.6        | 1        | 19           | 30        | 38           | 95         |
| North West                             | 58             | 27.7        | 1        | 7            | 18        | 39           | 100        |
| Wales                                  | 23             | 32.4        | 1        | 2            | 32        | 57           | 84         |
| Northern Ireland                       | 12             | 17.9        | 4        | 12           | 16        | 20           | 49         |
| Scotland                               | 32             | 26.7        | 1        | 5            | 17        | 34           | 132        |
| <b>United Kingdom</b>                  | <b>472</b>     | <b>24.6</b> | <b>1</b> | <b>5</b>     | <b>18</b> | <b>37</b>    | <b>132</b> |

| Table 63 : Number of surgeons treating each woman |               |                            |           |            |     |            |   |   |   |               |
|---------------------------------------------------|---------------|----------------------------|-----------|------------|-----|------------|---|---|---|---------------|
| Region                                            | Total cancers | Number of women seen by... |           |            |     |            |   |   |   | Total treated |
|                                                   |               | No surgeon                 | 1 surgeon | 2 surgeons |     | 3 surgeons |   |   |   |               |
| N East, Yorks & Humber                            | 1457          | 22                         | 2         | 1435       | 98  | 0          | 0 | 0 | 0 | 1435          |
| East Midlands                                     | 930           | 0                          | 0         | 930        | 100 | 0          | 0 | 0 | 0 | 930           |
| East of England                                   | 1245          | 9                          | 1         | 1220       | 98  | 16         | 1 | 0 | 0 | 1252          |
| London                                            | 1139          | 17                         | 1         | 1105       | 97  | 16         | 1 | 1 | 0 | 1140          |
| South East (East)                                 | 863           | 8                          | 1         | 855        | 99  | 0          | 0 | 0 | 0 | 855           |
| South East (West)                                 | 738           | 1                          | 0         | 719        | 97  | 18         | 2 | 0 | 0 | 755           |
| South West                                        | 1053          | 9                          | 1         | 1039       | 99  | 5          | 0 | 0 | 0 | 1049          |
| West Midlands                                     | 1034          | 9                          | 1         | 1023       | 99  | 2          | 0 | 0 | 0 | 1027          |
| North West                                        | 1403          | 11                         | 1         | 1323       | 94  | 69         | 5 | 0 | 0 | 1461          |
| Wales                                             | 660           | 6                          | 1         | 647        | 98  | 7          | 1 | 0 | 0 | 661           |
| Northern Ireland                                  | 216           | 1                          | 0         | 215        | 100 | 0          | 0 | 0 | 0 | 215           |
| Scotland                                          | 855           | 1                          | 0         | 854        | 100 | 0          | 0 | 0 | 0 | 854           |
| United Kingdom                                    | 11593         | 94                         | 1         | 11365      | 98  | 133        | 1 | 1 | 0 | 11634         |

| Table 64 : Proportion of women treated according to annual screening caseload of surgeon |               |            |          |             |          |             |           |             |           |            |          |
|------------------------------------------------------------------------------------------|---------------|------------|----------|-------------|----------|-------------|-----------|-------------|-----------|------------|----------|
| Region                                                                                   | Total treated | <10 cases  |          | 10-19 cases |          | 20-29 cases |           | 30-99 cases |           | 100+ cases |          |
|                                                                                          |               | No.        | %        | No.         | %        | No.         | %         | No.         | %         | No.        | %        |
| N East, Yorks & Humber                                                                   | 1435          | 95         | 7        | 112         | 8        | 260         | 18        | 968         | 67        | 0          | 0        |
| East Midlands                                                                            | 930           | 35         | 4        | 11          | 1        | 106         | 11        | 778         | 84        | 0          | 0        |
| East of England                                                                          | 1252          | 70         | 6        | 37          | 3        | 155         | 12        | 882         | 70        | 108        | 9        |
| London                                                                                   | 1140          | 112        | 10       | 161         | 14       | 225         | 20        | 642         | 56        | 0          | 0        |
| South East (East)                                                                        | 855           | 38         | 4        | 88          | 10       | 105         | 12        | 623         | 73        | 1          | 0        |
| South East (West)                                                                        | 755           | 61         | 8        | 55          | 7        | 143         | 19        | 496         | 66        | 0          | 0        |
| South West                                                                               | 1049          | 60         | 6        | 77          | 7        | 163         | 16        | 749         | 71        | 0          | 0        |
| West Midlands                                                                            | 1027          | 16         | 2        | 67          | 7        | 201         | 20        | 743         | 72        | 0          | 0        |
| North West                                                                               | 1461          | 70         | 5        | 178         | 12       | 157         | 11        | 957         | 66        | 99         | 7        |
| Wales                                                                                    | 661           | 18         | 3        | 15          | 2        | 21          | 3         | 607         | 92        | 0          | 0        |
| Northern Ireland                                                                         | 215           | 4          | 2        | 99          | 46       | 63          | 29        | 49          | 23        | 0          | 0        |
| Scotland                                                                                 | 854           | 26         | 3        | 99          | 12       | 124         | 15        | 361         | 42        | 244        | 29       |
| <b>United Kingdom</b>                                                                    | <b>11634</b>  | <b>605</b> | <b>5</b> | <b>999</b>  | <b>9</b> | <b>1723</b> | <b>15</b> | <b>7855</b> | <b>68</b> | <b>452</b> | <b>4</b> |

| Table 65 : Explanations for surgeons treating less than 10 screening cases in 2002/03 |            |                         |                |              |                |                 |                  |                       |                |          |
|---------------------------------------------------------------------------------------|------------|-------------------------|----------------|--------------|----------------|-----------------|------------------|-----------------------|----------------|----------|
| Region                                                                                | Total      | Other caseload >30 year | Joined NHS BSP | Left NHS BSP | Patient choice | Plastic surgeon | Private practice | Not screening in area | No information | Other    |
| N East, Yorks & Humber                                                                | 25         | 13                      | 6              | 3            | 0              | 0               | 2                | 0                     | 0              | 1        |
| East Midlands                                                                         | 12         | 3                       | 1              | 1            | 1              | 1               | 4                | 0                     | 1              | 0        |
| East of England                                                                       | 23         | 0                       | 0              | 0            | 2              | 0               | 0                | 0                     | 21             | 0        |
| London                                                                                | 39         | 11                      | 2              | 2            | 1              | 0               | 0                | 0                     | 23             | 0        |
| South East (East)                                                                     | 11         | 3                       | 4              | 2            | 0              | 0               | 0                | 1                     | 1              | 0        |
| South East (West)                                                                     | 15         | 4                       | 2              | 0            | 2              | 5               | 1                | 0                     | 1              | 0        |
| South West                                                                            | 14         | 2                       | 1              | 2            | 0              | 0               | 2                | 2                     | 5              | 0        |
| West Midlands                                                                         | 4          | 2                       | 1              | 0            | 0              | 1               | 0                | 0                     | 0              | 0        |
| North West                                                                            | 18         | 0                       | 0              | 1            | 12             | 0               | 0                | 0                     | 4              | 1        |
| Wales                                                                                 | 9          | 7                       | 0              | 0            | 1              | 1               | 0                | 0                     | 0              | 0        |
| Northern Ireland                                                                      | 1          | 0                       | 0              | 0            | 0              | 0               | 0                | 0                     | 1              | 0        |
| Scotland                                                                              | 10         | 8                       | 0              | 0            | 2              | 0               | 0                | 0                     | 0              | 0        |
| <b>United Kingdom</b>                                                                 | <b>174</b> | <b>52</b>               | <b>15</b>      | <b>10</b>    | <b>21</b>      | <b>8</b>        | <b>8</b>         | <b>3</b>              | <b>55</b>      | <b>2</b> |

# APPENDIX 6

## DATA FROM THE 2002/03 AUDIT OF SCREEN DETECTED BREAST CANCERS IN WOMEN ALL AGES FOR THE PERIOD 1<sup>ST</sup> APRIL 2002 – 31<sup>ST</sup> MARCH 2003 (NUMBER AND SEQUENCE OF OPERATIONS)

**Table 66 : Number of therapeutic operations for cancers with a pre-operative diagnosis (C5 and/or B5)**

| Region                 | 0          |          | 1           |           | 2           |           | 3+         |          | Unknown   |          | Total        |            | Repeat (2+) rate |           |
|------------------------|------------|----------|-------------|-----------|-------------|-----------|------------|----------|-----------|----------|--------------|------------|------------------|-----------|
|                        | No         | %        | No          | %         | No          | %         | No         | %        | No        | %        | No           | %          | No               | %         |
| N East, Yorks & Humber | 23         | 2        | 1076        | 80        | 226         | 17        | 11         | 1        | 3         | 0        | 1339         | 100        | 237              | 18        |
| East Midlands          | 19         | 2        | 716         | 82        | 132         | 15        | 8          | 1        | 0         | 0        | 875          | 100        | 140              | 16        |
| East of England        | 9          | 1        | 987         | 87        | 107         | 9         | 9          | 1        | 27        | 2        | 1139         | 100        | 116              | 10        |
| London                 | 26         | 3        | 840         | 81        | 142         | 14        | 7          | 1        | 16        | 2        | 1031         | 100        | 149              | 14        |
| South East (East)      | 13         | 2        | 618         | 79        | 133         | 17        | 14         | 2        | 1         | 0        | 779          | 100        | 147              | 19        |
| South East (West)      | 3          | 0        | 574         | 87        | 78          | 12        | 8          | 1        | 0         | 0        | 663          | 100        | 86               | 13        |
| South West             | 10         | 1        | 750         | 78        | 196         | 20        | 11         | 1        | 0         | 0        | 967          | 100        | 207              | 21        |
| West Midlands          | 9          | 1        | 803         | 85        | 123         | 13        | 12         | 1        | 1         | 0        | 948          | 100        | 135              | 14        |
| North West             | 13         | 1        | 1082        | 86        | 143         | 11        | 11         | 1        | 4         | 0        | 1253         | 100        | 154              | 12        |
| Wales                  | 6          | 1        | 520         | 85        | 78          | 13        | 6          | 1        | 0         | 0        | 610          | 100        | 84               | 14        |
| Northern Ireland       | 1          | 1        | 167         | 87        | 23          | 12        | 0          | 0        | 1         | 1        | 192          | 100        | 23               | 12        |
| Scotland               | 12         | 2        | 648         | 83        | 108         | 14        | 11         | 1        | 0         | 0        | 779          | 100        | 119              | 15        |
| <b>United Kingdom</b>  | <b>144</b> | <b>1</b> | <b>8781</b> | <b>83</b> | <b>1489</b> | <b>14</b> | <b>108</b> | <b>1</b> | <b>53</b> | <b>1</b> | <b>10575</b> | <b>100</b> | <b>1597</b>      | <b>15</b> |

**Table 67 : Number of therapeutic operations (invasive cancers)**

| Region                 | 0          |          | 1           |           | 2           |           | 3+        |          | Unknown   |          | Total       |            | Repeat (2+) rate |           |
|------------------------|------------|----------|-------------|-----------|-------------|-----------|-----------|----------|-----------|----------|-------------|------------|------------------|-----------|
|                        | No         | %        | No          | %         | No          | %         | No        | %        | No        | %        | No          | %          | No               | %         |
| N East, Yorks & Humber | 33         | 3        | 921         | 81        | 169         | 15        | 9         | 1        | 2         | 0        | 1134        | 100        | 178              | 16        |
| East Midlands          | 18         | 3        | 597         | 83        | 100         | 14        | 5         | 1        | 0         | 0        | 720         | 100        | 105              | 15        |
| East of England        | 38         | 4        | 817         | 86        | 81          | 8         | 5         | 1        | 13        | 1        | 954         | 100        | 86               | 9         |
| London                 | 36         | 4        | 694         | 81        | 115         | 13        | 6         | 1        | 11        | 1        | 862         | 100        | 121              | 14        |
| South East (East)      | 15         | 2        | 525         | 81        | 102         | 16        | 9         | 1        | 1         | 0        | 652         | 100        | 111              | 17        |
| South East (West)      | 12         | 2        | 520         | 87        | 59          | 10        | 5         | 1        | 0         | 0        | 596         | 100        | 64               | 11        |
| South West             | 14         | 2        | 671         | 79        | 153         | 18        | 11        | 1        | 0         | 0        | 849         | 100        | 164              | 19        |
| West Midlands          | 9          | 1        | 699         | 86        | 95          | 12        | 8         | 1        | 0         | 0        | 811         | 100        | 103              | 13        |
| North West             | 40         | 4        | 983         | 86        | 106         | 9         | 10        | 1        | 2         | 0        | 1141        | 100        | 116              | 10        |
| Wales                  | 5          | 1        | 456         | 86        | 67          | 13        | 4         | 1        | 0         | 0        | 532         | 100        | 71               | 13        |
| Northern Ireland       | 7          | 4        | 140         | 86        | 15          | 9         | 0         | 0        | 1         | 1        | 163         | 100        | 15               | 9         |
| Scotland               | 21         | 3        | 558         | 83        | 87          | 13        | 6         | 1        | 0         | 0        | 672         | 100        | 93               | 14        |
| <b>United Kingdom</b>  | <b>248</b> | <b>3</b> | <b>7581</b> | <b>83</b> | <b>1149</b> | <b>13</b> | <b>78</b> | <b>1</b> | <b>30</b> | <b>0</b> | <b>9086</b> | <b>100</b> | <b>1227</b>      | <b>14</b> |

**Table 68 : Number of therapeutic operations (non-invasive cancers)**

| Region                 | 0          |           | 1           |           | 2          |           | 3+        |          | Unknown  |          | Total       |            | Repeat (2+) rate |           |
|------------------------|------------|-----------|-------------|-----------|------------|-----------|-----------|----------|----------|----------|-------------|------------|------------------|-----------|
|                        | No         | %         | No          | %         | No         | %         | No        | %        | No       | %        | No          | %          | No               | %         |
| N East, Yorks & Humber | 34         | 11        | 214         | 70        | 56         | 18        | 2         | 1        | 0        | 0        | 306         | 100        | 58               | 19        |
| East Midlands          | 17         | 9         | 144         | 75        | 28         | 15        | 3         | 2        | 0        | 0        | 192         | 100        | 31               | 16        |
| East of England        | 30         | 11        | 196         | 75        | 30         | 11        | 4         | 2        | 2        | 1        | 262         | 100        | 34               | 13        |
| London                 | 47         | 18        | 182         | 70        | 27         | 10        | 1         | 0        | 3        | 1        | 260         | 100        | 28               | 11        |
| South East (East)      | 32         | 16        | 127         | 65        | 32         | 16        | 5         | 3        | 0        | 0        | 196         | 100        | 37               | 19        |
| South East (West)      | 23         | 17        | 87          | 64        | 22         | 16        | 3         | 2        | 0        | 0        | 135         | 100        | 25               | 19        |
| South West             | 22         | 11        | 129         | 65        | 47         | 24        | 0         | 0        | 0        | 0        | 198         | 100        | 47               | 24        |
| West Midlands          | 29         | 14        | 145         | 69        | 31         | 15        | 4         | 2        | 1        | 0        | 210         | 100        | 35               | 17        |
| North West             | 43         | 18        | 160         | 66        | 39         | 16        | 1         | 0        | 1        | 0        | 244         | 100        | 40               | 16        |
| Wales                  | 11         | 9         | 97          | 81        | 10         | 8         | 2         | 2        | 0        | 0        | 120         | 100        | 12               | 10        |
| Northern Ireland       | 14         | 29        | 27          | 55        | 8          | 16        | 0         | 0        | 0        | 0        | 49          | 100        | 8                | 16        |
| Scotland               | 33         | 19        | 113         | 64        | 25         | 14        | 5         | 3        | 0        | 0        | 176         | 100        | 30               | 17        |
| <b>United Kingdom</b>  | <b>335</b> | <b>14</b> | <b>1621</b> | <b>69</b> | <b>355</b> | <b>15</b> | <b>30</b> | <b>1</b> | <b>7</b> | <b>0</b> | <b>2348</b> | <b>100</b> | <b>385</b>       | <b>16</b> |

**Table 69 : Number of therapeutic operations (B5b (Invasive) core biopsies : invasive after surgery)**

| Region                 | 1           |           | 2          |           | 3+        |          | Unknown   |          | Total       |            | Repeat (2+) rate |           |
|------------------------|-------------|-----------|------------|-----------|-----------|----------|-----------|----------|-------------|------------|------------------|-----------|
|                        | No          | %         | No         | %         | No        | %        | No        | %        | No          | %          | No               | %         |
| N East, Yorks & Humber | 696         | 87        | 101        | 13        | 3         | 0        | 2         | 0        | 802         | 100        | 104              | 13        |
| East Midlands          | 483         | 87        | 71         | 13        | 3         | 1        | 0         | 0        | 557         | 100        | 74               | 13        |
| East of England        | 606         | 92        | 45         | 7         | 3         | 0        | 2         | 0        | 656         | 100        | 48               | 7         |
| London                 | 576         | 86        | 75         | 11        | 5         | 1        | 10        | 2        | 666         | 100        | 80               | 12        |
| South East (East)      | 413         | 85        | 65         | 13        | 6         | 1        | 1         | 0        | 485         | 100        | 71               | 15        |
| South East (West)      | 371         | 89        | 43         | 10        | 4         | 1        | 0         | 0        | 418         | 100        | 47               | 11        |
| South West             | 567         | 82        | 116        | 17        | 7         | 1        | 0         | 0        | 690         | 100        | 123              | 18        |
| West Midlands          | 586         | 90        | 61         | 9         | 4         | 1        | 0         | 0        | 651         | 100        | 65               | 10        |
| North West             | 680         | 90        | 68         | 9         | 8         | 1        | 2         | 0        | 758         | 100        | 76               | 10        |
| Wales                  | 398         | 88        | 50         | 11        | 3         | 1        | 0         | 0        | 451         | 100        | 53               | 12        |
| Northern Ireland       | 60          | 85        | 11         | 15        | 0         | 0        | 0         | 0        | 71          | 100        | 11               | 15        |
| Scotland               | 471         | 88        | 61         | 11        | 6         | 1        | 0         | 0        | 538         | 100        | 67               | 12        |
| <b>United Kingdom</b>  | <b>5907</b> | <b>88</b> | <b>767</b> | <b>11</b> | <b>52</b> | <b>1</b> | <b>17</b> | <b>0</b> | <b>6743</b> | <b>100</b> | <b>819</b>       | <b>12</b> |

**Table 70 : Sequence of operations (B5b (Invasive) core biopsies : invasive after surgery)**

| Region                 | Cons. & Ax  |           | Mx. & Ax    |           | Cons. & Ax then Cons. |          | Cons. & Ax then Mx |          | Other (Ax at 1 <sup>st</sup> op) |          | Other (Ax at later op) |          | Other no Ax |          | Unknown   |          | Total       |            |
|------------------------|-------------|-----------|-------------|-----------|-----------------------|----------|--------------------|----------|----------------------------------|----------|------------------------|----------|-------------|----------|-----------|----------|-------------|------------|
|                        | No.         | %         | No.         | %         | No.                   | %        | No.                | %        | No.                              | %        | No.                    | %        | No.         | %        | No.       | %        | No.         | %          |
| N East, Yorks & Humber | 464         | 58        | 226         | 28        | 45                    | 6        | 36                 | 4        | 20                               | 2        | 4                      | 0        | 5           | 1        | 2         | 0        | 802         | 100        |
| East Midlands          | 328         | 59        | 150         | 27        | 48                    | 9        | 14                 | 3        | 12                               | 2        | 0                      | 0        | 5           | 1        | 0         | 0        | 557         | 100        |
| East of England        | 446         | 68        | 131         | 20        | 21                    | 3        | 11                 | 2        | 16                               | 2        | 2                      | 0        | 27          | 4        | 2         | 0        | 656         | 100        |
| London                 | 320         | 48        | 71          | 11        | 29                    | 4        | 11                 | 2        | 11                               | 2        | 10                     | 2        | 204         | 31       | 10        | 2        | 666         | 100        |
| South East (East)      | 304         | 63        | 101         | 21        | 40                    | 8        | 13                 | 3        | 16                               | 3        | 0                      | 0        | 10          | 2        | 1         | 0        | 485         | 100        |
| South East (West)      | 281         | 67        | 85          | 20        | 24                    | 6        | 10                 | 2        | 9                                | 2        | 4                      | 1        | 5           | 1        | 0         | 0        | 418         | 100        |
| South West             | 427         | 62        | 120         | 17        | 52                    | 8        | 29                 | 4        | 39                               | 6        | 2                      | 0        | 21          | 3        | 0         | 0        | 690         | 100        |
| West Midlands          | 439         | 67        | 143         | 22        | 37                    | 6        | 11                 | 2        | 14                               | 2        | 3                      | 0        | 4           | 1        | 0         | 0        | 651         | 100        |
| North West             | 477         | 63        | 177         | 23        | 16                    | 2        | 27                 | 4        | 18                               | 2        | 14                     | 2        | 27          | 4        | 2         | 0        | 758         | 100        |
| Wales                  | 272         | 60        | 125         | 28        | 17                    | 4        | 22                 | 5        | 12                               | 3        | 3                      | 1        | 0           | 0        | 0         | 0        | 451         | 100        |
| Northern Ireland       | 48          | 68        | 10          | 14        | 3                     | 4        | 7                  | 10       | 0                                | 0        | 1                      | 1        | 2           | 3        | 0         | 0        | 71          | 100        |
| Scotland               | 348         | 65        | 119         | 22        | 23                    | 4        | 23                 | 4        | 9                                | 2        | 11                     | 2        | 5           | 1        | 0         | 0        | 538         | 100        |
| <b>United Kingdom</b>  | <b>4154</b> | <b>62</b> | <b>1458</b> | <b>22</b> | <b>355</b>            | <b>5</b> | <b>214</b>         | <b>3</b> | <b>176</b>                       | <b>3</b> | <b>54</b>              | <b>1</b> | <b>315</b>  | <b>5</b> | <b>17</b> | <b>0</b> | <b>6743</b> | <b>100</b> |

**Table 71 : Number of therapeutic operations (invasive cancers with C5 only, no B5)**

| Region                 | 0        |          | 1          |           | 2          |           | 3+       |          | Unknown  |          | Total       |            | Repeat (2+) rate |           |
|------------------------|----------|----------|------------|-----------|------------|-----------|----------|----------|----------|----------|-------------|------------|------------------|-----------|
|                        | No       | %        | No         | %         | No         | %         | No       | %        | No       | %        | No          | %          | No               | %         |
| N East, Yorks & Humber | 0        | 0        | 152        | 79        | 37         | 19        | 4        | 2        | 0        | 0        | 193         | 100        | 41               | 21        |
| East Midlands          | 2        | 2        | 80         | 85        | 11         | 12        | 1        | 1        | 0        | 0        | 94          | 100        | 12               | 13        |
| East of England        | 0        | 0        | 113        | 85        | 14         | 11        | 0        | 0        | 6        | 5        | 133         | 100        | 14               | 11        |
| London                 | 1        | 2        | 38         | 78        | 10         | 20        | 0        | 0        | 0        | 0        | 49          | 100        | 10               | 20        |
| South East (East)      | 0        | 0        | 75         | 78        | 18         | 19        | 3        | 3        | 0        | 0        | 96          | 100        | 21               | 22        |
| South East (West)      | 0        | 0        | 89         | 98        | 2          | 2         | 0        | 0        | 0        | 0        | 91          | 100        | 2                | 2         |
| South West             | 0        | 0        | 34         | 74        | 11         | 24        | 1        | 2        | 0        | 0        | 46          | 100        | 12               | 26        |
| West Midlands          | 0        | 0        | 63         | 88        | 9          | 13        | 0        | 0        | 0        | 0        | 72          | 100        | 9                | 13        |
| North West             | 0        | 0        | 195        | 91        | 19         | 9         | 0        | 0        | 0        | 0        | 214         | 100        | 19               | 9         |
| Wales                  | 0        | 0        | 7          | 88        | 1          | 13        | 0        | 0        | 0        | 0        | 8           | 100        | 1                | 13        |
| Northern Ireland       | 0        | 0        | 61         | 98        | 1          | 2         | 0        | 0        | 0        | 0        | 62          | 100        | 1                | 2         |
| Scotland               | 3        | 4        | 58         | 85        | 7          | 10        | 0        | 0        | 0        | 0        | 68          | 100        | 7                | 10        |
| <b>United Kingdom</b>  | <b>6</b> | <b>1</b> | <b>965</b> | <b>86</b> | <b>140</b> | <b>12</b> | <b>9</b> | <b>1</b> | <b>6</b> | <b>1</b> | <b>1126</b> | <b>100</b> | <b>149</b>       | <b>13</b> |

**Table 72 : Sequence of operations (invasive cancers with C5 only, no B5)**

| Region                 | Cons. & Ax |           | Mx. & Ax   |           | Cons. & Ax then Cons. |          | Cons. & Ax then Mx |          | Other (Ax at 1 <sup>st</sup> op) |          | Other (Ax at later op) |          | Other no Ax |          | Unknown or No Surgery |          | Total       |            |
|------------------------|------------|-----------|------------|-----------|-----------------------|----------|--------------------|----------|----------------------------------|----------|------------------------|----------|-------------|----------|-----------------------|----------|-------------|------------|
|                        | No.        | %         | No.        | %         | No.                   | %        | No.                | %        | No.                              | %        | No.                    | %        | No.         | %        | No.                   | %        | No.         | %          |
| N East, Yorks & Humber | 106        | 55        | 42         | 22        | 17                    | 9        | 13                 | 7        | 9                                | 5        | 2                      | 1        | 4           | 2        | 0                     | 0        | 193         | 100        |
| East Midlands          | 67         | 71        | 10         | 11        | 3                     | 3        | 7                  | 7        | 1                                | 1        | 1                      | 1        | 3           | 3        | 2                     | 2        | 94          | 100        |
| East of England        | 65         | 49        | 18         | 14        | 5                     | 4        | 0                  | 0        | 1                                | 1        | 7                      | 5        | 31          | 23       | 6                     | 5        | 133         | 100        |
| London                 | 24         | 49        | 7          | 14        | 1                     | 2        | 0                  | 0        | 0                                | 0        | 8                      | 16       | 8           | 16       | 1                     | 2        | 49          | 100        |
| South East (East)      | 61         | 64        | 11         | 11        | 12                    | 13       | 2                  | 2        | 5                                | 5        | 2                      | 2        | 3           | 3        | 0                     | 0        | 96          | 100        |
| South East (West)      | 63         | 69        | 23         | 25        | 1                     | 1        | 0                  | 0        | 2                                | 2        | 0                      | 0        | 2           | 2        | 0                     | 0        | 91          | 100        |
| South West             | 29         | 63        | 3          | 7         | 4                     | 9        | 0                  | 0        | 5                                | 11       | 3                      | 7        | 2           | 4        | 0                     | 0        | 46          | 100        |
| West Midlands          | 47         | 65        | 16         | 22        | 2                     | 3        | 3                  | 4        | 2                                | 3        | 2                      | 3        | 0           | 0        | 0                     | 0        | 72          | 100        |
| North West             | 159        | 74        | 33         | 15        | 4                     | 2        | 2                  | 1        | 11                               | 5        | 2                      | 1        | 3           | 1        | 0                     | 0        | 214         | 100        |
| Wales                  | 5          | 63        | 2          | 25        | 0                     | 0        | 0                  | 0        | 0                                | 0        | 1                      | 13       | 0           | 0        | 0                     | 0        | 8           | 100        |
| Northern Ireland       | 48         | 77        | 9          | 15        | 0                     | 0        | 0                  | 0        | 0                                | 0        | 0                      | 0        | 5           | 8        | 0                     | 0        | 62          | 100        |
| Scotland               | 46         | 68        | 11         | 16        | 0                     | 0        | 2                  | 3        | 2                                | 3        | 4                      | 6        | 0           | 0        | 3                     | 4        | 68          | 100        |
| <b>United Kingdom</b>  | <b>720</b> | <b>64</b> | <b>185</b> | <b>16</b> | <b>49</b>             | <b>4</b> | <b>29</b>          | <b>3</b> | <b>38</b>                        | <b>3</b> | <b>32</b>              | <b>3</b> | <b>61</b>   | <b>5</b> | <b>12</b>             | <b>1</b> | <b>1126</b> | <b>100</b> |

**Table 73 : Number of therapeutic operations (B5a (non-invasive) core biopsies : invasive after surgery)**

| Region                 | 1          |           | 2          |           | 3+        |          | Unknown  |          | Total      |            | Repeat (2+) rate |           |
|------------------------|------------|-----------|------------|-----------|-----------|----------|----------|----------|------------|------------|------------------|-----------|
|                        | No         | %         | No         | %         | No        | %        | No       | %        | No         | %          | No               | %         |
| N East, Yorks & Humber | 37         | 54        | 30         | 43        | 2         | 3        | 0        | 0        | 69         | 100        | 32               | 46        |
| East Midlands          | 15         | 47        | 16         | 50        | 1         | 3        | 0        | 0        | 32         | 100        | 17               | 53        |
| East of England        | 31         | 69        | 13         | 29        | 1         | 2        | 0        | 0        | 45         | 100        | 14               | 31        |
| London                 | 39         | 58        | 26         | 39        | 1         | 1        | 1        | 1        | 67         | 100        | 27               | 40        |
| South East (East)      | 19         | 51        | 18         | 49        | 0         | 0        | 0        | 0        | 37         | 100        | 18               | 49        |
| South East (West)      | 23         | 64        | 12         | 33        | 1         | 3        | 0        | 0        | 36         | 100        | 13               | 36        |
| South West             | 42         | 63        | 23         | 34        | 2         | 3        | 0        | 0        | 67         | 100        | 25               | 37        |
| West Midlands          | 23         | 46        | 23         | 46        | 4         | 8        | 0        | 0        | 50         | 100        | 27               | 54        |
| North West             | 43         | 74        | 13         | 22        | 2         | 3        | 0        | 0        | 58         | 100        | 15               | 26        |
| Wales                  | 28         | 62        | 16         | 36        | 1         | 2        | 0        | 0        | 45         | 100        | 17               | 38        |
| Northern Ireland       | 13         | 76        | 3          | 18        | 0         | 0        | 1        | 6        | 17         | 100        | 3                | 18        |
| Scotland               | 9          | 36        | 16         | 64        | 0         | 0        | 0        | 0        | 25         | 100        | 16               | 64        |
| <b>United Kingdom</b>  | <b>322</b> | <b>59</b> | <b>209</b> | <b>38</b> | <b>15</b> | <b>3</b> | <b>2</b> | <b>0</b> | <b>548</b> | <b>100</b> | <b>224</b>       | <b>41</b> |

**Table 74 : Sequence of operations (B5a (Non-invasive) core biopsies : invasive after surgery)**

| Region                 | Mx. & Ax   |           | Cons. & Ax |           | Cons. then Cons. & Ax |           | Cons. then Ax |           | Other (Ax at 1 <sup>st</sup> op) |          | Other (Ax at later op) |           | Other no Ax |           | Unknown  |          | Total      |            |
|------------------------|------------|-----------|------------|-----------|-----------------------|-----------|---------------|-----------|----------------------------------|----------|------------------------|-----------|-------------|-----------|----------|----------|------------|------------|
|                        | No.        | %         | No.        | %         | No.                   | %         | No.           | %         | No.                              | %        | No.                    | %         | No.         | %         | No.      | %        | No.        | %          |
| N East, Yorks & Humber | 21         | 30        | 12         | 17        | 10                    | 14        | 7             | 10        | 5                                | 7        | 10                     | 14        | 4           | 6         | 0        | 0        | 69         | 100        |
| East Midlands          | 10         | 31        | 3          | 9         | 4                     | 13        | 10            | 31        | 1                                | 3        | 2                      | 6         | 2           | 6         | 0        | 0        | 32         | 100        |
| East of England        | 10         | 22        | 11         | 24        | 5                     | 11        | 2             | 4         | 0                                | 0        | 6                      | 13        | 11          | 24        | 0        | 0        | 45         | 100        |
| London                 | 8          | 12        | 13         | 19        | 10                    | 15        | 8             | 12        | 3                                | 4        | 3                      | 4         | 21          | 31        | 1        | 1        | 67         | 100        |
| South East (East)      | 9          | 24        | 3          | 8         | 3                     | 8         | 5             | 14        | 4                                | 11       | 5                      | 14        | 8           | 22        | 0        | 0        | 37         | 100        |
| South East (West)      | 7          | 19        | 12         | 33        | 4                     | 11        | 3             | 8         | 2                                | 6        | 4                      | 11        | 4           | 11        | 0        | 0        | 36         | 100        |
| South West             | 12         | 18        | 24         | 36        | 6                     | 9         | 7             | 10        | 3                                | 4        | 7                      | 10        | 8           | 12        | 0        | 0        | 67         | 100        |
| West Midlands          | 12         | 24        | 8          | 16        | 12                    | 24        | 7             | 14        | 2                                | 4        | 6                      | 12        | 3           | 6         | 0        | 0        | 50         | 100        |
| North West             | 15         | 26        | 18         | 31        | 4                     | 7         | 2             | 3         | 1                                | 2        | 6                      | 10        | 12          | 21        | 0        | 0        | 58         | 100        |
| Wales                  | 14         | 31        | 12         | 27        | 5                     | 11        | 5             | 11        | 4                                | 9        | 3                      | 7         | 2           | 4         | 0        | 0        | 45         | 100        |
| Northern Ireland       | 3          | 18        | 7          | 41        | 0                     | 0         | 0             | 0         | 2                                | 12       | 1                      | 6         | 3           | 18        | 1        | 6        | 17         | 100        |
| Scotland               | 8          | 32        | 1          | 4         | 5                     | 20        | 7             | 28        | 1                                | 4        | 3                      | 12        | 0           | 0         | 0        | 0        | 25         | 100        |
| <b>United Kingdom</b>  | <b>129</b> | <b>24</b> | <b>124</b> | <b>23</b> | <b>68</b>             | <b>12</b> | <b>63</b>     | <b>11</b> | <b>28</b>                        | <b>5</b> | <b>56</b>              | <b>10</b> | <b>78</b>   | <b>14</b> | <b>2</b> | <b>0</b> | <b>548</b> | <b>100</b> |

| Table 75 : Number of therapeutic operations (B5a (non-invasive) core biopsies: non-invasive or micro-invasive after surgery) |             |           |            |           |           |          |          |          |             |            |                  |           |
|------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|------------|-----------|-----------|----------|----------|----------|-------------|------------|------------------|-----------|
| Region                                                                                                                       | 1           |           | 2          |           | 3+        |          | Unknown  |          | Total       |            | Repeat (2+) rate |           |
|                                                                                                                              | No          | %         | No         | %         | No        | %        | No       | %        | No          | %          | No               | %         |
| N East, Yorks & Humber                                                                                                       | 162         | 76        | 49         | 23        | 2         | 1        | 0        | 0        | 213         | 100        | 51               | 24        |
| East Midlands                                                                                                                | 134         | 80        | 31         | 18        | 3         | 2        | 0        | 0        | 168         | 100        | 34               | 20        |
| East of England                                                                                                              | 155         | 86        | 22         | 12        | 4         | 2        | 0        | 0        | 181         | 100        | 26               | 14        |
| London                                                                                                                       | 150         | 85        | 22         | 12        | 1         | 1        | 4        | 2        | 177         | 100        | 23               | 13        |
| South East (East)                                                                                                            | 103         | 74        | 31         | 22        | 5         | 4        | 0        | 0        | 139         | 100        | 36               | 26        |
| South East (West)                                                                                                            | 85          | 79        | 19         | 18        | 3         | 3        | 0        | 0        | 107         | 100        | 22               | 21        |
| South West                                                                                                                   | 103         | 71        | 43         | 29        | 0         | 0        | 0        | 0        | 146         | 100        | 43               | 29        |
| West Midlands                                                                                                                | 124         | 79        | 28         | 18        | 4         | 3        | 1        | 1        | 157         | 100        | 32               | 20        |
| North West                                                                                                                   | 128         | 78        | 35         | 21        | 1         | 1        | 0        | 0        | 164         | 100        | 36               | 22        |
| Wales                                                                                                                        | 79          | 87        | 10         | 11        | 2         | 2        | 0        | 0        | 91          | 100        | 12               | 13        |
| Northern Ireland                                                                                                             | 20          | 71        | 8          | 29        | 0         | 0        | 0        | 0        | 28          | 100        | 8                | 29        |
| Scotland                                                                                                                     | 91          | 78        | 20         | 17        | 5         | 4        | 0        | 0        | 116         | 100        | 25               | 22        |
| <b>United Kingdom</b>                                                                                                        | <b>1334</b> | <b>79</b> | <b>318</b> | <b>19</b> | <b>30</b> | <b>2</b> | <b>5</b> | <b>0</b> | <b>1687</b> | <b>100</b> | <b>348</b>       | <b>21</b> |

| Table 76 : Sequence of operations (B5a (Non-invasive) core biopsies : non-invasive or micro-invasive after surgery) |       |    |          |    |                  |    |     |    |                                  |    |                        |   |             |   |         |   |       |     |
|---------------------------------------------------------------------------------------------------------------------|-------|----|----------|----|------------------|----|-----|----|----------------------------------|----|------------------------|---|-------------|---|---------|---|-------|-----|
|                                                                                                                     | Cons. |    | Mx. & Ax |    | Cons. then Cons. |    | Mx  |    | Other (Ax at 1 <sup>st</sup> op) |    | Other (Ax at later op) |   | Other no Ax |   | Unknown |   | Total |     |
| Region                                                                                                              | No.   | %  | No.      | %  | No.              | %  | No. | %  | No.                              | %  | No.                    | % | No.         | % | No.     | % | No.   | %   |
| N East, Yorks & Humber                                                                                              | 86    | 40 | 49       | 23 | 22               | 10 | 15  | 7  | 14                               | 7  | 17                     | 8 | 10          | 5 | 0       | 0 | 213   | 100 |
| East Midlands                                                                                                       | 78    | 46 | 40       | 24 | 21               | 13 | 8   | 5  | 8                                | 5  | 7                      | 4 | 6           | 4 | 0       | 0 | 168   | 100 |
| East of England                                                                                                     | 102   | 56 | 22       | 12 | 10               | 6  | 25  | 14 | 8                                | 4  | 6                      | 3 | 8           | 4 | 0       | 0 | 181   | 100 |
| London                                                                                                              | 111   | 63 | 15       | 8  | 12               | 7  | 14  | 8  | 11                               | 6  | 5                      | 3 | 5           | 3 | 4       | 2 | 177   | 100 |
| South East (East)                                                                                                   | 64    | 46 | 21       | 15 | 15               | 11 | 11  | 8  | 14                               | 10 | 7                      | 5 | 7           | 5 | 0       | 0 | 139   | 100 |
| South East (West)                                                                                                   | 52    | 49 | 24       | 22 | 9                | 8  | 5   | 5  | 4                                | 4  | 10                     | 9 | 3           | 3 | 0       | 0 | 107   | 100 |
| South West                                                                                                          | 68    | 47 | 22       | 15 | 25               | 17 | 6   | 4  | 10                               | 7  | 12                     | 8 | 3           | 2 | 0       | 0 | 146   | 100 |
| West Midlands                                                                                                       | 76    | 48 | 24       | 15 | 12               | 8  | 18  | 11 | 7                                | 4  | 7                      | 4 | 12          | 8 | 1       | 1 | 157   | 100 |
| North West                                                                                                          | 83    | 51 | 21       | 13 | 16               | 10 | 7   | 4  | 21                               | 13 | 10                     | 6 | 6           | 4 | 0       | 0 | 164   | 100 |
| Wales                                                                                                               | 39    | 43 | 27       | 30 | 7                | 8  | 9   | 10 | 4                                | 4  | 3                      | 3 | 2           | 2 | 0       | 0 | 91    | 100 |
| Northern Ireland                                                                                                    | 14    | 50 | 2        | 7  | 6                | 21 | 3   | 11 | 1                                | 4  | 2                      | 7 | 0           | 0 | 0       | 0 | 28    | 100 |
| Scotland                                                                                                            | 57    | 49 | 32       | 28 | 10               | 9  | 1   | 1  | 4                                | 3  | 11                     | 9 | 1           | 1 | 0       | 0 | 116   | 100 |
| United Kingdom                                                                                                      | 830   | 49 | 299      | 18 | 165              | 10 | 122 | 7  | 106                              | 6  | 97                     | 6 | 63          | 4 | 5       | 0 | 1687  | 100 |

## APPENDIX 7

### ADJUVANT THERAPY AUDIT FOR 1<sup>ST</sup> APRIL 2001 – 31<sup>ST</sup> MARCH 2002 WITH TUMOUR DATA FROM THE 2001/02 AUDIT OF SCREEN DETECTED BREAST CANCERS

**Table 77 : 2001/02 cases supplied to the ABS at EIASO adjuvant audit**

| Region                 | Eligible tumours submitted in 2001/02 | Eligible tumours newly registered since 2001/02* | Total cases in the adjuvant audit | No adjuvant data supplied |           | Some adjuvant data but exclude*** |          | Include     |           |
|------------------------|---------------------------------------|--------------------------------------------------|-----------------------------------|---------------------------|-----------|-----------------------------------|----------|-------------|-----------|
|                        |                                       |                                                  |                                   | No.                       | %         | No.                               | %        | No.         | %         |
| N East, Yorks & Humber | 1261                                  | 0                                                | 1261                              | 251                       | 20        | 0                                 | 0        | 1010        | 80        |
| East Midlands          | 779                                   | 0                                                | 779                               | 0                         | 0         | 0                                 | 0        | 779         | 100       |
| East of England        | 1055                                  | 23                                               | 1078                              | 281                       | 26        | 100                               | 9        | 697         | 65        |
| London                 | 890                                   | 11                                               | 901                               | 205                       | 23        | 10                                | 1        | 686         | 76        |
| South East (East)      | 850                                   | 0                                                | 850                               | 157                       | 18        | 0                                 | 0        | 693         | 82        |
| South East (West)      | 686                                   | 7                                                | 693                               | 102                       | 15        | 1                                 | 0        | 590         | 85        |
| South West             | 937                                   | 4                                                | 941                               | 113                       | 12        | 18                                | 2        | 810         | 86        |
| West Midlands          | 841                                   | 1                                                | 842                               | 164                       | 19        | 6                                 | 1        | 672         | 80        |
| North West             | 1236                                  | 0                                                | 1236                              | 100                       | 8         | 0                                 | 0        | 1136        | 92        |
| Wales                  | 609                                   | 0                                                | 609                               | 5                         | 1         | 0                                 | 0        | 604         | 99        |
| Northern Ireland       | 194                                   | 0                                                | 194                               | 33                        | 17        | 1                                 | 1        | 160         | 82        |
| Scotland               | 853                                   | 39                                               | 892                               | 52                        | 6         | 1                                 | 0        | 839         | 94        |
| <b>United Kingdom</b>  | <b>10191</b>                          | <b>85</b>                                        | <b>10276</b>                      | <b>1463</b>               | <b>14</b> | <b>137</b>                        | <b>1</b> | <b>8676</b> | <b>84</b> |

\*Newly registered tumours included in the adjuvant audit had no tumour data supplied in 2001/02

\*\*East of England include 24 new tumours, but exclude 1 duplicate case

\*\*\*Exclude cases with incomplete surgery data or with treatment prior to first assessment date

**Table 78 : Data completeness for each adjuvant therapy**

| Region                 | Total        | Complete RT |           | Complete CT |           | Complete HT |           | Include     |           |
|------------------------|--------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
|                        |              | No.         | %         | No.         | %         | No.         | %         |             |           |
| N East, Yorks & Humber | 1261         | 931         | 74        | 983         | 78        | 954         | 76        | 1010        | 80        |
| East Midlands          | 779          | 779         | 100       | 779         | 100       | 779         | 100       | 779         | 100       |
| East of England        | 1078         | 628         | 58        | 679         | 63        | 629         | 58        | 697         | 65        |
| London                 | 901          | 630         | 70        | 654         | 73        | 582         | 65        | 686         | 76        |
| South East (East)      | 850          | 640         | 75        | 666         | 78        | 618         | 73        | 693         | 82        |
| South East (West)      | 693          | 585         | 84        | 571         | 82        | 506         | 73        | 590         | 85        |
| South West             | 941          | 765         | 81        | 769         | 82        | 711         | 76        | 810         | 86        |
| West Midlands          | 842          | 621         | 74        | 639         | 76        | 601         | 71        | 672         | 80        |
| North West             | 1236         | 1007        | 81        | 902         | 73        | 1003        | 81        | 1136        | 92        |
| Wales                  | 609          | 601         | 99        | 604         | 99        | 596         | 98        | 604         | 99        |
| Northern Ireland       | 194          | 154         | 79        | 160         | 82        | 150         | 77        | 160         | 82        |
| Scotland               | 892          | 828         | 93        | 839         | 94        | 829         | 93        | 839         | 94        |
| <b>United Kingdom</b>  | <b>10276</b> | <b>8169</b> | <b>79</b> | <b>8245</b> | <b>80</b> | <b>7958</b> | <b>77</b> | <b>8676</b> | <b>84</b> |

**Table 79 : Overall data completeness**

| Region                 | Total eligible | RT, CT and HT complete |           | RT and CT complete |           | Total included |           |
|------------------------|----------------|------------------------|-----------|--------------------|-----------|----------------|-----------|
|                        |                | No.                    | %         | No.                | %         |                |           |
| N East, Yorks & Humber | 1261           | 877                    | 70        | 918                | 73        | 1010           | 80        |
| East Midlands          | 779            | 779                    | 100       | 779                | 100       | 779            | 100       |
| East of England        | 1078           | 577                    | 54        | 619                | 57        | 697            | 65        |
| London                 | 901            | 538                    | 60        | 604                | 67        | 686            | 76        |
| South East (East)      | 850            | 579                    | 68        | 620                | 73        | 693            | 82        |
| South East (West)      | 693            | 501                    | 72        | 567                | 82        | 590            | 85        |
| South West             | 941            | 665                    | 71        | 742                | 79        | 810            | 86        |
| West Midlands          | 842            | 541                    | 64        | 594                | 71        | 672            | 80        |
| North West             | 1236           | 758                    | 61        | 809                | 65        | 1136           | 92        |
| Wales                  | 609            | 593                    | 97        | 601                | 99        | 604            | 99        |
| Northern Ireland       | 194            | 145                    | 75        | 154                | 79        | 160            | 82        |
| Scotland               | 892            | 819                    | 92        | 828                | 93        | 839            | 94        |
| <b>United Kingdom</b>  | <b>10276</b>   | <b>7372</b>            | <b>72</b> | <b>7835</b>        | <b>76</b> | <b>8676</b>    | <b>84</b> |

| Table 80 : Radiotherapy start date |              |           |                 |           |             |            |
|------------------------------------|--------------|-----------|-----------------|-----------|-------------|------------|
| Region                             | Radiotherapy |           | No radiotherapy |           | Total       |            |
|                                    | No           | %         | No              | %         | No          | %          |
| N East, Yorks & Humber             | 577          | 63        | 341             | 37        | 918         | 100        |
| East Midlands                      | 507          | 65        | 272             | 35        | 779         | 100        |
| East of England                    | 405          | 65        | 214             | 35        | 619         | 100        |
| London                             | 377          | 62        | 227             | 38        | 604         | 100        |
| South East (East)                  | 340          | 55        | 280             | 45        | 620         | 100        |
| South East (West)                  | 366          | 65        | 201             | 35        | 567         | 100        |
| South West                         | 468          | 63        | 274             | 37        | 742         | 100        |
| West Midlands                      | 402          | 68        | 192             | 32        | 594         | 100        |
| North West                         | 444          | 55        | 365             | 45        | 809         | 100        |
| Wales                              | 380          | 63        | 221             | 37        | 601         | 100        |
| Northern Ireland                   | 109          | 71        | 45              | 29        | 154         | 100        |
| Scotland                           | 588          | 71        | 240             | 29        | 828         | 100        |
| <b>United Kingdom</b>              | <b>4963</b>  | <b>63</b> | <b>2872</b>     | <b>37</b> | <b>7835</b> | <b>100</b> |

Audit cut-off date 31/03/2003

| Table 81 : Chemotherapy start date |              |           |                 |           |             |            |
|------------------------------------|--------------|-----------|-----------------|-----------|-------------|------------|
| Region                             | Chemotherapy |           | No chemotherapy |           | Total       |            |
|                                    | No           | %         | No              | %         | No          | %          |
| N East, Yorks & Humber             | 128          | 14        | 790             | 86        | 918         | 100        |
| East Midlands                      | 128          | 16        | 651             | 84        | 779         | 100        |
| East of England                    | 100          | 16        | 519             | 84        | 619         | 100        |
| London                             | 104          | 17        | 500             | 83        | 604         | 100        |
| South East (East)                  | 121          | 20        | 499             | 80        | 620         | 100        |
| South East (West)                  | 82           | 14        | 485             | 86        | 567         | 100        |
| South West                         | 119          | 16        | 623             | 84        | 742         | 100        |
| West Midlands                      | 118          | 20        | 476             | 80        | 594         | 100        |
| North West                         | 123          | 15        | 686             | 85        | 809         | 100        |
| Wales                              | 96           | 16        | 505             | 84        | 601         | 100        |
| Northern Ireland                   | 46           | 30        | 108             | 70        | 154         | 100        |
| Scotland                           | 165          | 20        | 663             | 80        | 828         | 100        |
| <b>United Kingdom</b>              | <b>1330</b>  | <b>17</b> | <b>6505</b>     | <b>83</b> | <b>7835</b> | <b>100</b> |

Audit cut-off date 31/03/2003

| Table 82 : Hormonal therapy start date |                  |           |                     |           |             |            |
|----------------------------------------|------------------|-----------|---------------------|-----------|-------------|------------|
| Region                                 | Hormonal therapy |           | No hormonal therapy |           | Total       |            |
|                                        | No               | %         | No                  | %         | No          | %          |
| N East, Yorks & Humber                 | 712              | 75        | 242                 | 25        | 954         | 100        |
| East Midlands                          | 566              | 73        | 213                 | 27        | 779         | 100        |
| East of England                        | 474              | 75        | 155                 | 25        | 629         | 100        |
| London                                 | 393              | 68        | 189                 | 32        | 582         | 100        |
| South East (East)                      | 434              | 70        | 184                 | 30        | 618         | 100        |
| South East (West)                      | 368              | 73        | 138                 | 27        | 506         | 100        |
| South West                             | 523              | 74        | 188                 | 26        | 711         | 100        |
| West Midlands                          | 447              | 74        | 154                 | 26        | 601         | 100        |
| North West                             | 691              | 69        | 312                 | 31        | 1003        | 100        |
| Wales                                  | 411              | 69        | 185                 | 31        | 596         | 100        |
| Northern Ireland                       | 110              | 73        | 40                  | 27        | 150         | 100        |
| Scotland                               | 597              | 72        | 232                 | 28        | 829         | 100        |
| <b>United Kingdom</b>                  | <b>5726</b>      | <b>72</b> | <b>2232</b>         | <b>28</b> | <b>7958</b> | <b>100</b> |

Audit cut-off date 31/03/2003

| Table 83 : Median age of cases with adjuvant therapy compared to overall median age |              |           |              |           |                 |           |             |           |
|-------------------------------------------------------------------------------------|--------------|-----------|--------------|-----------|-----------------|-----------|-------------|-----------|
| Region                                                                              | Radiotherapy |           | Chemotherapy |           | Hormone Therapy |           | Total cases |           |
|                                                                                     | Total cases  | Median    | Total cases  | Median    | Total cases     | Median    | Total cases | Median    |
| N East, Yorks & Humber                                                              | 577          | 58        | 57           | 57        | 712             | 58        | 1010        | 58        |
| East Midlands                                                                       | 507          | 58        | 56           | 56        | 566             | 58        | 779         | 58        |
| East of England                                                                     | 405          | 59        | 56           | 56        | 474             | 60        | 697         | 59        |
| London                                                                              | 377          | 58        | 56           | 55        | 393             | 58        | 686         | 58        |
| South East (East)                                                                   | 340          | 58        | 56           | 55        | 434             | 58        | 693         | 58        |
| South East (West)                                                                   | 366          | 58        | 56           | 56        | 368             | 58        | 590         | 58        |
| South West                                                                          | 468          | 59        | 57           | 57        | 523             | 59        | 810         | 59        |
| West Midlands                                                                       | 402          | 57        | 55           | 55        | 447             | 57        | 672         | 57        |
| North West                                                                          | 444          | 58        | 57           | 56        | 691             | 58        | 1136        | 57        |
| Wales                                                                               | 380          | 58        | 56           | 56        | 411             | 58        | 604         | 58        |
| Northern Ireland                                                                    | 109          | 58        | 57           | 58        | 110             | 58        | 160         | 58        |
| Scotland                                                                            | 588          | 58        | 58           | 57        | 597             | 58        | 839         | 58        |
| <b>United Kingdom</b>                                                               | <b>4963</b>  | <b>58</b> | <b>57</b>    | <b>56</b> | <b>5726</b>     | <b>58</b> | <b>8676</b> | <b>58</b> |

| Table 84 : Median age of cases without adjuvant therapy compared to overall median age |                 |           |                 |           |                    |           |             |           |
|----------------------------------------------------------------------------------------|-----------------|-----------|-----------------|-----------|--------------------|-----------|-------------|-----------|
| Region                                                                                 | No Radiotherapy |           | No Chemotherapy |           | No Hormone Therapy |           | Total cases |           |
|                                                                                        | Total cases     | Median    | Total cases     | Median    | Total cases        | Median    | Total cases | Median    |
| N East, Yorks & Humber                                                                 | 341             | 58        | 790             | 58        | 242                | 57        | 1010        | 58        |
| East Midlands                                                                          | 272             | 58        | 651             | 59        | 213                | 59        | 779         | 58        |
| East of England                                                                        | 214             | 59        | 519             | 60        | 155                | 57        | 697         | 59        |
| London                                                                                 | 227             | 58        | 500             | 58        | 189                | 57        | 686         | 58        |
| South East (East)                                                                      | 280             | 57        | 499             | 58        | 184                | 57        | 693         | 58        |
| South East (West)                                                                      | 201             | 58        | 485             | 58        | 138                | 56        | 590         | 58        |
| South West                                                                             | 274             | 59        | 623             | 59        | 188                | 58        | 810         | 59        |
| West Midlands                                                                          | 192             | 57        | 476             | 57        | 154                | 56        | 672         | 57        |
| North West                                                                             | 365             | 57        | 686             | 58        | 312                | 56        | 1136        | 57        |
| Wales                                                                                  | 221             | 58        | 505             | 59        | 185                | 58        | 604         | 58        |
| Northern Ireland                                                                       | 45              | 58        | 108             | 59        | 40                 | 59        | 160         | 58        |
| Scotland                                                                               | 240             | 59        | 663             | 58        | 232                | 57        | 839         | 58        |
| <b>United Kingdom</b>                                                                  | <b>2872</b>     | <b>58</b> | <b>6505</b>     | <b>58</b> | <b>2232</b>        | <b>57</b> | <b>8676</b> | <b>58</b> |

| Table 85 : Surgery for included cases |            |          |             |           |              |           |             |            |
|---------------------------------------|------------|----------|-------------|-----------|--------------|-----------|-------------|------------|
| Region                                | No surgery |          | 1 operation |           | >1 operation |           | Total       |            |
|                                       | No         | %        | No          | %         | No           | %         | No          | %          |
| N East, Yorks & Humber                | 5          | 0        | 744         | 74        | 261          | 26        | 1010        | 100        |
| East Midlands                         | 6          | 1        | 637         | 82        | 136          | 17        | 779         | 100        |
| East of England                       | 11         | 2        | 498         | 71        | 188          | 27        | 697         | 100        |
| London                                | 11         | 2        | 565         | 82        | 110          | 16        | 686         | 100        |
| South East (East)                     | 3          | 0        | 522         | 75        | 168          | 24        | 693         | 100        |
| South East (West)                     | 4          | 1        | 455         | 77        | 131          | 22        | 590         | 100        |
| South West                            | 3          | 0        | 562         | 69        | 245          | 30        | 810         | 100        |
| West Midlands                         | 0          | 0        | 535         | 80        | 137          | 20        | 672         | 100        |
| North West                            | 6          | 1        | 914         | 80        | 216          | 19        | 1136        | 100        |
| Wales                                 | 6          | 1        | 467         | 77        | 131          | 22        | 604         | 100        |
| Northern Ireland                      | 0          | 0        | 129         | 81        | 31           | 19        | 160         | 100        |
| Scotland                              | 3          | 0        | 692         | 82        | 144          | 17        | 839         | 100        |
| <b>United Kingdom</b>                 | <b>58</b>  | <b>1</b> | <b>6720</b> | <b>77</b> | <b>1898</b>  | <b>22</b> | <b>8676</b> | <b>100</b> |

| Table 86 : First surgery |                                               |           |             |           |           |          |             |            |
|--------------------------|-----------------------------------------------|-----------|-------------|-----------|-----------|----------|-------------|------------|
| Region                   | Diagnostic<br>(no pre-operative<br>diagnosis) |           | Therapeutic |           | Unknown*  |          | Total       |            |
|                          | No                                            | %         | No          | %         | No        | %        | No          | %          |
| N East, Yorks & Humber   | 118                                           | 12        | 887         | 88        | 0         | 0        | 1005        | 100        |
| East Midlands            | 67                                            | 9         | 706         | 91        | 0         | 0        | 773         | 100        |
| East of England          | 55                                            | 8         | 607         | 88        | 24        | 3        | 686         | 100        |
| London                   | 69                                            | 10        | 600         | 89        | 6         | 1        | 675         | 100        |
| South East (East)        | 61                                            | 9         | 629         | 91        | 0         | 0        | 690         | 100        |
| South East (West)        | 86                                            | 15        | 495         | 84        | 5         | 1        | 586         | 100        |
| South West               | 83                                            | 10        | 721         | 89        | 3         | 0        | 807         | 100        |
| West Midlands            | 65                                            | 10        | 606         | 90        | 1         | 0        | 672         | 100        |
| North West               | 158                                           | 14        | 972         | 86        | 0         | 0        | 1130        | 100        |
| Wales                    | 49                                            | 8         | 549         | 92        | 0         | 0        | 598         | 100        |
| Northern Ireland         | 27                                            | 17        | 133         | 83        | 0         | 0        | 160         | 100        |
| Scotland                 | 109                                           | 13        | 695         | 83        | 32        | 4        | 836         | 100        |
| <b>United Kingdom</b>    | <b>947</b>                                    | <b>11</b> | <b>7600</b> | <b>88</b> | <b>71</b> | <b>1</b> | <b>8618</b> | <b>100</b> |

\*Some cases had no tumour data supplied for 2001/02

| Table 87 : Surgery for cases with radiotherapy |            |          |             |           |              |           |             |            |
|------------------------------------------------|------------|----------|-------------|-----------|--------------|-----------|-------------|------------|
| Region                                         | No surgery |          | 1 operation |           | >1 operation |           | Total       |            |
|                                                | No         | %        | No          | %         | No           | %         | No          | %          |
| N East, Yorks & Humber                         | 0          | 0        | 435         | 75        | 142          | 25        | 577         | 100        |
| East Midlands                                  | 1          | 0        | 441         | 87        | 65           | 13        | 507         | 100        |
| East of England                                | 2          | 0        | 315         | 78        | 88           | 22        | 405         | 100        |
| London                                         | 0          | 0        | 319         | 85        | 58           | 15        | 377         | 100        |
| South East (East)                              | 2          | 1        | 265         | 78        | 73           | 21        | 340         | 100        |
| South East (West)                              | 0          | 0        | 301         | 82        | 65           | 18        | 366         | 100        |
| South West                                     | 0          | 0        | 344         | 74        | 124          | 26        | 468         | 100        |
| West Midlands                                  | 0          | 0        | 344         | 86        | 58           | 14        | 402         | 100        |
| North West                                     | 1          | 0        | 371         | 84        | 72           | 16        | 444         | 100        |
| Wales                                          | 0          | 0        | 307         | 81        | 73           | 19        | 380         | 100        |
| Northern Ireland                               | 0          | 0        | 91          | 83        | 18           | 17        | 109         | 100        |
| Scotland                                       | 0          | 0        | 497         | 85        | 91           | 15        | 588         | 100        |
| <b>United Kingdom</b>                          | <b>6</b>   | <b>0</b> | <b>4030</b> | <b>81</b> | <b>927</b>   | <b>19</b> | <b>4963</b> | <b>100</b> |

| Table 88 : Surgery for cases with chemotherapy |            |          |             |           |              |           |             |            |
|------------------------------------------------|------------|----------|-------------|-----------|--------------|-----------|-------------|------------|
| Region                                         | No surgery |          | 1 operation |           | >1 operation |           | Total       |            |
|                                                | No         | %        | No          | %         | No           | %         | No          | %          |
| N East, Yorks & Humber                         | 2          | 2        | 107         | 84        | 19           | 15        | 128         | 100        |
| East Midlands                                  | 2          | 2        | 109         | 85        | 17           | 13        | 128         | 100        |
| East of England                                | 0          | 0        | 71          | 71        | 29           | 29        | 100         | 100        |
| London                                         | 2          | 2        | 90          | 87        | 12           | 12        | 104         | 100        |
| South East (East)                              | 1          | 1        | 97          | 80        | 23           | 19        | 121         | 100        |
| South East (West)                              | 1          | 1        | 68          | 83        | 13           | 16        | 82          | 100        |
| South West                                     | 1          | 1        | 89          | 75        | 29           | 24        | 119         | 100        |
| West Midlands                                  | 0          | 0        | 103         | 87        | 15           | 13        | 118         | 100        |
| North West                                     | 1          | 1        | 103         | 84        | 19           | 15        | 123         | 100        |
| Wales                                          | 0          | 0        | 71          | 74        | 25           | 26        | 96          | 100        |
| Northern Ireland                               | 0          | 0        | 39          | 85        | 7            | 15        | 46          | 100        |
| Scotland                                       | 0          | 0        | 143         | 87        | 22           | 13        | 165         | 100        |
| <b>United Kingdom</b>                          | <b>10</b>  | <b>1</b> | <b>1090</b> | <b>82</b> | <b>230</b>   | <b>17</b> | <b>1330</b> | <b>100</b> |

| Table 89 : Invasive status of included cases |             |           |                |          |              |           |           |          |             |            |
|----------------------------------------------|-------------|-----------|----------------|----------|--------------|-----------|-----------|----------|-------------|------------|
| Region                                       | Invasive    |           | Micro-invasive |          | Non-invasive |           | Unknown   |          | Total       |            |
|                                              | No          | %         | No             | %        | No           | %         | No        | %        | No          | %          |
| N East, Yorks & Humber                       | 783         | 78        | 10             | 1        | 211          | 21        | 6         | 1        | 1010        | 100        |
| East Midlands                                | 605         | 78        | 9              | 1        | 164          | 21        | 1         | 0        | 779         | 100        |
| East of England                              | 523         | 75        | 6              | 1        | 143          | 21        | 25        | 4        | 697         | 100        |
| London                                       | 524         | 76        | 5              | 1        | 147          | 21        | 10        | 1        | 686         | 100        |
| South East (East)                            | 528         | 76        | 13             | 2        | 151          | 22        | 1         | 0        | 693         | 100        |
| South East (West)                            | 460         | 78        | 1              | 0        | 122          | 21        | 7         | 1        | 590         | 100        |
| South West                                   | 620         | 77        | 12             | 1        | 173          | 21        | 5         | 1        | 810         | 100        |
| West Midlands                                | 548         | 82        | 5              | 1        | 118          | 18        | 1         | 0        | 672         | 100        |
| North West                                   | 905         | 80        | 20             | 2        | 210          | 18        | 1         | 0        | 1136        | 100        |
| Wales                                        | 479         | 79        | 9              | 1        | 113          | 19        | 3         | 0        | 604         | 100        |
| Northern Ireland                             | 122         | 76        | 1              | 1        | 37           | 23        | 0         | 0        | 160         | 100        |
| Scotland                                     | 660         | 79        | 7              | 1        | 139          | 17        | 33        | 4        | 839         | 100        |
| <b>United Kingdom</b>                        | <b>6757</b> | <b>78</b> | <b>98</b>      | <b>1</b> | <b>1728</b>  | <b>20</b> | <b>93</b> | <b>1</b> | <b>8676</b> | <b>100</b> |

| Table 90 : ER status   |             |           |            |           |            |          |             |           |             |            |
|------------------------|-------------|-----------|------------|-----------|------------|----------|-------------|-----------|-------------|------------|
| Region                 | Positive    |           | Negative   |           | Not Done   |          | Unknown     |           | Total       |            |
|                        | No          | %         | No         | %         | No         | %        | No          | %         | No          | %          |
| N East, Yorks & Humber | 678         | 67        | 98         | 10        | 87         | 9        | 147         | 15        | 1010        | 100        |
| East Midlands          | 572         | 73        | 73         | 9         | 105        | 13       | 29          | 4         | 779         | 100        |
| East of England        | 503         | 72        | 66         | 9         | 0          | 0        | 128         | 18        | 697         | 100        |
| London                 | 484         | 71        | 81         | 12        | 25         | 4        | 96          | 14        | 686         | 100        |
| South East (East)      | 451         | 65        | 66         | 10        | 0          | 0        | 176         | 25        | 693         | 100        |
| South East (West)      | 441         | 75        | 66         | 11        | 6          | 1        | 77          | 13        | 590         | 100        |
| South West             | 569         | 70        | 88         | 11        | 0          | 0        | 153         | 19        | 810         | 100        |
| West Midlands          | 486         | 72        | 85         | 13        | 10         | 1        | 91          | 14        | 672         | 100        |
| North West             | 719         | 63        | 120        | 11        | 59         | 5        | 238         | 21        | 1136        | 100        |
| Wales                  | 384         | 64        | 29         | 5         | 0          | 0        | 191         | 32        | 604         | 100        |
| Northern Ireland       | 119         | 74        | 28         | 18        | 0          | 0        | 13          | 8         | 160         | 100        |
| Scotland               | 615         | 73        | 63         | 8         | 58         | 7        | 103         | 12        | 839         | 100        |
| <b>United Kingdom</b>  | <b>6021</b> | <b>69</b> | <b>863</b> | <b>10</b> | <b>350</b> | <b>4</b> | <b>1442</b> | <b>17</b> | <b>8676</b> | <b>100</b> |

| Table 91 : Proportion of cases with ER status not done or unknown according to invasive status |            |          |                |           |              |           |           |           |             |           |
|------------------------------------------------------------------------------------------------|------------|----------|----------------|-----------|--------------|-----------|-----------|-----------|-------------|-----------|
| Region                                                                                         | Invasive   |          | Micro-invasive |           | Non-invasive |           | Unknown   |           | Total cases |           |
|                                                                                                | Total      | %        | Total          | %         | Total        | %         | Total     | %         | Total       | %         |
| N East, Yorks & Humber                                                                         | 73         | 9        | 3              | 30        | 153          | 73        | 5         | 83        | 234         | 23        |
| East Midlands                                                                                  | 30         | 5        | 2              | 22        | 102          | 62        | 0         | 0         | 134         | 17        |
| East of England                                                                                | 28         | 5        | 2              | 33        | 96           | 67        | 2         | 8         | 128         | 18        |
| London                                                                                         | 46         | 9        | 2              | 40        | 70           | 48        | 3         | 30        | 121         | 18        |
| South East (East)                                                                              | 80         | 15       | 4              | 31        | 92           | 61        | 0         | 0         | 176         | 25        |
| South East (West)                                                                              | 13         | 3        | 0              | 0         | 66           | 54        | 4         | 57        | 83          | 14        |
| South West                                                                                     | 30         | 5        | 4              | 33        | 117          | 68        | 2         | 40        | 153         | 19        |
| West Midlands                                                                                  | 23         | 4        | 4              | 80        | 73           | 62        | 1         | 100       | 101         | 15        |
| North West                                                                                     | 176        | 19       | 7              | 35        | 113          | 54        | 1         | 100       | 297         | 26        |
| Wales                                                                                          | 87         | 18       | 6              | 67        | 96           | 85        | 2         | 67        | 191         | 32        |
| Northern Ireland                                                                               | 3          | 2        | 0              | 0         | 10           | 27        | 0         | -         | 13          | 8         |
| Scotland                                                                                       | 45         | 7        | 4              | 57        | 97           | 70        | 15        | 45        | 161         | 19        |
| <b>United Kingdom</b>                                                                          | <b>634</b> | <b>9</b> | <b>38</b>      | <b>39</b> | <b>1085</b>  | <b>63</b> | <b>35</b> | <b>38</b> | <b>1792</b> | <b>21</b> |

| Table 92 : PgR status  |             |           |            |          |             |           |             |           |             |            |
|------------------------|-------------|-----------|------------|----------|-------------|-----------|-------------|-----------|-------------|------------|
| Region                 | Positive    |           | Negative   |          | Not Done    |           | Unknown     |           | Total       |            |
|                        | No          | %         | No         | %        | No          | %         | No          | %         | No          | %          |
| N East, Yorks & Humber | 311         | 31        | 91         | 9        | 301         | 30        | 307         | 30        | 1010        | 100        |
| East Midlands          | 174         | 22        | 51         | 7        | 474         | 61        | 80          | 10        | 779         | 100        |
| East of England        | 88          | 13        | 32         | 5        | 4           | 1         | 573         | 82        | 697         | 100        |
| London                 | 253         | 37        | 83         | 12       | 110         | 16        | 240         | 35        | 686         | 100        |
| South East (East)      | 96          | 14        | 43         | 6        | 61          | 9         | 493         | 71        | 693         | 100        |
| South East (West)      | 173         | 29        | 73         | 12       | 156         | 26        | 188         | 32        | 590         | 100        |
| South West             | 196         | 24        | 80         | 10       | 57          | 7         | 477         | 59        | 810         | 100        |
| West Midlands          | 138         | 21        | 56         | 8        | 106         | 16        | 372         | 55        | 672         | 100        |
| North West             | 266         | 23        | 119        | 10       | 299         | 26        | 452         | 40        | 1136        | 100        |
| Wales                  | 37          | 6         | 13         | 2        | 0           | 0         | 554         | 92        | 604         | 100        |
| Northern Ireland       | 2           | 1         | 3          | 2        | 0           | 0         | 155         | 97        | 160         | 100        |
| Scotland               | 159         | 19        | 57         | 7        | 61          | 7         | 562         | 67        | 839         | 100        |
| <b>United Kingdom</b>  | <b>1893</b> | <b>22</b> | <b>701</b> | <b>8</b> | <b>1629</b> | <b>19</b> | <b>4453</b> | <b>51</b> | <b>8676</b> | <b>100</b> |

| Table 93 : PgR status of ER negative cases |           |          |            |           |            |           |            |           |            |            |
|--------------------------------------------|-----------|----------|------------|-----------|------------|-----------|------------|-----------|------------|------------|
| Region                                     | Positive  |          | Negative   |           | Not Done   |           | Unknown    |           | Total      |            |
|                                            | No        | %        | No         | %         | No         | %         | No         | %         | No         | %          |
| N East, Yorks & Humber                     | 2         | 2        | 51         | 52        | 25         | 26        | 20         | 20        | 98         | 100        |
| East Midlands                              | 5         | 7        | 22         | 30        | 38         | 52        | 8          | 11        | 73         | 100        |
| East of England                            | 7         | 11       | 23         | 35        | 0          | 0         | 36         | 55        | 66         | 100        |
| London                                     | 6         | 7        | 43         | 53        | 10         | 12        | 22         | 27        | 81         | 100        |
| South East (East)                          | 1         | 2        | 28         | 42        | 7          | 11        | 30         | 45        | 66         | 100        |
| South East (West)                          | 5         | 8        | 34         | 52        | 16         | 24        | 11         | 17        | 66         | 100        |
| South West                                 | 7         | 8        | 46         | 52        | 0          | 0         | 35         | 40        | 88         | 100        |
| West Midlands                              | 1         | 1        | 35         | 41        | 17         | 20        | 32         | 38        | 85         | 100        |
| North West                                 | 5         | 4        | 58         | 48        | 17         | 14        | 40         | 33        | 120        | 100        |
| Wales                                      | 5         | 17       | 11         | 38        | 0          | 0         | 13         | 45        | 29         | 100        |
| Northern Ireland                           | 1         | 4        | 3          | 11        | 0          | 0         | 24         | 86        | 28         | 100        |
| Scotland                                   | 1         | 2        | 33         | 52        | 0          | 0         | 29         | 46        | 63         | 100        |
| <b>United Kingdom</b>                      | <b>46</b> | <b>5</b> | <b>387</b> | <b>45</b> | <b>130</b> | <b>15</b> | <b>300</b> | <b>35</b> | <b>863</b> | <b>100</b> |

| Table 94 : Cerb-B2/HER-2 status |            |          |            |          |             |           |             |           |             |            |
|---------------------------------|------------|----------|------------|----------|-------------|-----------|-------------|-----------|-------------|------------|
| Region                          | Positive   |          | Negative   |          | Not Done    |           | Unknown     |           | Total       |            |
|                                 | No         | %        | No         | %        | No          | %         | No          | %         | No          | %          |
| N East, Yorks & Humber          | 11         | 1        | 35         | 3        | 552         | 55        | 412         | 41        | 1010        | 100        |
| East Midlands                   | 3          | 0        | 11         | 1        | 652         | 84        | 113         | 15        | 779         | 100        |
| East of England                 | 6          | 1        | 30         | 4        | 109         | 16        | 552         | 79        | 697         | 100        |
| London                          | 14         | 2        | 76         | 11       | 183         | 27        | 413         | 60        | 686         | 100        |
| South East (East)               | 7          | 1        | 25         | 4        | 106         | 15        | 555         | 80        | 693         | 100        |
| South East (West)               | 33         | 6        | 72         | 12       | 267         | 45        | 218         | 37        | 590         | 100        |
| South West                      | 66         | 8        | 208        | 26       | 64          | 8         | 472         | 58        | 810         | 100        |
| West Midlands                   | 26         | 4        | 35         | 5        | 87          | 13        | 524         | 78        | 672         | 100        |
| North West                      | 56         | 5        | 124        | 11       | 314         | 28        | 642         | 57        | 1136        | 100        |
| Wales                           | 8          | 1        | 5          | 1        | 0           | 0         | 591         | 98        | 604         | 100        |
| Northern Ireland                | 1          | 1        | 5          | 3        | 0           | 0         | 154         | 96        | 160         | 100        |
| Scotland                        | 18         | 2        | 104        | 12       | 73          | 9         | 644         | 77        | 839         | 100        |
| <b>United Kingdom</b>           | <b>249</b> | <b>3</b> | <b>730</b> | <b>8</b> | <b>2407</b> | <b>28</b> | <b>5290</b> | <b>61</b> | <b>8676</b> | <b>100</b> |

| Table 95 : Time from assessment to first diagnostic surgery (cases with no pre-operative diagnosis) |            |            |           |            |           |            |           |            |           |            |           |           |
|-----------------------------------------------------------------------------------------------------|------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|-----------|
| Region                                                                                              | Total      | ≤14 days   |           | ≤30 days   |           | ≤60 days   |           | ≤90 days   |           | ≤120 days  |           | Median    |
|                                                                                                     |            | No         | %         | No         | %         | No         | %         | No         | %         | No         | %         |           |
| N East, Yorks & Humber                                                                              | 118        | 11         | 9         | 60         | 51        | 103        | 87        | 112        | 95        | 117        | 99        | 30        |
| East Midlands                                                                                       | 67         | 1          | 1         | 30         | 45        | 60         | 90        | 63         | 94        | 66         | 99        | 32        |
| East of England                                                                                     | 55         | 8          | 15        | 30         | 55        | 46         | 84        | 53         | 96        | 54         | 98        | 28        |
| London                                                                                              | 69         | 2          | 3         | 30         | 43        | 59         | 86        | 68         | 99        | 69         | 100       | 35        |
| South East (East)                                                                                   | 61         | 4          | 7         | 16         | 26        | 43         | 70        | 53         | 87        | 58         | 95        | 43        |
| South East (West)                                                                                   | 86         | 17         | 20        | 67         | 78        | 77         | 90        | 80         | 93        | 84         | 98        | 22        |
| South West                                                                                          | 83         | 6          | 7         | 32         | 39        | 71         | 86        | 78         | 94        | 81         | 98        | 34        |
| West Midlands                                                                                       | 65         | 4          | 6         | 26         | 40        | 53         | 82        | 61         | 94        | 63         | 97        | 33        |
| North West                                                                                          | 158        | 15         | 9         | 70         | 44        | 135        | 85        | 152        | 96        | 154        | 97        | 33        |
| Wales                                                                                               | 49         | 15         | 31        | 39         | 80        | 47         | 96        | 48         | 98        | 48         | 98        | 22        |
| Northern Ireland                                                                                    | 27         | 7          | 26        | 18         | 67        | 26         | 96        | 27         | 100       | 27         | 100       | 28        |
| Scotland                                                                                            | 109        | 14         | 13        | 62         | 57        | 96         | 88        | 105        | 96        | 107        | 98        | 29        |
| <b>United Kingdom</b>                                                                               | <b>947</b> | <b>104</b> | <b>11</b> | <b>480</b> | <b>51</b> | <b>816</b> | <b>86</b> | <b>900</b> | <b>95</b> | <b>928</b> | <b>98</b> | <b>30</b> |

| Table 96 : Time from assessment to first therapeutic surgery (cases with pre-operative diagnosis) |             |            |           |             |           |             |           |             |           |             |           |           |
|---------------------------------------------------------------------------------------------------|-------------|------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-----------|
| Region                                                                                            | Total       | ≤14 days   |           | ≤30 days    |           | ≤60 days    |           | ≤90 days    |           | ≤120 days   |           | Median    |
|                                                                                                   |             | No         | %         | No          | %         | No          | %         | No          | %         | No          | %         |           |
| N East, Yorks & Humber                                                                            | 887         | 96         | 11        | 576         | 65        | 845         | 95        | 871         | 98        | 878         | 99        | 27        |
| East Midlands                                                                                     | 706         | 85         | 12        | 405         | 57        | 664         | 94        | 683         | 97        | 686         | 97        | 28        |
| East of England                                                                                   | 607         | 59         | 10        | 371         | 61        | 571         | 94        | 589         | 97        | 593         | 98        | 27        |
| London                                                                                            | 600         | 62         | 10        | 301         | 50        | 525         | 88        | 571         | 95        | 577         | 96        | 30        |
| South East (East)                                                                                 | 629         | 25         | 4         | 191         | 30        | 496         | 79        | 579         | 92        | 607         | 97        | 40        |
| South East (West)                                                                                 | 495         | 75         | 15        | 335         | 68        | 459         | 93        | 485         | 98        | 488         | 99        | 25        |
| South West                                                                                        | 721         | 46         | 6         | 380         | 53        | 674         | 93        | 708         | 98        | 711         | 99        | 30        |
| West Midlands                                                                                     | 606         | 110        | 18        | 441         | 73        | 575         | 95        | 599         | 99        | 602         | 99        | 22        |
| North West                                                                                        | 972         | 111        | 11        | 567         | 58        | 897         | 92        | 947         | 97        | 962         | 99        | 28        |
| Wales                                                                                             | 549         | 83         | 15        | 407         | 74        | 534         | 97        | 545         | 99        | 547         | 100       | 23        |
| Northern Ireland                                                                                  | 133         | 72         | 54        | 128         | 96        | 132         | 99        | 132         | 99        | 132         | 99        | 14        |
| Scotland                                                                                          | 695         | 123        | 18        | 470         | 68        | 663         | 95        | 681         | 98        | 686         | 99        | 26        |
| <b>United Kingdom</b>                                                                             | <b>7600</b> | <b>947</b> | <b>12</b> | <b>4572</b> | <b>60</b> | <b>7035</b> | <b>93</b> | <b>7390</b> | <b>97</b> | <b>7469</b> | <b>98</b> | <b>27</b> |

| Table 97 : Time from first surgery to final surgery |             |            |           |            |           |             |           |             |           |             |           |           |
|-----------------------------------------------------|-------------|------------|-----------|------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-----------|
| Region                                              | Total       | ≤14 days   |           | ≤30 days   |           | ≤60 days    |           | ≤90 days    |           | ≤120 days   |           | Median    |
|                                                     |             | No         | %         | No         | %         | No          | %         | No          | %         | No          | %         |           |
| N East, Yorks & Humber                              | 261         | 15         | 6         | 137        | 52        | 228         | 87        | 253         | 97        | 257         | 98        | 28        |
| East Midlands                                       | 136         | 16         | 12        | 61         | 45        | 114         | 84        | 129         | 95        | 134         | 99        | 34        |
| East of England                                     | 188         | 17         | 9         | 106        | 56        | 176         | 94        | 184         | 98        | 184         | 98        | 28        |
| London                                              | 110         | 11         | 10        | 41         | 37        | 83          | 75        | 100         | 91        | 105         | 95        | 35        |
| South East (East)                                   | 168         | 10         | 6         | 60         | 36        | 136         | 81        | 155         | 92        | 161         | 96        | 35        |
| South East (West)                                   | 131         | 14         | 11        | 67         | 51        | 115         | 88        | 124         | 95        | 127         | 97        | 29        |
| South West                                          | 245         | 25         | 10        | 116        | 47        | 208         | 85        | 233         | 95        | 238         | 97        | 32        |
| West Midlands                                       | 137         | 13         | 9         | 83         | 61        | 117         | 85        | 130         | 95        | 133         | 97        | 28        |
| North West                                          | 216         | 15         | 7         | 91         | 42        | 194         | 90        | 210         | 97        | 212         | 98        | 34        |
| Wales                                               | 131         | 25         | 19        | 91         | 69        | 121         | 92        | 128         | 98        | 128         | 98        | 24        |
| Northern Ireland                                    | 31          | 12         | 39        | 28         | 90        | 29          | 94        | 31          | 100       | 31          | 100       | 15        |
| Scotland                                            | 144         | 10         | 7         | 72         | 50        | 121         | 84        | 132         | 92        | 139         | 97        | 31        |
| <b>United Kingdom</b>                               | <b>1898</b> | <b>183</b> | <b>10</b> | <b>953</b> | <b>50</b> | <b>1642</b> | <b>87</b> | <b>1809</b> | <b>95</b> | <b>1849</b> | <b>97</b> | <b>30</b> |

| Table 98 : Time from surgery to radiotherapy for cases with 1 operation |       |                                 |                         |                |          |   |          |   |          |    |          |    |           |    |        |
|-------------------------------------------------------------------------|-------|---------------------------------|-------------------------|----------------|----------|---|----------|---|----------|----|----------|----|-----------|----|--------|
| Region                                                                  | Total | Exclusions                      |                         | Total included | ≤14 days |   | ≤30 days |   | ≤60 days |    | ≤90 days |    | ≤120 days |    | Median |
|                                                                         |       | CT between RT and first surgery | RT before first surgery |                | No       | % | No       | % | No       | %  | No       | %  | No        | %  |        |
|                                                                         |       |                                 |                         |                |          |   |          |   |          |    |          |    |           |    |        |
| N East, Yorks & Humber                                                  | 435   | 74                              | 1                       | 360            | 1        | 0 | 8        | 2 | 107      | 30 | 232      | 64 | 324       | 90 | 78     |
| East Midlands                                                           | 441   | 82                              | 0                       | 359            | 0        | 0 | 12       | 3 | 172      | 48 | 295      | 82 | 335       | 93 | 62     |
| East of England                                                         | 315   | 54                              | 2                       | 259            | 1        | 0 | 10       | 4 | 57       | 22 | 133      | 51 | 207       | 80 | 90     |
| London                                                                  | 319   | 55                              | 4                       | 260            | 1        | 0 | 10       | 4 | 47       | 18 | 124      | 48 | 201       | 77 | 92     |
| South East (East)                                                       | 265   | 68                              | 1                       | 196            | 1        | 1 | 2        | 1 | 25       | 13 | 89       | 45 | 158       | 81 | 95     |
| South East (West)                                                       | 301   | 59                              | 0                       | 242            | 1        | 0 | 6        | 2 | 47       | 19 | 92       | 38 | 169       | 70 | 104    |
| South West                                                              | 344   | 60                              | 1                       | 283            | 3        | 1 | 5        | 2 | 100      | 35 | 250      | 88 | 269       | 95 | 67     |
| West Midlands                                                           | 344   | 79                              | 0                       | 265            | 0        | 0 | 7        | 3 | 98       | 37 | 204      | 77 | 240       | 91 | 67     |
| North West                                                              | 371   | 70                              | 0                       | 301            | 16       | 5 | 27       | 9 | 82       | 27 | 191      | 63 | 252       | 84 | 76     |
| Wales                                                                   | 307   | 58                              | 0                       | 249            | 0        | 0 | 2        | 1 | 85       | 34 | 168      | 67 | 225       | 90 | 72     |
| Northern Ireland                                                        | 91    | 24                              | 0                       | 67             | 3        | 4 | 6        | 9 | 20       | 30 | 52       | 78 | 63        | 94 | 69     |
| Scotland                                                                | 497   | 98                              | 0                       | 399            | 1        | 0 | 9        | 2 | 237      | 59 | 355      | 89 | 372       | 93 | 56     |
| United Kingdom                                                          | 4030  | 781                             | 9                       | 3240           | 28       | 1 | 104      | 3 | 1077     | 33 | 2185     | 67 | 2815      | 87 | 73     |

| Table 99 : Time from first surgery to radiotherapy for cases with 2+ operations |       |                                 |                         |                |          |   |          |   |          |    |          |    |           |    |        |
|---------------------------------------------------------------------------------|-------|---------------------------------|-------------------------|----------------|----------|---|----------|---|----------|----|----------|----|-----------|----|--------|
| Region                                                                          | Total | Exclusions                      |                         | Total included | ≤14 days |   | ≤30 days |   | ≤60 days |    | ≤90 days |    | ≤120 days |    | Median |
|                                                                                 |       | CT between RT and first surgery | RT before first surgery |                | No       | % | No       | % | No       | %  | No       | %  | No        | %  |        |
|                                                                                 |       |                                 |                         |                |          |   |          |   |          |    |          |    |           |    |        |
| N East, Yorks & Humber                                                          | 142   | 14                              | 0                       | 128            | 0        | 0 | 1        | 1 | 5        | 4  | 46       | 36 | 79        | 62 | 106    |
| East Midlands                                                                   | 65    | 8                               | 0                       | 57             | 0        | 0 | 0        | 0 | 4        | 7  | 29       | 51 | 49        | 86 | 90     |
| East of England                                                                 | 88    | 21                              | 0                       | 67             | 0        | 0 | 0        | 0 | 7        | 10 | 17       | 25 | 36        | 54 | 114    |
| London                                                                          | 58    | 7                               | 0                       | 51             | 0        | 0 | 1        | 2 | 4        | 8  | 16       | 31 | 27        | 53 | 119    |
| South East (East)                                                               | 73    | 16                              | 0                       | 57             | 0        | 0 | 0        | 0 | 4        | 7  | 8        | 14 | 25        | 44 | 127    |
| South East (West)                                                               | 65    | 8                               | 0                       | 57             | 0        | 0 | 0        | 0 | 1        | 2  | 9        | 16 | 24        | 42 | 129    |
| South West                                                                      | 124   | 21                              | 1                       | 102            | 0        | 0 | 0        | 0 | 10       | 10 | 55       | 54 | 87        | 85 | 88     |
| West Midlands                                                                   | 58    | 13                              | 0                       | 45             | 0        | 0 | 0        | 0 | 1        | 2  | 13       | 29 | 36        | 80 | 103    |
| North West                                                                      | 72    | 8                               | 0                       | 64             | 1        | 2 | 2        | 3 | 8        | 13 | 19       | 30 | 28        | 44 | 131    |
| Wales                                                                           | 73    | 19                              | 0                       | 54             | 0        | 0 | 0        | 0 | 6        | 11 | 21       | 39 | 44        | 81 | 101    |
| Northern Ireland                                                                | 18    | 5                               | 0                       | 13             | 0        | 0 | 0        | 0 | 0        | 0  | 4        | 31 | 12        | 92 | 111    |
| Scotland                                                                        | 91    | 19                              | 0                       | 72             | 0        | 0 | 0        | 0 | 6        | 8  | 41       | 57 | 65        | 90 | 87     |
| United Kingdom                                                                  | 927   | 159                             | 1                       | 767            | 1        | 0 | 4        | 1 | 56       | 7  | 278      | 36 | 512       | 67 | 103    |

| Table 100 : Time from surgery to chemotherapy for cases with 1 operation |       |                                 |                         |                |          |   |          |    |          |    |          |     |           |     |        |
|--------------------------------------------------------------------------|-------|---------------------------------|-------------------------|----------------|----------|---|----------|----|----------|----|----------|-----|-----------|-----|--------|
| Region                                                                   | Total | Exclusions                      |                         | Total included | ≤14 days |   | ≤30 days |    | ≤60 days |    | ≤90 days |     | ≤120 days |     | Median |
|                                                                          |       | RT between CT and first surgery | CT before first surgery |                | No       | % | No       | %  | No       | %  | No       | %   | No        | %   |        |
|                                                                          |       |                                 |                         |                |          |   |          |    |          |    |          |     |           |     |        |
| N East, Yorks & Humber                                                   | 107   | 1                               | 7                       | 99             | 2        | 2 | 17       | 17 | 81       | 82 | 90       | 91  | 97        | 98  | 42     |
| East Midlands                                                            | 109   | 3                               | 13                      | 93             | 2        | 2 | 27       | 29 | 85       | 91 | 92       | 99  | 93        | 100 | 38     |
| East of England                                                          | 71    | 2                               | 8                       | 61             | 1        | 2 | 30       | 49 | 59       | 97 | 60       | 98  | 61        | 100 | 31     |
| London                                                                   | 90    | 5                               | 8                       | 77             | 5        | 6 | 28       | 36 | 56       | 73 | 68       | 88  | 72        | 94  | 40     |
| South East (East)                                                        | 97    | 3                               | 8                       | 86             | 0        | 0 | 13       | 15 | 72       | 84 | 82       | 95  | 84        | 98  | 41     |
| South East (West)                                                        | 68    | 1                               | 2                       | 65             | 1        | 2 | 29       | 45 | 58       | 89 | 61       | 94  | 64        | 98  | 33     |
| South West                                                               | 89    | 4                               | 4                       | 81             | 2        | 2 | 14       | 17 | 60       | 74 | 74       | 91  | 80        | 99  | 43     |
| West Midlands                                                            | 103   | 3                               | 0                       | 100            | 1        | 1 | 21       | 21 | 91       | 91 | 96       | 96  | 97        | 97  | 37     |
| North West                                                               | 103   | 7                               | 1                       | 95             | 1        | 1 | 26       | 27 | 85       | 89 | 93       | 98  | 93        | 98  | 40     |
| Wales                                                                    | 71    | 2                               | 3                       | 66             | 1        | 2 | 15       | 23 | 49       | 74 | 62       | 94  | 65        | 98  | 43     |
| Northern Ireland                                                         | 39    | 12                              | 1                       | 26             | 1        | 4 | 5        | 19 | 25       | 96 | 26       | 100 | 26        | 100 | 37     |
| Scotland                                                                 | 143   | 6                               | 8                       | 129            | 0        | 0 | 53       | 41 | 116      | 90 | 123      | 95  | 127       | 98  | 35     |
| United Kingdom                                                           | 1090  | 49                              | 63                      | 978            | 17       | 2 | 278      | 28 | 837      | 86 | 927      | 95  | 959       | 98  | 38     |

| Table 101 : Time from first surgery to chemotherapy for cases with 2+ operations |       |                                 |                         |                |          |   |          |    |          |     |          |     |           |     |        |
|----------------------------------------------------------------------------------|-------|---------------------------------|-------------------------|----------------|----------|---|----------|----|----------|-----|----------|-----|-----------|-----|--------|
| Region                                                                           | Total | Exclusions                      |                         | Total included | ≤14 days |   | ≤30 days |    | ≤60 days |     | ≤90 days |     | ≤120 days |     | Median |
|                                                                                  |       | RT between CT and first surgery | CT before first surgery |                | No       | % | No       | %  | No       | %   | No       | %   | No        | %   |        |
|                                                                                  |       |                                 |                         |                |          |   |          |    |          |     |          |     |           |     |        |
| N East, Yorks & Humber                                                           | 19    | 1                               | 0                       | 18             | 0        | 0 | 0        | 0  | 8        | 44  | 17       | 94  | 18        | 100 | 63     |
| East Midlands                                                                    | 17    | 0                               | 1                       | 16             | 0        | 0 | 1        | 6  | 5        | 31  | 13       | 81  | 15        | 94  | 78     |
| East of England                                                                  | 29    | 1                               | 1                       | 27             | 0        | 0 | 1        | 4  | 12       | 44  | 23       | 85  | 24        | 89  | 63     |
| London                                                                           | 12    | 1                               | 1                       | 10             | 0        | 0 | 1        | 10 | 3        | 30  | 5        | 50  | 7         | 70  | 90     |
| South East (East)                                                                | 23    | 0                               | 2                       | 21             | 0        | 0 | 2        | 10 | 6        | 29  | 15       | 71  | 19        | 90  | 80     |
| South East (West)                                                                | 13    | 0                               | 1                       | 12             | 0        | 0 | 1        | 8  | 3        | 25  | 10       | 83  | 10        | 83  | 62     |
| South West                                                                       | 29    | 1                               | 1                       | 27             | 0        | 0 | 0        | 0  | 8        | 30  | 20       | 74  | 27        | 100 | 78     |
| West Midlands                                                                    | 15    | 0                               | 0                       | 15             | 0        | 0 | 0        | 0  | 8        | 53  | 13       | 87  | 14        | 93  | 58     |
| North West                                                                       | 19    | 2                               | 0                       | 17             | 0        | 0 | 3        | 18 | 8        | 47  | 15       | 88  | 15        | 88  | 61     |
| Wales                                                                            | 25    | 0                               | 0                       | 25             | 0        | 0 | 0        | 0  | 7        | 28  | 20       | 80  | 25        | 100 | 66     |
| Northern Ireland                                                                 | 7     | 0                               | 0                       | 7              | 0        | 0 | 2        | 29 | 7        | 100 | 7        | 100 | 7         | 100 | 35     |
| Scotland                                                                         | 22    | 0                               | 0                       | 22             | 0        | 0 | 1        | 5  | 10       | 45  | 21       | 95  | 21        | 95  | 64     |
| United Kingdom                                                                   | 230   | 6                               | 7                       | 217            | 0        | 0 | 12       | 6  | 85       | 39  | 179      | 82  | 202       | 93  | 66     |

**Table 102 : Time from first surgery to hormonal therapy**

| Region                 | Total       | No surgery | HT before first surgery |           | Total included | ≤14 days    |           | ≤30 days    |           | ≤60 days    |           | ≤90 days    |           | ≤120 days   |           | Median    |
|------------------------|-------------|------------|-------------------------|-----------|----------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-----------|
|                        |             |            | No.                     | %         |                | No          | %         | No          | %         | No          | %         | No          | %         | No          | %         |           |
| N East, Yorks & Humber | 712         | 3          | 27                      | 4         | 682            | 221         | 32        | 425         | 62        | 558         | 82        | 583         | 85        | 605         | 89        | 21        |
| East Midlands          | 566         | 3          | 73                      | 13        | 490            | 205         | 42        | 369         | 75        | 422         | 86        | 438         | 89        | 448         | 91        | 16        |
| East of England        | 474         | 8          | 27                      | 6         | 439            | 144         | 33        | 262         | 60        | 350         | 80        | 363         | 83        | 378         | 86        | 22        |
| London                 | 393         | 5          | 35                      | 9         | 353            | 68          | 19        | 175         | 50        | 241         | 68        | 271         | 77        | 291         | 82        | 31        |
| South East (East)      | 434         | 2          | 107                     | 25        | 325            | 137         | 42        | 194         | 60        | 254         | 78        | 277         | 85        | 286         | 88        | 20        |
| South East (West)      | 368         | 1          | 25                      | 7         | 342            | 120         | 35        | 224         | 65        | 282         | 82        | 305         | 89        | 312         | 91        | 21        |
| South West             | 523         | 0          | 111                     | 21        | 412            | 152         | 37        | 247         | 60        | 331         | 80        | 359         | 87        | 368         | 89        | 23        |
| West Midlands          | 447         | 0          | 86                      | 19        | 361            | 175         | 48        | 247         | 68        | 308         | 85        | 318         | 88        | 322         | 89        | 15        |
| North West             | 691         | 2          | 26                      | 4         | 663            | 148         | 22        | 347         | 52        | 477         | 72        | 548         | 83        | 576         | 87        | 28        |
| Wales                  | 411         | 4          | 28                      | 7         | 379            | 172         | 45        | 236         | 62        | 294         | 78        | 320         | 84        | 326         | 86        | 20        |
| Northern Ireland       | 110         | 0          | 3                       | 3         | 107            | 27          | 25        | 62          | 58        | 76          | 71        | 81          | 76        | 89          | 83        | 29        |
| Scotland               | 597         | 1          | 14                      | 2         | 582            | 207         | 36        | 351         | 60        | 448         | 77        | 471         | 81        | 484         | 83        | 22        |
| <b>United Kingdom</b>  | <b>5726</b> | <b>29</b>  | <b>562</b>              | <b>10</b> | <b>5135</b>    | <b>1776</b> | <b>35</b> | <b>3139</b> | <b>61</b> | <b>4041</b> | <b>79</b> | <b>4334</b> | <b>84</b> | <b>4485</b> | <b>87</b> | <b>21</b> |

**Table 103 : Order of surgery, radiotherapy and chemotherapy treatments**

| Region                 | Total       | Surgery only |           | Surgery to RT |           | Surgery to CT |          | Surgery to CT to RT |           | Surgery to RT to CT |          | Other      |          |
|------------------------|-------------|--------------|-----------|---------------|-----------|---------------|----------|---------------------|-----------|---------------------|----------|------------|----------|
|                        |             | No           | %         | No            | %         | No            | %        | No                  | %         | No                  | %        | No         | %        |
| N East, Yorks & Humber | 918         | 306          | 33        | 480           | 52        | 28            | 3        | 88                  | 10        | 2                   | 0        | 14         | 2        |
| East Midlands          | 779         | 244          | 31        | 403           | 52        | 19            | 2        | 89                  | 11        | 3                   | 0        | 21         | 3        |
| East of England        | 619         | 190          | 31        | 315           | 51        | 13            | 2        | 72                  | 12        | 3                   | 0        | 26         | 4        |
| London                 | 604         | 190          | 31        | 297           | 49        | 24            | 4        | 62                  | 10        | 5                   | 1        | 26         | 4        |
| South East (East)      | 620         | 252          | 41        | 242           | 39        | 22            | 4        | 83                  | 13        | 3                   | 0        | 18         | 3        |
| South East (West)      | 567         | 187          | 33        | 295           | 52        | 9             | 2        | 67                  | 12        | 1                   | 0        | 8          | 1        |
| South West             | 742         | 245          | 33        | 374           | 50        | 26            | 4        | 80                  | 11        | 5                   | 1        | 12         | 2        |
| West Midlands          | 594         | 169          | 28        | 307           | 52        | 23            | 4        | 91                  | 15        | 3                   | 1        | 1          | 0        |
| North West             | 809         | 327          | 40        | 353           | 44        | 32            | 4        | 78                  | 10        | 9                   | 1        | 10         | 1        |
| Wales                  | 601         | 202          | 34        | 298           | 50        | 14            | 2        | 76                  | 13        | 2                   | 0        | 9          | 1        |
| Northern Ireland       | 154         | 41           | 27        | 67            | 44        | 4             | 3        | 29                  | 19        | 12                  | 8        | 1          | 1        |
| Scotland               | 828         | 202          | 24        | 458           | 55        | 34            | 4        | 116                 | 14        | 6                   | 1        | 12         | 1        |
| <b>United Kingdom</b>  | <b>7835</b> | <b>2555</b>  | <b>33</b> | <b>3889</b>   | <b>50</b> | <b>248</b>    | <b>3</b> | <b>931</b>          | <b>12</b> | <b>54</b>           | <b>1</b> | <b>158</b> | <b>2</b> |

"Surgery" may be 1 or multiple operations (diagnostic or therapeutic)

**Table 104 : Median time (in days) from assessment to final therapy (final surgery, RT or CT)**

| Region                 | All cases   |           | Surgery only |           | Surgery to RT |            | Surgery to CT |           | Surgery to CT to RT |            |
|------------------------|-------------|-----------|--------------|-----------|---------------|------------|---------------|-----------|---------------------|------------|
|                        | Total       | Median    | Total        | Median    | Total         | Median     | Total         | Median    | Total               | Median     |
| N East, Yorks & Humber | 918         | 95        | 306          | 36        | 480           | 113        | 28            | 64        | 88                  | 221        |
| East Midlands          | 779         | 86        | 244          | 36        | 403           | 92         | 19            | 82        | 89                  | 205        |
| East of England        | 619         | 105       | 190          | 42        | 315           | 124        | 13            | 67        | 72                  | 217        |
| London                 | 604         | 110       | 190          | 41        | 297           | 131        | 24            | 95        | 62                  | 231        |
| South East (East)      | 620         | 124       | 252          | 54        | 242           | 146        | 22            | 97        | 83                  | 239        |
| South East (West)      | 567         | 112       | 187          | 35        | 295           | 137        | 9             | 71        | 67                  | 218        |
| South West             | 742         | 97        | 245          | 44        | 374           | 104        | 26            | 98        | 80                  | 222        |
| West Midlands          | 594         | 94        | 169          | 41        | 307           | 99         | 23            | 56        | 91                  | 231        |
| North West             | 809         | 85        | 327          | 42        | 353           | 115        | 32            | 74        | 78                  | 230        |
| Wales                  | 601         | 87        | 202          | 27        | 298           | 102        | 14            | 91        | 76                  | 231        |
| Northern Ireland       | 154         | 97        | 41           | 18        | 67            | 97         | 4             | 46        | 29                  | 167        |
| Scotland               | 828         | 84        | 202          | 34        | 458           | 86         | 34            | 67        | 116                 | 188        |
| <b>United Kingdom</b>  | <b>7835</b> | <b>94</b> | <b>2555</b>  | <b>39</b> | <b>3889</b>   | <b>108</b> | <b>248</b>    | <b>76</b> | <b>931</b>          | <b>218</b> |

| Table 105 : Invasive status of cancers with known radiotherapy data |             |           |                |          |              |           |           |          |             |            |
|---------------------------------------------------------------------|-------------|-----------|----------------|----------|--------------|-----------|-----------|----------|-------------|------------|
| Region                                                              | Invasive    |           | Micro-invasive |          | Non-invasive |           | Unknown   |          | Total       |            |
|                                                                     | No          | %         | No             | %        | No           | %         | No        | %        | No          | %          |
| N East, Yorks & Humber                                              | 720         | 77        | 10             | 1        | 195          | 21        | 6         | 1        | 931         | 100        |
| East Midlands                                                       | 605         | 78        | 9              | 1        | 164          | 21        | 1         | 0        | 779         | 100        |
| East of England                                                     | 467         | 74        | 6              | 1        | 141          | 22        | 14        | 2        | 628         | 100        |
| London                                                              | 478         | 76        | 5              | 1        | 138          | 22        | 9         | 1        | 630         | 100        |
| South East (East)                                                   | 484         | 76        | 12             | 2        | 143          | 22        | 1         | 0        | 640         | 100        |
| South East (West)                                                   | 456         | 78        | 1              | 0        | 121          | 21        | 7         | 1        | 585         | 100        |
| South West                                                          | 580         | 76        | 11             | 1        | 169          | 22        | 5         | 1        | 765         | 100        |
| West Midlands                                                       | 506         | 81        | 5              | 1        | 109          | 18        | 1         | 0        | 621         | 100        |
| North West                                                          | 800         | 79        | 18             | 2        | 188          | 19        | 1         | 0        | 1007        | 100        |
| Wales                                                               | 476         | 79        | 9              | 1        | 113          | 19        | 3         | 0        | 601         | 100        |
| Northern Ireland                                                    | 117         | 76        | 1              | 1        | 36           | 23        | 0         | 0        | 154         | 100        |
| Scotland                                                            | 650         | 79        | 7              | 1        | 139          | 17        | 32        | 4        | 828         | 100        |
| <b>United Kingdom</b>                                               | <b>6339</b> | <b>78</b> | <b>94</b>      | <b>1</b> | <b>1656</b>  | <b>20</b> | <b>80</b> | <b>1</b> | <b>8169</b> | <b>100</b> |

| Table 106 : Treatment of invasive cancers with known radiotherapy data |                      |           |             |           |            |          |           |          |             |            |
|------------------------------------------------------------------------|----------------------|-----------|-------------|-----------|------------|----------|-----------|----------|-------------|------------|
| Region                                                                 | Conservation surgery |           | Mastectomy  |           | No Surgery |          | Unknown   |          | Total       |            |
|                                                                        | No                   | %         | No          | %         | No         | %        | No        | %        | No          | %          |
| N East, Yorks & Humber                                                 | 470                  | 65        | 244         | 34        | 4          | 1        | 2         | 0        | 720         | 100        |
| East Midlands                                                          | 417                  | 69        | 183         | 30        | 5          | 1        | 0         | 0        | 605         | 100        |
| East of England                                                        | 321                  | 69        | 144         | 31        | 1          | 0        | 1         | 0        | 467         | 100        |
| London                                                                 | 382                  | 80        | 88          | 18        | 8          | 2        | 0         | 0        | 478         | 100        |
| South East (East)                                                      | 338                  | 70        | 143         | 30        | 3          | 1        | 0         | 0        | 484         | 100        |
| South East (West)                                                      | 352                  | 77        | 99          | 22        | 4          | 1        | 1         | 0        | 456         | 100        |
| South West                                                             | 413                  | 71        | 167         | 29        | 0          | 0        | 0         | 0        | 580         | 100        |
| West Midlands                                                          | 356                  | 70        | 150         | 30        | 0          | 0        | 0         | 0        | 506         | 100        |
| North West                                                             | 551                  | 69        | 243         | 30        | 5          | 1        | 1         | 0        | 800         | 100        |
| Wales                                                                  | 309                  | 65        | 159         | 33        | 8          | 2        | 0         | 0        | 476         | 100        |
| Northern Ireland                                                       | 84                   | 72        | 33          | 28        | 0          | 0        | 0         | 0        | 117         | 100        |
| Scotland                                                               | 438                  | 67        | 180         | 28        | 7          | 1        | 25        | 4        | 650         | 100        |
| <b>United Kingdom</b>                                                  | <b>4431</b>          | <b>70</b> | <b>1833</b> | <b>29</b> | <b>45</b>  | <b>1</b> | <b>30</b> | <b>0</b> | <b>6339</b> | <b>100</b> |

| Table 107 : Radiotherapy for invasive cancers treated by conservation surgery |              |           |                 |           |             |            |
|-------------------------------------------------------------------------------|--------------|-----------|-----------------|-----------|-------------|------------|
| Region                                                                        | Radiotherapy |           | No radiotherapy |           | Total       |            |
|                                                                               | No           | %         | No              | %         | No          | %          |
| N East, Yorks & Humber                                                        | 441          | 94        | 29              | 6         | 470         | 100        |
| East Midlands                                                                 | 386          | 93        | 31              | 7         | 417         | 100        |
| East of England                                                               | 287          | 89        | 34              | 11        | 321         | 100        |
| London                                                                        | 318          | 83        | 64              | 17        | 382         | 100        |
| South East (East)                                                             | 273          | 81        | 65              | 19        | 338         | 100        |
| South East (West)                                                             | 307          | 87        | 45              | 13        | 352         | 100        |
| South West                                                                    | 381          | 92        | 32              | 8         | 413         | 100        |
| West Midlands                                                                 | 331          | 93        | 25              | 7         | 356         | 100        |
| North West                                                                    | 460          | 83        | 91              | 17        | 551         | 100        |
| Wales                                                                         | 298          | 96        | 11              | 4         | 309         | 100        |
| Northern Ireland                                                              | 75           | 89        | 9               | 11        | 84          | 100        |
| Scotland                                                                      | 407          | 93        | 31              | 7         | 438         | 100        |
| <b>United Kingdom</b>                                                         | <b>3964</b>  | <b>89</b> | <b>467</b>      | <b>11</b> | <b>4431</b> | <b>100</b> |

| Table 108 : Size of invasive cases treated by conservation without RT |            |           |           |           |           |           |          |          |           |          |            |            |
|-----------------------------------------------------------------------|------------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|----------|------------|------------|
| Region                                                                | <15mm      |           | 15-<20mm  |           | 20-<50mm  |           | 50+mm    |          | Unknown   |          | Total      |            |
|                                                                       | No         | %         | No        | %         | No        | %         | No       | %        | No        | %        | No         | %          |
| N East, Yorks & Humber                                                | 18         | 62        | 2         | 7         | 7         | 24        | 0        | 0        | 2         | 7        | 29         | 100        |
| East Midlands                                                         | 21         | 68        | 5         | 16        | 4         | 13        | 0        | 0        | 1         | 3        | 31         | 100        |
| East of England                                                       | 16         | 47        | 10        | 29        | 7         | 21        | 0        | 0        | 1         | 3        | 34         | 100        |
| London                                                                | 39         | 61        | 12        | 19        | 12        | 19        | 0        | 0        | 1         | 2        | 64         | 100        |
| South East (East)                                                     | 44         | 68        | 12        | 18        | 8         | 12        | 0        | 0        | 1         | 2        | 65         | 100        |
| South East (West)                                                     | 33         | 73        | 6         | 13        | 6         | 13        | 0        | 0        | 0         | 0        | 45         | 100        |
| South West                                                            | 22         | 69        | 5         | 16        | 5         | 16        | 0        | 0        | 0         | 0        | 32         | 100        |
| West Midlands                                                         | 13         | 52        | 4         | 16        | 6         | 24        | 0        | 0        | 2         | 8        | 25         | 100        |
| North West                                                            | 66         | 73        | 8         | 9         | 15        | 16        | 2        | 2        | 0         | 0        | 91         | 100        |
| Wales                                                                 | 8          | 73        | 1         | 9         | 0         | 0         | 0        | 0        | 2         | 18       | 11         | 100        |
| Northern Ireland                                                      | 5          | 56        | 1         | 11        | 3         | 33        | 0        | 0        | 0         | 0        | 9          | 100        |
| Scotland                                                              | 17         | 55        | 8         | 26        | 6         | 19        | 0        | 0        | 0         | 0        | 31         | 100        |
| <b>United Kingdom</b>                                                 | <b>302</b> | <b>65</b> | <b>74</b> | <b>16</b> | <b>79</b> | <b>17</b> | <b>2</b> | <b>0</b> | <b>10</b> | <b>2</b> | <b>467</b> | <b>100</b> |

| Table 109 : Treatment of non-invasive cancers with known radiotherapy data |                      |           |            |           |            |          |           |          |             |            |
|----------------------------------------------------------------------------|----------------------|-----------|------------|-----------|------------|----------|-----------|----------|-------------|------------|
| Region                                                                     | Conservation surgery |           | Mastectomy |           | No Surgery |          | Unknown   |          | Total       |            |
|                                                                            | No                   | %         | No         | %         | No         | %        | No        | %        | No          | %          |
| N East, Yorks & Humber                                                     | 126                  | 65        | 69         | 35        | 0          | 0        | 0         | 0        | 195         | 100        |
| East Midlands                                                              | 94                   | 57        | 70         | 43        | 0          | 0        | 0         | 0        | 164         | 100        |
| East of England                                                            | 109                  | 77        | 32         | 23        | 0          | 0        | 0         | 0        | 141         | 100        |
| London                                                                     | 94                   | 68        | 36         | 26        | 5          | 4        | 3         | 2        | 138         | 100        |
| South East (East)                                                          | 90                   | 63        | 49         | 34        | 4          | 3        | 0         | 0        | 143         | 100        |
| South East (West)                                                          | 98                   | 81        | 23         | 19        | 0          | 0        | 0         | 0        | 121         | 100        |
| South West                                                                 | 119                  | 70        | 49         | 29        | 1          | 1        | 0         | 0        | 169         | 100        |
| West Midlands                                                              | 72                   | 66        | 35         | 32        | 0          | 0        | 2         | 2        | 109         | 100        |
| North West                                                                 | 131                  | 70        | 53         | 28        | 4          | 2        | 0         | 0        | 188         | 100        |
| Wales                                                                      | 75                   | 66        | 38         | 34        | 0          | 0        | 0         | 0        | 113         | 100        |
| Northern Ireland                                                           | 30                   | 83        | 6          | 17        | 0          | 0        | 0         | 0        | 36          | 100        |
| Scotland                                                                   | 109                  | 78        | 25         | 18        | 0          | 0        | 5         | 4        | 139         | 100        |
| <b>United Kingdom</b>                                                      | <b>1147</b>          | <b>69</b> | <b>485</b> | <b>29</b> | <b>14</b>  | <b>1</b> | <b>10</b> | <b>1</b> | <b>1656</b> | <b>100</b> |

| Table 110 : Radiotherapy for non-invasive cancers treated by conservation surgery |              |           |                 |           |             |            |
|-----------------------------------------------------------------------------------|--------------|-----------|-----------------|-----------|-------------|------------|
| Region                                                                            | Radiotherapy |           | No radiotherapy |           | Total       |            |
|                                                                                   | No           | %         | No              | %         | No          | %          |
| N East, Yorks & Humber                                                            | 64           | 51        | 62              | 49        | 126         | 100        |
| East Midlands                                                                     | 49           | 52        | 45              | 48        | 94          | 100        |
| East of England                                                                   | 51           | 47        | 58              | 53        | 109         | 100        |
| London                                                                            | 38           | 40        | 56              | 60        | 94          | 100        |
| South East (East)                                                                 | 33           | 37        | 57              | 63        | 90          | 100        |
| South East (West)                                                                 | 25           | 26        | 73              | 74        | 98          | 100        |
| South West                                                                        | 43           | 36        | 76              | 64        | 119         | 100        |
| West Midlands                                                                     | 41           | 57        | 31              | 43        | 72          | 100        |
| North West                                                                        | 68           | 52        | 63              | 48        | 131         | 100        |
| Wales                                                                             | 32           | 43        | 43              | 57        | 75          | 100        |
| Northern Ireland                                                                  | 14           | 47        | 16              | 53        | 30          | 100        |
| Scotland                                                                          | 87           | 80        | 22              | 20        | 109         | 100        |
| <b>United Kingdom</b>                                                             | <b>545</b>   | <b>48</b> | <b>602</b>      | <b>52</b> | <b>1147</b> | <b>100</b> |

| Table 111 : Grade of non-invasive cancers treated by conservation without radiotherapy |            |           |            |           |                |          |           |          |            |            |
|----------------------------------------------------------------------------------------|------------|-----------|------------|-----------|----------------|----------|-----------|----------|------------|------------|
| Region                                                                                 | High       |           | Other      |           | Not assessable |          | Unknown   |          | Total      |            |
|                                                                                        | No         | %         | No         | %         | No             | %        | No        | %        | No         | %          |
| N East, Yorks & Humber                                                                 | 15         | 24        | 44         | 71        | 3              | 5        | 0         | 0        | 62         | 100        |
| East Midlands                                                                          | 14         | 31        | 29         | 64        | 1              | 2        | 1         | 2        | 45         | 100        |
| East of England                                                                        | 21         | 36        | 30         | 52        | 0              | 0        | 7         | 12       | 58         | 100        |
| London                                                                                 | 17         | 30        | 35         | 63        | 2              | 4        | 2         | 4        | 56         | 100        |
| South East (East)                                                                      | 18         | 32        | 32         | 56        | 4              | 7        | 3         | 5        | 57         | 100        |
| South East (West)                                                                      | 36         | 49        | 35         | 48        | 1              | 1        | 1         | 1        | 73         | 100        |
| South West                                                                             | 27         | 36        | 42         | 55        | 2              | 3        | 5         | 7        | 76         | 100        |
| West Midlands                                                                          | 5          | 16        | 24         | 77        | 1              | 3        | 1         | 3        | 31         | 100        |
| North West                                                                             | 15         | 24        | 45         | 71        | 0              | 0        | 3         | 5        | 63         | 100        |
| Wales                                                                                  | 2          | 5         | 38         | 88        | 0              | 0        | 3         | 7        | 43         | 100        |
| Northern Ireland                                                                       | 6          | 38        | 10         | 63        | 0              | 0        | 0         | 0        | 16         | 100        |
| Scotland                                                                               | 5          | 23        | 11         | 50        | 1              | 5        | 5         | 23       | 22         | 100        |
| <b>United Kingdom</b>                                                                  | <b>181</b> | <b>30</b> | <b>375</b> | <b>62</b> | <b>15</b>      | <b>2</b> | <b>31</b> | <b>5</b> | <b>602</b> | <b>100</b> |

| Table 112 : Size of non-invasive cancers treated by conservation without radiotherapy |            |           |            |           |           |          |                |          |           |           |            |            |
|---------------------------------------------------------------------------------------|------------|-----------|------------|-----------|-----------|----------|----------------|----------|-----------|-----------|------------|------------|
| Region                                                                                | <15mm      |           | 15-<30mm   |           | 30+mm     |          | Not assessable |          | Unknown   |           | Total      |            |
|                                                                                       | No         | %         | No         | %         | No        | %        | No             | %        | No        | %         | No         | %          |
| N East, Yorks & Humber                                                                | 38         | 61        | 13         | 21        | 1         | 2        | 0              | 0        | 10        | 16        | 62         | 100        |
| East Midlands                                                                         | 33         | 73        | 7          | 16        | 1         | 2        | 1              | 2        | 3         | 7         | 45         | 100        |
| East of England                                                                       | 29         | 50        | 12         | 21        | 3         | 5        | 3              | 5        | 11        | 19        | 58         | 100        |
| London                                                                                | 35         | 63        | 12         | 21        | 3         | 5        | 0              | 0        | 6         | 11        | 56         | 100        |
| South East (East)                                                                     | 35         | 61        | 11         | 19        | 4         | 7        | 0              | 0        | 7         | 12        | 57         | 100        |
| South East (West)                                                                     | 45         | 62        | 20         | 27        | 2         | 3        | 6              | 8        | 0         | 0         | 73         | 100        |
| South West                                                                            | 45         | 59        | 14         | 18        | 5         | 7        | 2              | 3        | 10        | 13        | 76         | 100        |
| West Midlands                                                                         | 19         | 61        | 7          | 23        | 2         | 6        | 1              | 3        | 2         | 6         | 31         | 100        |
| North West                                                                            | 29         | 46        | 6          | 10        | 3         | 5        | 2              | 3        | 23        | 37        | 63         | 100        |
| Wales                                                                                 | 26         | 60        | 10         | 23        | 1         | 2        | 2              | 5        | 4         | 9         | 43         | 100        |
| Northern Ireland                                                                      | 6          | 38        | 5          | 31        | 2         | 13       | 0              | 0        | 3         | 19        | 16         | 100        |
| Scotland                                                                              | 12         | 55        | 3          | 14        | 1         | 5        | 2              | 9        | 4         | 18        | 22         | 100        |
| <b>United Kingdom</b>                                                                 | <b>352</b> | <b>58</b> | <b>120</b> | <b>20</b> | <b>28</b> | <b>5</b> | <b>19</b>      | <b>3</b> | <b>83</b> | <b>14</b> | <b>602</b> | <b>100</b> |

| Table 113 : Invasive status, nodal status and ER status of cancers with known chemotherapy data |                           |    |                           |   |       |    |                |   |              |    |                         |   |       |     |
|-------------------------------------------------------------------------------------------------|---------------------------|----|---------------------------|---|-------|----|----------------|---|--------------|----|-------------------------|---|-------|-----|
|                                                                                                 | Invasive                  |    |                           |   |       |    | Micro-invasive |   | Non-invasive |    | Invasive status unknown |   | Total |     |
|                                                                                                 | ER negative Node negative |    | ER negative Node positive |   | Other |    |                |   |              |    |                         |   |       |     |
| Region                                                                                          | No                        | %  | No                        | % | No    | %  | No             | % | No           | %  | No                      | % | No    | %   |
| N East, Yorks & Humber                                                                          | 52                        | 5  | 24                        | 2 | 685   | 70 | 10             | 1 | 207          | 21 | 5                       | 1 | 983   | 100 |
| East Midlands                                                                                   | 43                        | 6  | 15                        | 2 | 547   | 70 | 9              | 1 | 164          | 21 | 1                       | 0 | 779   | 100 |
| East of England                                                                                 | 31                        | 5  | 12                        | 2 | 469   | 69 | 6              | 1 | 139          | 20 | 22                      | 3 | 679   | 100 |
| London                                                                                          | 28                        | 4  | 18                        | 3 | 451   | 69 | 4              | 1 | 144          | 22 | 9                       | 1 | 654   | 100 |
| South East (East)                                                                               | 35                        | 5  | 12                        | 2 | 457   | 69 | 13             | 2 | 148          | 22 | 1                       | 0 | 666   | 100 |
| South East (West)                                                                               | 39                        | 7  | 9                         | 2 | 397   | 70 | 1              | 0 | 118          | 21 | 7                       | 1 | 571   | 100 |
| South West                                                                                      | 39                        | 5  | 21                        | 3 | 522   | 68 | 11             | 1 | 171          | 22 | 5                       | 1 | 769   | 100 |
| West Midlands                                                                                   | 40                        | 6  | 20                        | 3 | 460   | 72 | 5              | 1 | 113          | 18 | 1                       | 0 | 639   | 100 |
| North West                                                                                      | 63                        | 7  | 26                        | 3 | 632   | 70 | 19             | 2 | 161          | 18 | 1                       | 0 | 902   | 100 |
| Wales                                                                                           | 17                        | 3  | 9                         | 1 | 453   | 75 | 9              | 1 | 113          | 19 | 3                       | 0 | 604   | 100 |
| Northern Ireland                                                                                | 16                        | 10 | 7                         | 4 | 99    | 62 | 1              | 1 | 37           | 23 | 0                       | 0 | 160   | 100 |
| Scotland                                                                                        | 39                        | 5  | 16                        | 2 | 605   | 72 | 7              | 1 | 139          | 17 | 33                      | 4 | 839   | 100 |
| United Kingdom                                                                                  | 442                       | 5  | 189                       | 2 | 5777  | 70 | 95             | 1 | 1654         | 20 | 88                      | 1 | 8245  | 100 |

| Table 114 : Chemotherapy for ER negative node positive invasive cancers |              |           |                 |           |            |            |
|-------------------------------------------------------------------------|--------------|-----------|-----------------|-----------|------------|------------|
| Region                                                                  | Chemotherapy |           | No chemotherapy |           | Total      |            |
|                                                                         | No           | %         | No              | %         | No         | %          |
| N East, Yorks & Humber                                                  | 23           | 96        | 1               | 4         | 24         | 100        |
| East Midlands                                                           | 12           | 80        | 3               | 20        | 15         | 100        |
| East of England                                                         | 11           | 92        | 1               | 8         | 12         | 100        |
| London                                                                  | 17           | 94        | 1               | 6         | 18         | 100        |
| South East (East)                                                       | 10           | 83        | 2               | 17        | 12         | 100        |
| South East (West)                                                       | 8            | 89        | 1               | 11        | 9          | 100        |
| South West                                                              | 16           | 76        | 5               | 24        | 21         | 100        |
| West Midlands                                                           | 17           | 85        | 3               | 15        | 20         | 100        |
| North West                                                              | 20           | 77        | 6               | 23        | 26         | 100        |
| Wales                                                                   | 7            | 78        | 2               | 22        | 9          | 100        |
| Northern Ireland                                                        | 6            | 86        | 1               | 14        | 7          | 100        |
| Scotland                                                                | 14           | 88        | 2               | 13        | 16         | 100        |
| <b>United Kingdom</b>                                                   | <b>161</b>   | <b>85</b> | <b>28</b>       | <b>15</b> | <b>189</b> | <b>100</b> |

| Table 115 : Chemotherapy for ER negative node negative invasive cancers |              |           |                 |           |            |            |
|-------------------------------------------------------------------------|--------------|-----------|-----------------|-----------|------------|------------|
| Region                                                                  | Chemotherapy |           | No chemotherapy |           | Total      |            |
|                                                                         | No           | %         | No              | %         | No         | %          |
| N East, Yorks & Humber                                                  | 24           | 46        | 28              | 54        | 52         | 100        |
| East Midlands                                                           | 20           | 47        | 23              | 0         | 43         | 100        |
| East of England                                                         | 12           | 39        | 19              | 61        | 31         | 100        |
| London                                                                  | 11           | 39        | 17              | 61        | 28         | 100        |
| South East (East)                                                       | 16           | 46        | 19              | 54        | 35         | 100        |
| South East (West)                                                       | 17           | 44        | 22              | 56        | 39         | 100        |
| South West                                                              | 15           | 38        | 24              | 62        | 39         | 100        |
| West Midlands                                                           | 24           | 60        | 16              | 40        | 40         | 100        |
| North West                                                              | 33           | 52        | 30              | 48        | 63         | 100        |
| Wales                                                                   | 8            | 47        | 9               | 53        | 17         | 100        |
| Northern Ireland                                                        | 12           | 75        | 4               | 0         | 16         | 100        |
| Scotland                                                                | 26           | 67        | 13              | 0         | 39         | 100        |
| <b>United Kingdom</b>                                                   | <b>218</b>   | <b>49</b> | <b>224</b>      | <b>51</b> | <b>442</b> | <b>100</b> |

| Table 116 : Grade of ER negative node negative invasive cancers given chemotherapy |          |          |           |           |            |           |                |          |          |          |            |            |
|------------------------------------------------------------------------------------|----------|----------|-----------|-----------|------------|-----------|----------------|----------|----------|----------|------------|------------|
| Region                                                                             | Grade I  |          | Grade II  |           | Grade III  |           | Not Assessable |          | Unknown  |          | Total      |            |
|                                                                                    | No       | %        | No        | %         | No         | %         | No             | %        | No       | %        | No         | %          |
| N East, Yorks & Humber                                                             | 0        | 0        | 4         | 17        | 20         | 83        | 0              | 0        | 0        | 0        | 24         | 100        |
| East Midlands                                                                      | 0        | 0        | 0         | 0         | 20         | 100       | 0              | 0        | 0        | 0        | 20         | 100        |
| East of England                                                                    | 0        | 0        | 0         | 0         | 12         | 100       | 0              | 0        | 0        | 0        | 12         | 100        |
| London                                                                             | 0        | 0        | 4         | 36        | 7          | 64        | 0              | 0        | 0        | 0        | 11         | 100        |
| South East (East)                                                                  | 0        | 0        | 2         | 13        | 14         | 88        | 0              | 0        | 0        | 0        | 16         | 100        |
| South East (West)                                                                  | 0        | 0        | 1         | 6         | 16         | 94        | 0              | 0        | 0        | 0        | 17         | 100        |
| South West                                                                         | 0        | 0        | 1         | 7         | 13         | 87        | 0              | 0        | 1        | 7        | 15         | 100        |
| West Midlands                                                                      | 1        | 4        | 3         | 13        | 20         | 83        | 0              | 0        | 0        | 0        | 24         | 100        |
| North West                                                                         | 1        | 3        | 9         | 27        | 21         | 64        | 0              | 0        | 2        | 6        | 33         | 100        |
| Wales                                                                              | 0        | 0        | 0         | 0         | 8          | 100       | 0              | 0        | 0        | 0        | 8          | 100        |
| Northern Ireland                                                                   | 0        | 0        | 2         | 17        | 10         | 83        | 0              | 0        | 0        | 0        | 12         | 100        |
| Scotland                                                                           | 0        | 0        | 4         | 15        | 22         | 85        | 0              | 0        | 0        | 0        | 26         | 100        |
| <b>United Kingdom</b>                                                              | <b>2</b> | <b>1</b> | <b>30</b> | <b>14</b> | <b>183</b> | <b>84</b> | <b>0</b>       | <b>0</b> | <b>3</b> | <b>1</b> | <b>218</b> | <b>100</b> |

| Table 117 : ER status of cases with complete hormonal therapy data |             |           |            |           |            |          |             |           |             |            |
|--------------------------------------------------------------------|-------------|-----------|------------|-----------|------------|----------|-------------|-----------|-------------|------------|
| Region                                                             | Positive    |           | Negative   |           | Not Done   |          | Unknown     |           | Total       |            |
|                                                                    | No          | %         | No         | %         | No         | %        | No          | %         | No          | %          |
| N East, Yorks & Humber                                             | 652         | 68        | 96         | 10        | 81         | 8        | 125         | 13        | 954         | 100        |
| East Midlands                                                      | 572         | 73        | 73         | 9         | 105        | 13       | 29          | 4         | 779         | 100        |
| East of England                                                    | 458         | 73        | 64         | 10        | 0          | 0        | 107         | 17        | 629         | 100        |
| London                                                             | 411         | 71        | 69         | 12        | 25         | 4        | 77          | 13        | 582         | 100        |
| South East (East)                                                  | 422         | 68        | 66         | 11        | 0          | 0        | 130         | 21        | 618         | 100        |
| South East (West)                                                  | 378         | 75        | 59         | 12        | 6          | 1        | 63          | 12        | 506         | 100        |
| South West                                                         | 504         | 71        | 75         | 11        | 0          | 0        | 132         | 19        | 711         | 100        |
| West Midlands                                                      | 443         | 74        | 77         | 13        | 9          | 1        | 72          | 12        | 601         | 100        |
| North West                                                         | 666         | 66        | 117        | 12        | 57         | 6        | 163         | 16        | 1003        | 100        |
| Wales                                                              | 380         | 64        | 29         | 5         | 0          | 0        | 187         | 31        | 596         | 100        |
| Northern Ireland                                                   | 111         | 74        | 27         | 18        | 0          | 0        | 12          | 8         | 150         | 100        |
| Scotland                                                           | 610         | 74        | 63         | 8         | 58         | 7        | 98          | 12        | 829         | 100        |
| <b>United Kingdom</b>                                              | <b>5607</b> | <b>70</b> | <b>815</b> | <b>10</b> | <b>341</b> | <b>4</b> | <b>1195</b> | <b>15</b> | <b>7958</b> | <b>100</b> |

| Table 118 : Hormonal therapy for cases with ER not done |                  |           |                     |           |            |            |
|---------------------------------------------------------|------------------|-----------|---------------------|-----------|------------|------------|
| Region                                                  | Hormonal therapy |           | No hormonal therapy |           | Total      |            |
|                                                         | No               | %         | No                  | %         | No         | %          |
| N East, Yorks & Humber                                  | 8                | 10        | 73                  | 90        | 81         | 100        |
| East Midlands                                           | 24               | 23        | 81                  | 77        | 105        | 100        |
| London                                                  | 1                | 4         | 24                  | 96        | 25         | 100        |
| South East (West)                                       | 4                | 67        | 2                   | 33        | 6          | 100        |
| West Midlands                                           | 0                | 0         | 9                   | 100       | 9          | 100        |
| North West                                              | 11               | 19        | 46                  | 81        | 57         | 100        |
| Scotland                                                | 6                | 10        | 52                  | 90        | 58         | 100        |
| <b>United Kingdom</b>                                   | <b>54</b>        | <b>16</b> | <b>287</b>          | <b>84</b> | <b>341</b> | <b>100</b> |

| Table 119 : Hormonal therapy for cases with ER not done or unknown |                  |           |                     |           |             |            |
|--------------------------------------------------------------------|------------------|-----------|---------------------|-----------|-------------|------------|
| Region                                                             | Hormonal therapy |           | No hormonal therapy |           | Total       |            |
|                                                                    | No               | %         | No                  | %         | No          | %          |
| N East, Yorks & Humber                                             | 70               | 34        | 136                 | 66        | 206         | 100        |
| East Midlands                                                      | 44               | 33        | 90                  | 67        | 134         | 100        |
| East of England                                                    | 28               | 26        | 79                  | 74        | 107         | 100        |
| London                                                             | 33               | 32        | 69                  | 68        | 102         | 100        |
| South East (East)                                                  | 46               | 35        | 84                  | 65        | 130         | 100        |
| South East (West)                                                  | 21               | 30        | 48                  | 70        | 69          | 100        |
| South West                                                         | 36               | 27        | 96                  | 73        | 132         | 100        |
| West Midlands                                                      | 19               | 23        | 62                  | 77        | 81          | 100        |
| North West                                                         | 87               | 40        | 133                 | 60        | 220         | 100        |
| Wales                                                              | 94               | 50        | 93                  | 50        | 187         | 100        |
| Northern Ireland                                                   | 7                | 58        | 5                   | 42        | 12          | 100        |
| Scotland                                                           | 34               | 22        | 122                 | 78        | 156         | 100        |
| <b>United Kingdom</b>                                              | <b>519</b>       | <b>34</b> | <b>1017</b>         | <b>66</b> | <b>1536</b> | <b>100</b> |

| Table 120 : Invasive status of ER positive cases with known hormonal therapy data |             |           |                |          |              |          |           |          |             |            |
|-----------------------------------------------------------------------------------|-------------|-----------|----------------|----------|--------------|----------|-----------|----------|-------------|------------|
| Region                                                                            | Invasive    |           | Micro-invasive |          | Non-invasive |          | Unknown   |          | Total       |            |
|                                                                                   | No          | %         | No             | %        | No           | %        | No        | %        | No          | %          |
| N East, Yorks & Humber                                                            | 604         | 93        | 6              | 1        | 42           | 6        | 0         | 0        | 652         | 100        |
| East Midlands                                                                     | 514         | 90        | 4              | 1        | 54           | 9        | 0         | 0        | 572         | 100        |
| East of England                                                                   | 404         | 88        | 2              | 0        | 33           | 7        | 19        | 4        | 458         | 100        |
| London                                                                            | 361         | 88        | 1              | 0        | 45           | 11       | 4         | 1        | 411         | 100        |
| South East (East)                                                                 | 371         | 88        | 7              | 2        | 43           | 10       | 1         | 0        | 422         | 100        |
| South East (West)                                                                 | 335         | 89        | 0              | 0        | 40           | 11       | 3         | 1        | 378         | 100        |
| South West                                                                        | 464         | 92        | 3              | 1        | 35           | 7        | 2         | 0        | 504         | 100        |
| West Midlands                                                                     | 421         | 95        | 0              | 0        | 22           | 5        | 0         | 0        | 443         | 100        |
| North West                                                                        | 584         | 88        | 6              | 1        | 76           | 11       | 0         | 0        | 666         | 100        |
| Wales                                                                             | 362         | 95        | 3              | 1        | 15           | 4        | 0         | 0        | 380         | 100        |
| Northern Ireland                                                                  | 91          | 82        | 1              | 1        | 19           | 17       | 0         | 0        | 111         | 100        |
| Scotland                                                                          | 554         | 91        | 2              | 0        | 36           | 6        | 18        | 3        | 610         | 100        |
| <b>United Kingdom</b>                                                             | <b>5065</b> | <b>90</b> | <b>35</b>      | <b>1</b> | <b>460</b>   | <b>8</b> | <b>47</b> | <b>1</b> | <b>5607</b> | <b>100</b> |

| Table 121 : Invasive status of ER negative cases with known hormonal therapy data |            |           |                |          |              |           |           |          |            |            |
|-----------------------------------------------------------------------------------|------------|-----------|----------------|----------|--------------|-----------|-----------|----------|------------|------------|
| Region                                                                            | Invasive   |           | Micro-invasive |          | Non-invasive |           | Unknown   |          | Total      |            |
|                                                                                   | No         | %         | No             | %        | No           | %         | No        | %        | No         | %          |
| N East, Yorks & Humber                                                            | 79         | 82        | 1              | 1        | 15           | 16        | 1         | 1        | 96         | 100        |
| East Midlands                                                                     | 61         | 84        | 3              | 4        | 8            | 11        | 1         | 1        | 73         | 100        |
| East of England                                                                   | 45         | 70        | 2              | 3        | 13           | 20        | 4         | 6        | 64         | 100        |
| London                                                                            | 45         | 65        | 2              | 3        | 20           | 29        | 2         | 3        | 69         | 100        |
| South East (East)                                                                 | 49         | 74        | 2              | 3        | 15           | 23        | 0         | 0        | 66         | 100        |
| South East (West)                                                                 | 45         | 76        | 1              | 2        | 13           | 22        | 0         | 0        | 59         | 100        |
| South West                                                                        | 60         | 80        | 2              | 3        | 12           | 16        | 1         | 1        | 75         | 100        |
| West Midlands                                                                     | 55         | 71        | 1              | 1        | 21           | 27        | 0         | 0        | 77         | 100        |
| North West                                                                        | 95         | 81        | 6              | 5        | 16           | 14        | 0         | 0        | 117        | 100        |
| Wales                                                                             | 26         | 90        | 0              | 0        | 2            | 7         | 1         | 3        | 29         | 100        |
| Northern Ireland                                                                  | 22         | 81        | 0              | 0        | 5            | 19        | 0         | 0        | 27         | 100        |
| Scotland                                                                          | 56         | 89        | 1              | 2        | 6            | 10        | 0         | 0        | 63         | 100        |
| <b>United Kingdom</b>                                                             | <b>638</b> | <b>78</b> | <b>21</b>      | <b>3</b> | <b>146</b>   | <b>18</b> | <b>10</b> | <b>1</b> | <b>815</b> | <b>100</b> |

| Table 122 : Hormonal therapy for ER positive cancers |                  |           |                     |          |             |            |
|------------------------------------------------------|------------------|-----------|---------------------|----------|-------------|------------|
| Region                                               | Hormonal therapy |           | No hormonal therapy |          | Total       |            |
|                                                      | No               | %         | No                  | %        | No          | %          |
| N East, Yorks & Humber                               | 631              | 97        | 21                  | 3        | 652         | 100        |
| East Midlands                                        | 508              | 89        | 64                  | 11       | 572         | 100        |
| East of England                                      | 435              | 95        | 23                  | 5        | 458         | 100        |
| London                                               | 352              | 86        | 59                  | 14       | 411         | 100        |
| South East (East)                                    | 373              | 88        | 49                  | 12       | 422         | 100        |
| South East (West)                                    | 335              | 89        | 43                  | 11       | 378         | 100        |
| South West                                           | 466              | 92        | 38                  | 8        | 504         | 100        |
| West Midlands                                        | 419              | 95        | 24                  | 5        | 443         | 100        |
| North West                                           | 589              | 88        | 77                  | 12       | 666         | 100        |
| Wales                                                | 307              | 81        | 73                  | 19       | 380         | 100        |
| Northern Ireland                                     | 103              | 93        | 8                   | 7        | 111         | 100        |
| Scotland                                             | 562              | 92        | 48                  | 8        | 610         | 100        |
| <b>United Kingdom</b>                                | <b>5080</b>      | <b>91</b> | <b>527</b>          | <b>9</b> | <b>5607</b> | <b>100</b> |

| Table 123 : Hormonal therapy for ER positive invasive cancers |                  |           |                     |          |             |            |
|---------------------------------------------------------------|------------------|-----------|---------------------|----------|-------------|------------|
| Region                                                        | Hormonal therapy |           | No hormonal therapy |          | Total       |            |
|                                                               | No               | %         | No                  | %        | No          | %          |
| N East, Yorks & Humber                                        | 588              | 97        | 16                  | 3        | 604         | 100        |
| East Midlands                                                 | 453              | 88        | 61                  | 12       | 514         | 100        |
| East of England                                               | 390              | 97        | 14                  | 3        | 404         | 100        |
| London                                                        | 327              | 91        | 34                  | 9        | 361         | 100        |
| South East (East)                                             | 339              | 91        | 32                  | 9        | 371         | 100        |
| South East (West)                                             | 317              | 95        | 18                  | 5        | 335         | 100        |
| South West                                                    | 450              | 97        | 14                  | 3        | 464         | 100        |
| West Midlands                                                 | 408              | 97        | 13                  | 3        | 421         | 100        |
| North West                                                    | 525              | 90        | 59                  | 10       | 584         | 100        |
| Wales                                                         | 296              | 82        | 66                  | 18       | 362         | 100        |
| Northern Ireland                                              | 85               | 93        | 6                   | 7        | 91          | 100        |
| Scotland                                                      | 517              | 93        | 37                  | 7        | 554         | 100        |
| <b>United Kingdom</b>                                         | <b>4695</b>      | <b>93</b> | <b>370</b>          | <b>7</b> | <b>5065</b> | <b>100</b> |

| Table 124 : Hormonal therapy for ER positive non-invasive cancers |                  |           |                     |           |            |            |
|-------------------------------------------------------------------|------------------|-----------|---------------------|-----------|------------|------------|
| Region                                                            | Hormonal therapy |           | No hormonal therapy |           | Total      |            |
|                                                                   | No               | %         | No                  | %         | No         | %          |
| N East, Yorks & Humber                                            | 37               | 88        | 5                   | 12        | 42         | 100        |
| East Midlands                                                     | 52               | 96        | 2                   | 4         | 54         | 100        |
| East of England                                                   | 25               | 76        | 8                   | 24        | 33         | 100        |
| London                                                            | 20               | 44        | 25                  | 56        | 45         | 100        |
| South East (East)                                                 | 29               | 67        | 14                  | 33        | 43         | 100        |
| South East (West)                                                 | 15               | 38        | 25                  | 63        | 40         | 100        |
| South West                                                        | 11               | 31        | 24                  | 69        | 35         | 100        |
| West Midlands                                                     | 11               | 50        | 11                  | 50        | 22         | 100        |
| North West                                                        | 58               | 76        | 18                  | 24        | 76         | 100        |
| Wales                                                             | 9                | 60        | 6                   | 40        | 15         | 100        |
| Northern Ireland                                                  | 17               | 89        | 2                   | 11        | 19         | 100        |
| Scotland                                                          | 26               | 72        | 10                  | 28        | 36         | 100        |
| <b>United Kingdom</b>                                             | <b>310</b>       | <b>67</b> | <b>150</b>          | <b>33</b> | <b>460</b> | <b>100</b> |

| Table 125 : Hormonal therapy for ER negative cancers |                  |           |                     |           |            |            |
|------------------------------------------------------|------------------|-----------|---------------------|-----------|------------|------------|
| Region                                               | Hormonal therapy |           | No hormonal therapy |           | Total      |            |
|                                                      | No               | %         | No                  | %         | No         | %          |
| N East, Yorks & Humber                               | 11               | 11        | 85                  | 89        | 96         | 100        |
| East Midlands                                        | 14               | 19        | 59                  | 81        | 73         | 100        |
| East of England                                      | 11               | 17        | 53                  | 83        | 64         | 100        |
| London                                               | 8                | 12        | 61                  | 88        | 69         | 100        |
| South East (East)                                    | 15               | 23        | 51                  | 77        | 66         | 100        |
| South East (West)                                    | 12               | 20        | 47                  | 80        | 59         | 100        |
| South West                                           | 21               | 28        | 54                  | 72        | 75         | 100        |
| West Midlands                                        | 9                | 12        | 68                  | 88        | 77         | 100        |
| North West                                           | 15               | 13        | 102                 | 87        | 117        | 100        |
| Wales                                                | 10               | 34        | 19                  | 66        | 29         | 100        |
| Northern Ireland                                     | 0                | 0         | 27                  | 100       | 27         | 100        |
| Scotland                                             | 1                | 2         | 62                  | 98        | 63         | 100        |
| <b>United Kingdom</b>                                | <b>127</b>       | <b>16</b> | <b>688</b>          | <b>84</b> | <b>815</b> | <b>100</b> |

| Table 126 : PgR status of ER negative cancers with known hormonal therapy data |           |          |            |           |            |           |            |           |            |            |
|--------------------------------------------------------------------------------|-----------|----------|------------|-----------|------------|-----------|------------|-----------|------------|------------|
| Region                                                                         | Positive  |          | Negative   |           | Not Done   |           | Unknown    |           | Total      |            |
|                                                                                | No        | %        | No         | %         | No         | %         | No         | %         | No         | %          |
| N East, Yorks & Humber                                                         | 2         | 2        | 50         | 52        | 25         | 26        | 19         | 20        | 96         | 100        |
| East Midlands                                                                  | 5         | 7        | 22         | 30        | 38         | 52        | 8          | 11        | 73         | 100        |
| East of England                                                                | 7         | 11       | 22         | 34        | 0          | 0         | 35         | 55        | 64         | 100        |
| London                                                                         | 5         | 7        | 35         | 51        | 10         | 14        | 19         | 28        | 69         | 100        |
| South East (East)                                                              | 1         | 2        | 28         | 42        | 7          | 11        | 30         | 45        | 66         | 100        |
| South East (West)                                                              | 5         | 8        | 27         | 46        | 16         | 27        | 11         | 19        | 59         | 100        |
| South West                                                                     | 7         | 9        | 40         | 53        | 0          | 0         | 28         | 37        | 75         | 100        |
| West Midlands                                                                  | 1         | 1        | 32         | 42        | 17         | 22        | 27         | 35        | 77         | 100        |
| North West                                                                     | 5         | 4        | 58         | 50        | 17         | 15        | 37         | 32        | 117        | 100        |
| Wales                                                                          | 5         | 17       | 11         | 38        | 0          | 0         | 13         | 45        | 29         | 100        |
| Northern Ireland                                                               | 1         | 4        | 2          | 7         | 0          | 0         | 24         | 89        | 27         | 100        |
| Scotland                                                                       | 1         | 2        | 33         | 52        | 0          | 0         | 29         | 46        | 63         | 100        |
| <b>United Kingdom</b>                                                          | <b>45</b> | <b>6</b> | <b>360</b> | <b>44</b> | <b>130</b> | <b>16</b> | <b>280</b> | <b>34</b> | <b>815</b> | <b>100</b> |

| Table 127 : Hormonal therapy for ER negative, PgR positive cancers |                  |           |                     |           |           |            |
|--------------------------------------------------------------------|------------------|-----------|---------------------|-----------|-----------|------------|
| Region                                                             | Hormonal therapy |           | No hormonal therapy |           | Total     |            |
|                                                                    | No               | %         | No                  | %         | No        | %          |
| N East, Yorks & Humber                                             | 2                | 100       | 0                   | 0         | 2         | 100        |
| East Midlands                                                      | 4                | 80        | 1                   | 20        | 5         | 100        |
| East of England                                                    | 6                | 86        | 1                   | 14        | 7         | 100        |
| London                                                             | 4                | 80        | 1                   | 20        | 5         | 100        |
| South East (East)                                                  | 1                | 100       | 0                   | 0         | 1         | 100        |
| South East (West)                                                  | 2                | 40        | 3                   | 60        | 5         | 100        |
| South West                                                         | 4                | 57        | 3                   | 43        | 7         | 100        |
| West Midlands                                                      | 1                | 100       | 0                   | 0         | 1         | 100        |
| North West                                                         | 2                | 40        | 3                   | 60        | 5         | 100        |
| Wales                                                              | 4                | 80        | 1                   | 20        | 5         | 100        |
| Northern Ireland                                                   | 0                | 0         | 1                   | 100       | 1         | 100        |
| Scotland                                                           | 0                | 0         | 1                   | 100       | 1         | 100        |
| <b>United Kingdom</b>                                              | <b>30</b>        | <b>67</b> | <b>15</b>           | <b>33</b> | <b>45</b> | <b>100</b> |

| Table 128 : Hormonal therapy for ER negative, PgR negative cancers |                  |           |                     |           |            |            |
|--------------------------------------------------------------------|------------------|-----------|---------------------|-----------|------------|------------|
| Region                                                             | Hormonal therapy |           | No hormonal therapy |           | Total      |            |
|                                                                    | No               | %         | No                  | %         | No         | %          |
| N East, Yorks & Humber                                             | 7                | 14        | 43                  | 86        | 50         | 100        |
| East Midlands                                                      | 8                | 36        | 14                  | 64        | 22         | 100        |
| East of England                                                    | 0                | 0         | 22                  | 100       | 22         | 100        |
| London                                                             | 2                | 6         | 33                  | 94        | 35         | 100        |
| South East (East)                                                  | 5                | 18        | 23                  | 82        | 28         | 100        |
| South East (West)                                                  | 4                | 15        | 23                  | 85        | 27         | 100        |
| South West                                                         | 6                | 15        | 34                  | 85        | 40         | 100        |
| West Midlands                                                      | 7                | 22        | 25                  | 78        | 32         | 100        |
| North West                                                         | 8                | 14        | 50                  | 86        | 58         | 100        |
| Wales                                                              | 1                | 9         | 10                  | 91        | 11         | 100        |
| Northern Ireland                                                   | 0                | 0         | 2                   | 100       | 2          | 100        |
| Scotland                                                           | 1                | 3         | 32                  | 97        | 33         | 100        |
| <b>United Kingdom</b>                                              | <b>49</b>        | <b>14</b> | <b>311</b>          | <b>86</b> | <b>360</b> | <b>100</b> |

| Table 129 : Hormonal therapy for ER negative cancers with PgR not done |                  |          |                     |           |            |            |
|------------------------------------------------------------------------|------------------|----------|---------------------|-----------|------------|------------|
| Region                                                                 | Hormonal therapy |          | No hormonal therapy |           | Total      |            |
|                                                                        | No               | %        | No                  | %         | No         | %          |
| N East, Yorks & Humber                                                 | 0                | 0        | 25                  | 100       | 25         | 100        |
| East Midlands                                                          | 1                | 3        | 37                  | 97        | 38         | 100        |
| London                                                                 | 1                | 10       | 9                   | 90        | 10         | 100        |
| South East (East)                                                      | 6                | 86       | 1                   | 14        | 7          | 100        |
| South East (West)                                                      | 2                | 13       | 14                  | 88        | 16         | 100        |
| West Midlands                                                          | 0                | 0        | 17                  | 100       | 17         | 100        |
| North West                                                             | 0                | 0        | 17                  | 100       | 17         | 100        |
| <b>United Kingdom</b>                                                  | <b>10</b>        | <b>8</b> | <b>120</b>          | <b>92</b> | <b>130</b> | <b>100</b> |

| Table 130 : Hormonal therapy for ER negative cancers with PgR not done or unknown |                  |           |                     |           |            |            |
|-----------------------------------------------------------------------------------|------------------|-----------|---------------------|-----------|------------|------------|
| Region                                                                            | Hormonal therapy |           | No hormonal therapy |           | Total      |            |
|                                                                                   | No               | %         | No                  | %         | No         | %          |
| N East, Yorks & Humber                                                            | 2                | 5         | 42                  | 95        | 44         | 100        |
| East Midlands                                                                     | 2                | 4         | 44                  | 96        | 46         | 100        |
| East of England                                                                   | 5                | 14        | 30                  | 86        | 35         | 100        |
| London                                                                            | 2                | 7         | 27                  | 93        | 29         | 100        |
| South East (East)                                                                 | 9                | 24        | 28                  | 76        | 37         | 100        |
| South East (West)                                                                 | 6                | 22        | 21                  | 78        | 27         | 100        |
| South West                                                                        | 11               | 39        | 17                  | 61        | 28         | 100        |
| West Midlands                                                                     | 1                | 2         | 43                  | 98        | 44         | 100        |
| North West                                                                        | 4                | 7         | 50                  | 93        | 54         | 100        |
| Wales                                                                             | 5                | 38        | 8                   | 62        | 13         | 100        |
| Northern Ireland                                                                  | 0                | 0         | 24                  | 100       | 24         | 100        |
| Scotland                                                                          | 0                | 0         | 29                  | 100       | 29         | 100        |
| <b>United Kingdom</b>                                                             | <b>47</b>        | <b>11</b> | <b>363</b>          | <b>89</b> | <b>410</b> | <b>100</b> |

## APPENDIX 8

### DATA OBTAINED FROM THE SURVIVAL AUDIT OF SCREEN DETECTED BREAST CANCERS FOR CANCERS DIAGNOSED BETWEEN 1<sup>ST</sup> APRIL 1992 AND 31<sup>ST</sup> MARCH 1998

| Table 131 : Eligible cancers included in survival analysis |                 |                         |                                       |                        |             |                                   |                |                |           |
|------------------------------------------------------------|-----------------|-------------------------|---------------------------------------|------------------------|-------------|-----------------------------------|----------------|----------------|-----------|
| Region                                                     | Total submitted | Unknown invasive status | Not Registered at the Cancer Registry | Unknown diagnosis date | Recur-rence | Surgery >3 months after diagnosis | Total excluded | Total eligible |           |
|                                                            |                 |                         |                                       |                        |             |                                   |                | No.            | %         |
| N East, Yorks & Humber                                     | 5080            | 42                      | 219                                   | 0                      | 1           | 232                               | 494            | 4586           | 90        |
| East Midlands                                              | 2922            | 1                       | 148                                   | 0                      | 0           | 4                                 | 153            | 2769           | 95        |
| East of England**                                          | 768             | 15                      | 96                                    | 0                      | 1           | 20                                | 132            | 636            | 83        |
| London**                                                   | 855             | 61                      | 8                                     | 0                      | 0           | 20                                | 89             | 766            | 90        |
| South East (East)                                          | 3555            | 92                      | 123                                   | 0                      | 0           | 134                               | 349            | 3206           | 90        |
| South East (West)                                          | 2900            | 41                      | 6                                     | 0                      | 15          | 37                                | 99             | 2801           | 97        |
| South West                                                 | 3834            | 48                      | 105                                   | 0                      | 60          | 191                               | 404            | 3430           | 89        |
| West Midlands                                              | 3383            | 10                      | 0                                     | 0                      | 63          | 16                                | 89             | 3294           | 97        |
| North West                                                 | 4614            | 47                      | 64                                    | 9                      | 1           | 106                               | 227            | 4387           | 95        |
| Wales                                                      | 2712            | 4                       | 107                                   | 0                      | 4           | 14                                | 129            | 2583           | 95        |
| Northern Ireland                                           | 957             | 19                      | 0                                     | 0                      | 0           | 0                                 | 19             | 938            | 98        |
| <b>United Kingdom</b>                                      | <b>31580</b>    | <b>380</b>              | <b>876</b>                            | <b>9</b>               | <b>145</b>  | <b>774</b>                        | <b>2184</b>    | <b>29396</b>   | <b>93</b> |

\* cases are eligible for inclusion if they are confirmed by the cancer registry to be primary screen detected breast cancers with known invasive status

\*\* East of England and London only supplied data for 1997/98

| Table 132 : Invasive status of screen detected breast cancers diagnosed 1992-98 |              |           |                |          |              |           |              |
|---------------------------------------------------------------------------------|--------------|-----------|----------------|----------|--------------|-----------|--------------|
| Region                                                                          | Invasive     |           | Micro-invasive |          | Non-invasive |           | Total        |
|                                                                                 | No.          | %         | No.            | %        | No.          | %         |              |
| N East, Yorks & Humber                                                          | 3734         | 81        | 87             | 2        | 765          | 17        | 4586         |
| East Midlands                                                                   | 2281         | 82        | 38             | 1        | 450          | 16        | 2769         |
| East of England                                                                 | 494          | 78        | 25             | 4        | 117          | 18        | 636          |
| London                                                                          | 593          | 77        | 7              | 1        | 166          | 22        | 766          |
| South East (East)                                                               | 2610         | 81        | 31             | 1        | 565          | 18        | 3206         |
| South East (West)                                                               | 2160         | 77        | 44             | 2        | 597          | 21        | 2801         |
| South West                                                                      | 2788         | 81        | 55             | 2        | 587          | 17        | 3430         |
| West Midlands                                                                   | 2755         | 84        | 69             | 2        | 470          | 14        | 3294         |
| North West                                                                      | 3553         | 81        | 179            | 4        | 655          | 15        | 4387         |
| Wales                                                                           | 2054         | 80        | 58             | 2        | 471          | 18        | 2583         |
| Northern Ireland                                                                | 734          | 78        | 24             | 3        | 180          | 19        | 938          |
| <b>United Kingdom</b>                                                           | <b>23756</b> | <b>81</b> | <b>617</b>     | <b>2</b> | <b>5023</b>  | <b>17</b> | <b>29396</b> |

**Table 133 : Median age of eligible invasive cancers**

| Region                 | 1992/93     |           | 1993/94     |           | 1994/95     |           | 1995/96     |           | 1996/97     |           | 1997/98     |           | Total        |           |
|------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|--------------|-----------|
|                        | No.         | Med.      | No.         | Med.      | No.         | Med.      | No.         | Med.      | No.         | Med.      | No.         | Med.      | No.          | Med.      |
| N East, Yorks & Humber | 737         | 59        | 548         | 58        | 547         | 58        | 613         | 57        | 668         | 57        | 621         | 58        | 3734         | 58        |
| East Midlands          | 402         | 59        | 270         | 58        | 376         | 58        | 352         | 58        | 401         | 58        | 480         | 58        | 2281         | 58        |
| East of England        | -           | -         | -           | -         | -           | -         | -           | -         | -           | -         | 494         | 59        | 494          | 59        |
| London                 | -           | -         | -           | -         | -           | -         | -           | -         | -           | -         | 593         | 58        | 593          | 58        |
| South East (East)      | 402         | 58        | 366         | 58        | 346         | 58        | 444         | 59        | 503         | 59        | 549         | 58        | 2610         | 58        |
| South East (West)      | 270         | 58        | 331         | 58        | 307         | 59        | 369         | 57        | 412         | 58        | 471         | 57        | 2160         | 58        |
| South West             | 501         | 59        | 428         | 59        | 476         | 59        | 430         | 58        | 439         | 58        | 514         | 57        | 2788         | 58        |
| West Midlands          | 457         | 58        | 466         | 57        | 420         | 57        | 435         | 58        | 443         | 57        | 534         | 57        | 2755         | 58        |
| North West             | 565         | 58        | 589         | 58        | 560         | 58        | 605         | 57        | 585         | 58        | 649         | 57        | 3553         | 58        |
| Wales                  | 330         | 58        | 401         | 58        | 429         | 58        | 318         | 58        | 279         | 58        | 297         | 57        | 2054         | 58        |
| Northern Ireland       | 103         | 58        | 133         | 58        | 149         | 57        | 129         | 59        | 109         | 57        | 111         | 58        | 734          | 58        |
| <b>United Kingdom</b>  | <b>3767</b> | <b>59</b> | <b>3532</b> | <b>58</b> | <b>3610</b> | <b>58</b> | <b>3695</b> | <b>58</b> | <b>3839</b> | <b>58</b> | <b>5313</b> | <b>58</b> | <b>23756</b> | <b>58</b> |

**Table 134 : Size of eligible invasive cancers**

| Region                 | 1 - <10mm   |           | 10 - <20mm   |           | 20 - <50 mm |           | 50 +mm     |          | Unknown    |          | Total        |
|------------------------|-------------|-----------|--------------|-----------|-------------|-----------|------------|----------|------------|----------|--------------|
|                        | No.         | %         | No.          | %         | No.         | %         | No.        | %        | No.        | %        |              |
| N East, Yorks & Humber | 830         | 22        | 1833         | 49        | 885         | 24        | 59         | 2        | 127        | 3        | 3734         |
| East Midlands          | 432         | 19        | 1127         | 49        | 589         | 26        | 31         | 1        | 102        | 4        | 2281         |
| East of England        | 120         | 24        | 253          | 51        | 106         | 21        | 13         | 3        | 2          | 0        | 494          |
| London                 | 135         | 23        | 284          | 48        | 158         | 27        | 8          | 1        | 8          | 1        | 593          |
| South East (East)      | 604         | 23        | 1340         | 51        | 583         | 22        | 31         | 1        | 52         | 2        | 2610         |
| South East (West)      | 477         | 22        | 1063         | 49        | 545         | 25        | 36         | 2        | 39         | 2        | 2160         |
| South West             | 610         | 22        | 1415         | 51        | 606         | 22        | 39         | 1        | 118        | 4        | 2788         |
| West Midlands          | 595         | 22        | 1340         | 49        | 749         | 27        | 46         | 2        | 25         | 1        | 2755         |
| North West             | 828         | 23        | 1635         | 46        | 766         | 22        | 50         | 1        | 274        | 8        | 3553         |
| Wales                  | 540         | 26        | 1054         | 51        | 413         | 20        | 19         | 1        | 28         | 1        | 2054         |
| Northern Ireland       | 161         | 22        | 354          | 48        | 192         | 26        | 10         | 1        | 17         | 2        | 734          |
| <b>United Kingdom</b>  | <b>5332</b> | <b>22</b> | <b>11698</b> | <b>49</b> | <b>5592</b> | <b>24</b> | <b>342</b> | <b>1</b> | <b>792</b> | <b>3</b> | <b>23756</b> |

**Table 135 : Grade of eligible invasive cancers**

| Region                 | Grade I     |           | Grade II    |           | Grade III   |           | Not assessable |          | Unknown     |           | Total        |
|------------------------|-------------|-----------|-------------|-----------|-------------|-----------|----------------|----------|-------------|-----------|--------------|
|                        | No.         | %         | No.         | %         | No.         | %         | No.            | %        | No.         | %         |              |
| N East, Yorks & Humber | 1301        | 35        | 1470        | 39        | 673         | 18        | 14             | 0        | 276         | 7         | 3734         |
| East Midlands          | 717         | 31        | 931         | 41        | 470         | 21        | 10             | 0        | 153         | 7         | 2281         |
| East of England        | 175         | 35        | 201         | 41        | 69          | 14        | 0              | 0        | 49          | 10        | 494          |
| London                 | 209         | 35        | 255         | 43        | 100         | 17        | 7              | 1        | 22          | 4         | 593          |
| South East (East)      | 813         | 31        | 1010        | 39        | 304         | 12        | 5              | 0        | 478         | 18        | 2610         |
| South East (West)      | 686         | 32        | 904         | 42        | 361         | 17        | 7              | 0        | 202         | 9         | 2160         |
| South West             | 802         | 29        | 1027        | 37        | 411         | 15        | 8              | 0        | 540         | 19        | 2788         |
| West Midlands          | 908         | 33        | 1197        | 43        | 461         | 17        | 5              | 0        | 184         | 7         | 2755         |
| North West             | 906         | 25        | 1409        | 40        | 509         | 14        | 20             | 1        | 709         | 20        | 3553         |
| Wales                  | 700         | 34        | 931         | 45        | 264         | 13        | 2              | 0        | 157         | 8         | 2054         |
| Northern Ireland       | 225         | 31        | 300         | 41        | 104         | 14        | 3              | 0        | 102         | 14        | 734          |
| <b>United Kingdom</b>  | <b>7442</b> | <b>31</b> | <b>9635</b> | <b>41</b> | <b>3726</b> | <b>16</b> | <b>81</b>      | <b>0</b> | <b>2872</b> | <b>12</b> | <b>23756</b> |

| Table 136 : Nodal status of eligible invasive cancers |             |           |              |           |             |           |              |
|-------------------------------------------------------|-------------|-----------|--------------|-----------|-------------|-----------|--------------|
| Region                                                | Positive    |           | Negative     |           | Unknown     |           | Total        |
|                                                       | No.         | %         | No.          | %         | No.         | %         |              |
| N East, Yorks & Humber                                | 808         | 22        | 1976         | 53        | 950         | 25        | 3734         |
| East Midlands                                         | 495         | 22        | 1408         | 62        | 378         | 17        | 2281         |
| East of England                                       | 106         | 21        | 277          | 56        | 111         | 22        | 494          |
| London                                                | 142         | 24        | 303          | 51        | 148         | 25        | 593          |
| South East (East)                                     | 620         | 24        | 1270         | 49        | 720         | 28        | 2610         |
| South East (West)                                     | 447         | 21        | 1113         | 52        | 600         | 28        | 2160         |
| South West                                            | 472         | 17        | 1149         | 41        | 1167        | 42        | 2788         |
| West Midlands                                         | 567         | 21        | 1516         | 55        | 672         | 24        | 2755         |
| North West                                            | 561         | 16        | 1074         | 30        | 1918        | 54        | 3553         |
| Wales                                                 | 478         | 23        | 1563         | 76        | 13          | 1         | 2054         |
| Northern Ireland                                      | 162         | 22        | 425          | 58        | 147         | 20        | 734          |
| <b>United Kingdom</b>                                 | <b>4858</b> | <b>20</b> | <b>12074</b> | <b>51</b> | <b>6824</b> | <b>29</b> | <b>23756</b> |

| Table 137 : NPI of eligible invasive cancers |             |           |             |           |             |           |             |          |             |          |             |           |              |
|----------------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|----------|-------------|----------|-------------|-----------|--------------|
| Region                                       | EPG         |           | GPG         |           | MPG1        |           | MPG2        |          | PPG         |          | Unknown     |           | Total        |
|                                              | No.         | %         | No.         | %         | No.         | %         | No.         | %        | No.         | %        | No.         | %         |              |
| N East, Yorks & Humber                       | 648         | 17        | 824         | 22        | 569         | 15        | 315         | 8        | 184         | 5        | 1194        | 32        | 3734         |
| East Midlands                                | 473         | 21        | 558         | 24        | 425         | 19        | 219         | 10       | 121         | 5        | 485         | 21        | 2281         |
| East of England                              | 93          | 19        | 126         | 26        | 63          | 13        | 39          | 8        | 26          | 5        | 147         | 30        | 494          |
| London                                       | 94          | 16        | 137         | 23        | 106         | 18        | 54          | 9        | 35          | 6        | 167         | 28        | 593          |
| South East (East)                            | 401         | 15        | 535         | 20        | 374         | 14        | 203         | 8        | 110         | 4        | 987         | 38        | 2610         |
| South East (West)                            | 336         | 16        | 476         | 22        | 330         | 15        | 158         | 7        | 98          | 5        | 762         | 35        | 2160         |
| South West                                   | 355         | 13        | 450         | 16        | 319         | 11        | 184         | 7        | 85          | 3        | 1395        | 50        | 2788         |
| West Midlands                                | 480         | 17        | 641         | 23        | 459         | 17        | 218         | 8        | 141         | 5        | 816         | 30        | 2755         |
| North West                                   | 244         | 7         | 442         | 12        | 330         | 9         | 181         | 5        | 111         | 3        | 2245        | 63        | 3553         |
| Wales                                        | 558         | 27        | 697         | 34        | 370         | 18        | 149         | 7        | 93          | 5        | 187         | 9         | 2054         |
| Northern Ireland                             | 135         | 18        | 169         | 23        | 125         | 17        | 61          | 8        | 26          | 4        | 218         | 30        | 734          |
| <b>United Kingdom</b>                        | <b>3817</b> | <b>16</b> | <b>5055</b> | <b>21</b> | <b>3470</b> | <b>15</b> | <b>1781</b> | <b>7</b> | <b>1030</b> | <b>4</b> | <b>8603</b> | <b>36</b> | <b>23756</b> |

| Table 138 : Cause of death of eligible invasive cancers with death before 31/03/2003 |                |           |              |           |            |           |               |          |            |          |              |           |               |
|--------------------------------------------------------------------------------------|----------------|-----------|--------------|-----------|------------|-----------|---------------|----------|------------|----------|--------------|-----------|---------------|
| Region                                                                               | Breast Cancer* |           | Other cancer |           | Non-cancer |           | Not Collected |          | Unknown    |          | Total deaths |           | Total cancers |
|                                                                                      | No.            | %         | No.          | %         | No.        | %         | No.           | %        | No.        | %        | No.          | %         |               |
| N East, Yorks & Humber                                                               | 404            | 66        | 88           | 14        | 24         | 4         | 99            | 16       | 1          | 0        | 616          | 16        | 3734          |
| East Midlands                                                                        | 202            | 54        | 45           | 12        | 93         | 25        | 30            | 8        | 3          | 1        | 373          | 16        | 2281          |
| East of England                                                                      | 16             | 42        | 8            | 21        | 12         | 32        | 2             | 5        | 0          | 0        | 38           | 8         | 494           |
| London                                                                               | 40             | 73        | 4            | 7         | 9          | 16        | 2             | 4        | 0          | 0        | 55           | 9         | 593           |
| South East (East)                                                                    | 265            | 70        | 40           | 11        | 67         | 18        | 3             | 1        | 3          | 1        | 378          | 14        | 2610          |
| South East (West)                                                                    | 203            | 64        | 48           | 15        | 64         | 20        | 4             | 1        | 0          | 0        | 319          | 15        | 2160          |
| South West                                                                           | 284            | 57        | 5            | 1         | 17         | 3         | 0             | 0        | 193        | 39       | 499          | 18        | 2788          |
| West Midlands                                                                        | 256            | 63        | 45           | 11        | 90         | 22        | 0             | 0        | 14         | 3        | 405          | 15        | 2755          |
| North West                                                                           | 348            | 64        | 79           | 15        | 113        | 21        | 0             | 0        | 3          | 1        | 543          | 15        | 3553          |
| Wales                                                                                | 165            | 57        | 44           | 15        | 75         | 26        | 0             | 0        | 7          | 2        | 291          | 14        | 2054          |
| Northern Ireland                                                                     | 60             | 52        | 16           | 14        | 21         | 18        | 0             | 0        | 18         | 16       | 115          | 16        | 734           |
| <b>United Kingdom</b>                                                                | <b>2243</b>    | <b>62</b> | <b>422</b>   | <b>12</b> | <b>585</b> | <b>16</b> | <b>140</b>    | <b>4</b> | <b>242</b> | <b>7</b> | <b>3632</b>  | <b>15</b> | <b>23756</b>  |

\* death from the screen detected breast cancer

**Table 139 : Cause of death of eligible micro-invasive cancers with death before 31/03/2003**

| Region                 | Breast Cancer* |           | Other cancer |           | Non-cancer |           | Not Collected |          | Unknown  |           | Total deaths |          | Total cancers |
|------------------------|----------------|-----------|--------------|-----------|------------|-----------|---------------|----------|----------|-----------|--------------|----------|---------------|
|                        | No.            | %         | No.          | %         | No.        | %         | No.           | %        | No.      | %         | No.          | %        |               |
| N East, Yorks & Humber | 3              | 43        | 2            | 29        | 0          | 0         | 2             | 29       | 0        | 0         | 7            | 8        | 87            |
| East Midlands          | 0              | 0         | 1            | 100       | 0          | 0         | 0             | 0        | 0        | 0         | 1            | 3        | 38            |
| East of England        | 1              | 100       | 0            | 0         | 0          | 0         | 0             | 0        | 0        | 0         | 1            | 4        | 25            |
| London                 | 1              | 100       | 0            | 0         | 0          | 0         | 0             | 0        | 0        | 0         | 1            | 14       | 7             |
| South East (East)      | 4              | 80        | 0            | 0         | 1          | 20        | 0             | 0        | 0        | 0         | 5            | 16       | 31            |
| South East (West)      | 0              | 0         | 1            | 50        | 1          | 50        | 0             | 0        | 0        | 0         | 2            | 5        | 44            |
| South West             | 3              | 33        | 1            | 11        | 0          | 0         | 0             | 0        | 5        | 56        | 9            | 16       | 55            |
| West Midlands          | 3              | 75        | 0            | 0         | 1          | 25        | 0             | 0        | 0        | 0         | 4            | 6        | 69            |
| North West             | 6              | 46        | 5            | 38        | 2          | 15        | 0             | 0        | 0        | 0         | 13           | 7        | 179           |
| Wales                  | 1              | 25        | 1            | 25        | 2          | 50        | 0             | 0        | 0        | 0         | 4            | 7        | 58            |
| Northern Ireland       | 1              | 50        | 0            | 0         | 1          | 50        | 0             | 0        | 0        | 0         | 2            | 8        | 24            |
| <b>United Kingdom</b>  | <b>23</b>      | <b>47</b> | <b>11</b>    | <b>22</b> | <b>8</b>   | <b>16</b> | <b>2</b>      | <b>4</b> | <b>5</b> | <b>10</b> | <b>49</b>    | <b>8</b> | <b>617</b>    |

\* death from the screen detected breast cancer

**Table 140 : Cause of death of eligible non-invasive cancers with death before 31/03/2003**

| Region                 | Breast Cancer* |           | Other cancer |           | Non-cancer |           | Not Collected |          | Unknown   |           | Total deaths |          | Total cancers |
|------------------------|----------------|-----------|--------------|-----------|------------|-----------|---------------|----------|-----------|-----------|--------------|----------|---------------|
|                        | No.            | %         | No.          | %         | No.        | %         | No.           | %        | No.       | %         | No.          | %        |               |
| N East, Yorks & Humber | 26             | 43        | 23           | 38        | 2          | 3         | 9             | 15       | 1         | 2         | 61           | 8        | 765           |
| East Midlands          | 8              | 33        | 8            | 33        | 8          | 33        | 0             | 0        | 0         | 0         | 24           | 5        | 450           |
| East of England        | 1              | 33        | 1            | 33        | 1          | 33        | 0             | 0        | 0         | 0         | 3            | 3        | 117           |
| London                 | 3              | 33        | 1            | 11        | 4          | 44        | 0             | 0        | 1         | 11        | 9            | 5        | 166           |
| South East (East)      | 14             | 45        | 9            | 29        | 8          | 26        | 0             | 0        | 0         | 0         | 31           | 5        | 565           |
| South East (West)      | 14             | 36        | 8            | 21        | 16         | 41        | 1             | 3        | 0         | 0         | 39           | 7        | 597           |
| South West             | 18             | 34        | 1            | 2         | 4          | 8         | 0             | 0        | 30        | 57        | 53           | 9        | 587           |
| West Midlands          | 2              | 7         | 20           | 67        | 8          | 27        | 0             | 0        | 0         | 0         | 30           | 6        | 470           |
| North West             | 19             | 49        | 7            | 18        | 13         | 33        | 0             | 0        | 0         | 0         | 39           | 6        | 655           |
| Wales                  | 2              | 7         | 11           | 39        | 14         | 50        | 0             | 0        | 1         | 4         | 28           | 6        | 471           |
| Northern Ireland       | 3              | 23        | 3            | 23        | 4          | 31        | 0             | 0        | 3         | 23        | 13           | 7        | 180           |
| <b>United Kingdom</b>  | <b>110</b>     | <b>33</b> | <b>92</b>    | <b>28</b> | <b>82</b>  | <b>25</b> | <b>10</b>     | <b>3</b> | <b>36</b> | <b>11</b> | <b>330</b>   | <b>7</b> | <b>5023</b>   |

\* death from the screen detected breast cancer

| <b>Table 141 : Relative survival by region – primary invasive cancers diagnosed 1997/98</b> |                          |                         |                         |
|---------------------------------------------------------------------------------------------|--------------------------|-------------------------|-------------------------|
|                                                                                             | <b>1 year</b>            | <b>3 year</b>           | <b>5 year</b>           |
| N East, Yorks & Humber                                                                      | 99.3 (98.4,100.3)        | 96.9 (95.0,98.8)        | 95.7 (93.4,98.1)        |
| East Midlands                                                                               | 99.5 (98.5,100.6)        | 98.7 (97.0,100.5)       | 95.2 (92.5,98.0)        |
| East of England                                                                             | 100.0 (99.2,100.8)       | 99.6 (98.1,101.2)       | 96.9 (94.4,99.4)        |
| London                                                                                      | 99.9 (99.1,100.7)        | 97.1 (95.2,98.9)        | 95.1 (92.7,97.6)        |
| South East (East)                                                                           | 100.6 (100.2,100.9)      | 99.2 (97.7,100.7)       | 97.4 (95.2,99.6)        |
| South East (West)                                                                           | 100.3 (99.7,100.9)       | 98.3 (96.5,100.1)       | 96.3 (93.7,98.8)        |
| South West                                                                                  | 100.1 (99.5,100.8)       | 98.8 (97.1,100.4)       | 97.0 (94.6,99.3)        |
| West Midlands                                                                               | 99.5 (98.6,100.4)        | 95.8 (93.7,97.9)        | 94.5 (92.0,97.1)        |
| North West                                                                                  | 99.3 (98.4,100.2)        | 97.8 (96.1,99.4)        | 95.4 (93.1,97.6)        |
| Wales                                                                                       | 99.4 (98.0,100.7)        | 97.5 (95.0,100.1)       | 94.6 (91.1,98.2)        |
| Northern Ireland                                                                            | 99.7 (97.9,101.5)        | 97.5 (93.5,101.5)       | 91.5 (85.1,97.9)        |
| <b>United Kingdom</b>                                                                       | <b>99.8 (99.5,100.1)</b> | <b>97.9 (97.4,98.5)</b> | <b>95.8 (95.0,96.5)</b> |

| <b>Table 142 : 5 Year Relative survival by region – primary invasive cancers (3 year rolling)</b> |                         |                         |                         |                         |
|---------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                                   | <b>1992/93-1994/95</b>  | <b>1993/94-1995/96</b>  | <b>1994/95-1996/97</b>  | <b>1995/96-1997/98</b>  |
| N East, Yorks & Humber                                                                            | 93.1 (91.5,94.6)        | 93.9 (92.4,95.4)        | 94.4 (92.9,95.8)        | 94.4 (93.0,95.8)        |
| East Midlands                                                                                     | 92.5 (90.4,94.6)        | 94.0 (92.1,96.0)        | 94.3 (92.5,96.2)        | 94.9 (93.2,96.6)        |
| South East (East)                                                                                 | 93.5 (91.6,95.5)        | 95.2 (93.4,97.0)        | 94.9 (93.2,96.6)        | 95.9 (94.4,97.4)        |
| South East (West)                                                                                 | 93.6 (91.5,95.7)        | 94.0 (92.0,96.0)        | 94.7 (92.9,96.5)        | 95.2 (93.6,96.9)        |
| South West                                                                                        | 95.8 (94.3,97.4)        | 95.8 (94.2,97.4)        | 96.3 (94.8,97.9)        | 96.5 (95.0,98.0)        |
| West Midlands                                                                                     | 94.9 (93.3,96.5)        | 94.5 (92.9,96.2)        | 94.5 (92.8,96.1)        | 93.9 (92.2,95.5)        |
| North West                                                                                        | 94.3 (92.8,95.8)        | 94.4 (92.9,95.8)        | 94.8 (93.3,96.2)        | 95.2 (93.8,96.5)        |
| Wales                                                                                             | 96.3 (94.6,97.9)        | 95.9 (94.2,97.6)        | 95.1 (93.2,96.9)        | 94.1 (92.0,96.2)        |
| Northern Ireland                                                                                  | 91.5 (88.0,95.0)        | 91.0 (87.6,94.4)        | 93.8 (90.6,96.9)        | 94.4 (91.2,97.7)        |
| <b>United Kingdom</b>                                                                             | <b>94.2 (93.6,94.8)</b> | <b>94.5 (94.0,95.1)</b> | <b>94.8 (94.2,95.4)</b> | <b>95.1 (94.6,95.6)</b> |

| <b>Table 143 : 5 Year Relative survival by invasive status (3 year rolling)</b> |                        |                        |                        |                        |
|---------------------------------------------------------------------------------|------------------------|------------------------|------------------------|------------------------|
|                                                                                 | <b>1992/93-1994/95</b> | <b>1993/94-1995/96</b> | <b>1994/95-1996/97</b> | <b>1995/96-1997/98</b> |
| Invasive                                                                        | 94.2 (93.6,94.8)       | 94.5 (94.0,95.1)       | 94.8 (94.2,95.4)       | 95.1 (94.6,95.6)       |
| Micro-invasive                                                                  | 101.6 (99.6,103.5)     | 100.3 (98.0,102.6)     | 99.7 (97.3,102.1)      | 99.6 (97.2,101.9)      |
| Non-invasive                                                                    | 100.8 (100.0,101.6)    | 100.7 (99.9,101.4)     | 100.6 (99.9,101.4)     | 100.4 (99.7,101.1)     |

| <b>Table 144 : Relative survival by region – primary invasive cancers diagnosed 1992/93</b> |                                   |                                   |                                   |                                   |                                   |
|---------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
|                                                                                             | <b>1 year</b>                     | <b>3 year</b>                     | <b>5 year</b>                     | <b>8 year</b>                     | <b>10 year</b>                    |
| N East, Yorks & Humber                                                                      | 98.7<br>(97.7,99.8)               | 93.6<br>(91.5,95.7)               | 91.1<br>(88.5,93.7)               | 88.0<br>(84.8,91.1)               | 85.5<br>(82.0,89.0)               |
| East Midlands                                                                               | 99.1<br>(97.7,100.4)              | 94.2<br>(91.4,97.0)               | 90.7<br>(87.1,94.3)               | 88.2<br>(84.0,92.5)               | 84.7<br>(79.9,89.6)               |
| South East (East)                                                                           | 98.8<br>(97.4,100.2)              | 93.5<br>(90.6,96.4)               | 91.9<br>(88.4,95.3)               | 88.2<br>(83.9,92.4)               | 85.3<br>(80.4,90.1)               |
| South East (West)                                                                           | 100.0<br>(99.0,101.1)             | 96.5<br>(93.5,99.4)               | 92.6<br>(88.5,96.7)               | 90.0<br>(85.0,95.0)               | 84.8<br>(79.0,90.6)               |
| South West                                                                                  | 100.0<br>(99.2,100.8)             | 97.0<br>(94.8,99.1)               | 94.8<br>(92.1,97.6)               | 90.5<br>(86.9,94.2)               | 89.3<br>(85.2,93.3)               |
| West Midlands                                                                               | 99.2<br>(98.1,100.4)              | 96.2<br>(93.9,98.5)               | 94.4<br>(91.5,97.3)               | 90.5<br>(86.7,94.2)               | 89.2<br>(85.0,93.3)               |
| North West                                                                                  | 99.4<br>(98.4,100.4)              | 97.1<br>(95.2,99.0)               | 94.1<br>(91.4,96.7)               | 91.6<br>(88.3,95.0)               | 89.0<br>(85.1,92.8)               |
| Wales                                                                                       | 100.5<br>(99.9,101.1)             | 97.6<br>(95.2,100.0)              | 96.8<br>(93.7,99.8)               | 95.2<br>(91.2,99.1)               | 94.3<br>(89.7,98.8)               |
| Northern Ireland                                                                            | 99.8<br>(97.8,101.7)              | 97.5<br>(93.2,101.8)              | 94.4<br>(88.3,100.5)              | 91.5<br>(83.8,99.2)               | 94.2<br>(86.3,102.2)              |
| <b>United Kingdom</b>                                                                       | <b>99.4</b><br><b>(99.0,99.8)</b> | <b>95.6</b><br><b>(94.8,96.4)</b> | <b>93.2</b><br><b>(92.1,94.3)</b> | <b>90.1</b><br><b>(88.8,91.4)</b> | <b>87.8</b><br><b>(86.3,89.3)</b> |

| <b>Table 145 : Relative Survival for primary invasive cancers screen detected in 1992-98</b> |                        |                        |                        |                        |                        |                        |
|----------------------------------------------------------------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                                                                                              | <b>1992/93</b>         | <b>1993/94</b>         | <b>1994/95</b>         | <b>1995/96</b>         | <b>1996/97</b>         | <b>1997/98</b>         |
| 0                                                                                            | 100.0<br>(100.0,100.0) | 100.0<br>(100.0,100.0) | 100.0<br>(100.0,100.0) | 100.0<br>(100.0,100.0) | 100.0<br>(100.0,100.0) | 100.0<br>(100.0,100.0) |
| 1                                                                                            | 99.4<br>(99.0,99.8)    | 99.8<br>(99.5,100.2)   | 99.8<br>(99.5,100.1)   | 99.6<br>(99.3,100.0)   | 99.8<br>(99.4,100.1)   | 99.8<br>(99.5,100.1)   |
| 2                                                                                            | 97.6<br>(97.0,98.3)    | 98.2<br>(97.6,98.8)    | 98.9<br>(98.3,99.4)    | 98.4<br>(97.8,98.9)    | 98.7<br>(98.2,99.2)    | 99.1<br>(98.7,99.5)    |
| 3                                                                                            | 95.6<br>(94.8,96.4)    | 96.7<br>(95.9,97.5)    | 97.4<br>(96.7,98.2)    | 96.8<br>(96.1,97.6)    | 97.6<br>(96.9,98.3)    | 97.9<br>(97.4,98.5)    |
| 4                                                                                            | 94.2<br>(93.3,95.2)    | 95.5<br>(94.6,96.4)    | 96.4<br>(95.5,97.3)    | 95.3<br>(94.4,96.3)    | 96.2<br>(95.4,97.1)    | 96.6<br>(95.9,97.3)    |
| 5                                                                                            | 93.2<br>(92.1,94.3)    | 94.1<br>(93.0,95.2)    | 95.2<br>(94.2,96.2)    | 94.3<br>(93.3,95.3)    | 94.9<br>(94.0,95.9)    | 95.8<br>(95.0,96.5)    |
| 6                                                                                            | 92.0<br>(90.9,93.2)    | 93.1<br>(92.0,94.3)    | 93.8<br>(92.7,94.9)    | 93.5<br>(92.4,94.6)    | 93.9<br>(92.9,95.0)    |                        |
| 7                                                                                            | 91.0<br>(89.8,92.3)    | 91.5<br>(90.3,92.8)    | 93.0<br>(91.8,94.2)    | 92.5<br>(91.3,93.7)    |                        |                        |
| 8                                                                                            | 90.1<br>(88.8,91.4)    | 90.7<br>(89.3,92.0)    | 92.3<br>(91.0,93.6)    |                        |                        |                        |
| 9                                                                                            | 88.8<br>(87.3,90.2)    | 90.1<br>(88.7,91.5)    |                        |                        |                        |                        |
| 10                                                                                           | 87.8<br>(86.3,89.3)    |                        |                        |                        |                        |                        |

| Table 146 : 5 Year Relative survival by age for primary invasive cancers (3 year rolling) |                         |                         |                         |                         |
|-------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                           | 1992/93-1994/95         | 1993/94-1995/96         | 1994/95-1996/97         | 1995/96-1997/98         |
| <50                                                                                       | 94.9 (91.2,98.6)        | 95.8 (92.6,98.9)        | 96.3 (93.6,99.0)        | 96.1 (93.6,98.5)        |
| 50-52                                                                                     | 93.6 (92.3,94.9)        | 94.3 (93.1,95.4)        | 94.7 (93.6,95.8)        | 95.3 (94.4,96.3)        |
| 53-55                                                                                     | 92.7 (91.2,94.2)        | 93.7 (92.3,95.2)        | 94.8 (93.5,96.2)        | 95.3 (94.0,96.5)        |
| 56-58                                                                                     | 93.8 (92.4,95.1)        | 93.9 (92.5,95.3)        | 94.1 (92.7,95.5)        | 94.4 (93.0,95.7)        |
| 59-61                                                                                     | 94.4 (93.0,95.7)        | 93.9 (92.5,95.3)        | 93.8 (92.3,95.2)        | 94.5 (93.2,95.8)        |
| 62-64                                                                                     | 94.4 (93.0,95.8)        | 95.2 (93.8,96.6)        | 95.1 (93.7,96.5)        | 94.2 (92.7,95.6)        |
| 65+                                                                                       | 98.7 (96.0,101.3)       | 98.1 (95.5,100.7)       | 97.6 (95.2,99.9)        | 98.1 (96.2,100.1)       |
| <b>All invasive cancer</b>                                                                | <b>94.2 (93.6,94.8)</b> | <b>94.5 (94.0,95.1)</b> | <b>94.8 (94.2,95.4)</b> | <b>95.1 (94.6,95.6)</b> |

| Table 147 : 5 Year Relative survival by size for primary invasive cancers (3 year rolling) |                         |                         |                         |                         |
|--------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                            | 1992/93-1994/95         | 1993/94-1995/96         | 1994/95-1996/97         | 1995/96-1997/98         |
| <10mm                                                                                      | 99.0 (98.0,100.0)       | 98.9 (98.0,99.8)        | 98.5 (97.6,99.5)        | 98.3 (97.4,99.1)        |
| 10-<20mm                                                                                   | 96.4 (95.6,97.1)        | 96.5 (95.7,97.2)        | 96.5 (95.7,97.2)        | 96.8 (96.1,97.4)        |
| 20-<49mm                                                                                   | 88.0 (86.5,89.5)        | 88.5 (87.0,90.0)        | 89.1 (87.6,90.5)        | 89.8 (88.5,91.1)        |
| 50+mm                                                                                      | 69.1 (61.3,76.8)        | 73.2 (65.1,81.3)        | 76.5 (68.6,84.4)        | 78.4 (71.6,85.2)        |
| Unknown                                                                                    | 88.7 (85.5,91.9)        | 86.9 (82.8,91.0)        | 88.3 (83.4,93.3)        | 89.0 (84.0,93.9)        |
| <b>All invasive cancer</b>                                                                 | <b>94.2 (93.6,94.8)</b> | <b>94.5 (94.0,95.1)</b> | <b>94.8 (94.2,95.4)</b> | <b>95.1 (94.6,95.6)</b> |

| Table 148: 5 Year Relative survival by grade for primary invasive cancers (3 year rolling) |                         |                         |                         |                         |
|--------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                            | 1992/93-1994/95         | 1993/94-1995/96         | 1994/95-1996/97         | 1995/96-1997/98         |
| Grade I                                                                                    | 99.6 (98.9,100.4)       | 99.8 (99.1,100.5)       | 100.0 (99.3,100.7)      | 100.2 (99.6,100.8)      |
| Grade II                                                                                   | 94.4 (93.4,95.3)        | 94.9 (94.0,95.8)        | 95.1 (94.2,95.9)        | 95.6 (94.8,96.4)        |
| Grade III                                                                                  | 82.0 (79.8,84.1)        | 82.1 (80.0,84.2)        | 83.2 (81.2,85.1)        | 83.6 (81.8,85.4)        |
| Unknown                                                                                    | 94.8 (93.4,96.2)        | 95.8 (94.4,97.3)        | 96.6 (95.0,98.3)        | 95.4 (93.4,97.4)        |
| <b>All invasive cancer</b>                                                                 | <b>94.2 (93.6,94.8)</b> | <b>94.5 (94.0,95.1)</b> | <b>94.8 (94.2,95.4)</b> | <b>95.1 (94.6,95.6)</b> |

Not calculated for grade not assessable due to small numbers

| Table 149 : 5 Year Relative survival by nodal status for primary invasive cancers (3 year rolling) |                         |                         |                         |                         |
|----------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                                    | 1992/93-1994/95         | 1993/94-1995/96         | 1994/95-1996/97         | 1995/96-1997/98         |
| Positive                                                                                           | 81.6 (79.7,83.5)        | 82.8 (81.0,84.6)        | 84.6 (82.9,86.3)        | 85.9 (84.4,87.4)        |
| Negative                                                                                           | 98.2 (97.4,98.9)        | 98.1 (97.4,98.8)        | 98.1 (97.5,98.8)        | 98.0 (97.5,98.6)        |
| Unknown                                                                                            | 95.9 (95.0,96.8)        | 96.5 (95.5,97.4)        | 96.6 (95.5,97.6)        | 96.5 (95.4,97.6)        |
| <b>All invasive cancer</b>                                                                         | <b>94.2 (93.6,94.8)</b> | <b>94.5 (94.0,95.1)</b> | <b>94.8 (94.2,95.4)</b> | <b>95.1 (94.6,95.6)</b> |

| Table 150 : 5 Year Relative survival by NPI prognostic group for primary invasive cancers (3 year rolling) |                         |                         |                         |                         |
|------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                                            | 1992/93-1994/95         | 1993/94-1995/96         | 1994/95-1996/97         | 1995/96-1997/98         |
| EPG                                                                                                        | 101.3 (100.3,102.2)     | 100.9 (100.0,101.8)     | 101.0 (100.2,101.8)     | 100.9 (100.1,101.6)     |
| GPG                                                                                                        | 98.8 (97.7,99.9)        | 98.4 (97.4,99.5)        | 98.2 (97.2,99.2)        | 98.6 (97.8,99.5)        |
| MPG1                                                                                                       | 93.8 (92.1,95.6)        | 93.4 (91.7,95.0)        | 94.0 (92.6,95.5)        | 94.0 (92.7,95.3)        |
| MPG2                                                                                                       | 82.6 (79.4,85.8)        | 83.9 (80.8,86.9)        | 84.5 (81.7,87.2)        | 86.1 (83.6,88.5)        |
| PPG                                                                                                        | 57.8 (52.8,62.8)        | 59.5 (54.5,64.4)        | 64.3 (59.7,68.9)        | 66.7 (62.6,70.8)        |
| NPI Unknown                                                                                                | 95.3 (94.4,96.1)        | 96.1 (95.3,97.0)        | 96.4 (95.5,97.4)        | 96.2 (95.2,97.2)        |
| <b>All invasive cancer</b>                                                                                 | <b>94.2 (93.6,94.8)</b> | <b>94.5 (94.0,95.1)</b> | <b>94.8 (94.2,95.4)</b> | <b>95.1 (94.6,95.6)</b> |

