



Public Health  
England

ABS  
ASSOCIATION OF  
BREAST SURGERY

# **NHS breast screening programme and Association of Breast Surgery**

An audit of screen detected breast cancers  
for the year of screening  
April 2014 to March 2015

**Public Health England leads the NHS Screening Programmes**

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## About the NHS Breast Screening Programme

Breast screening aims to find breast cancer early, enabling earlier treatment and better informed decisions. This national population screening programme is implemented in the NHS on the advice of the UK National Screening Committee (UK NSC), which makes independent, evidence-based recommendations to ministers in the four UK countries. The Screening Quality Assurance Service ensures programmes are safe and effective by checking that national standards are met. PHE leads the NHS Screening Programmes and hosts the UK NSC secretariat.

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## Foreword

We are delighted to present the results of the UK NHS breast screening programme and Association of Breast Surgery screening audit for the year April 2014 to March 2015.

The audit once again confirms that the majority of women diagnosed with breast cancer through the NHSBSP receive a very high standard of care.

The introduction of key performance indicators (KPIs) has allowed more focus to be placed on key areas of practice within the diagnostic and treatment pathways of women attending for breast screening. The KPIs have been modified and refined in this year's audit and the results demonstrate ongoing improvements in performance in most areas of care and a reduction in the number of outliers.

The quality of any audit is heavily dependent on the quality of the data collected and the verification of that data. Due to the meticulous efforts of the staff in screening units and quality assurance (QA) offices the main data is of high quality and continues to improve year on year. A great strength of the audit is the continued collaboration with the Celtic nations that allows us to publish UK-wide data comparisons for the majority of data items. It has not been possible to publish the adjuvant treatment audit this year due to issues of data completeness, but work is underway to improve the data quality for future audits.

Finally, I would like to thank all of the members of the Screening Audit Group for their continued input to the audit process and their support during my three year tenure as chair.

**Mr Mark Sibbering**  
**Chair of the NHSBSP and ABS Breast Screening Audit Group**

## Acknowledgements

The 2014/15 UK NHS breast screening programme (UK NHSBSP) and Association of Breast Surgery (ABS) audit of screen-detected breast cancers was designed and directed by the NHSBSP and ABS Screening Audit Group.

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- clinical and administrative staff working in the NHS breast screening programme
- English Screening Quality Assurance Service Professional and Clinical Advisors and their Celtic country equivalents for the relevant disciplines
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# Executive summary

## Cancer detection

Between 1 April 2014 and 31 March 2015, 2,376,977 women were screened by the UK NHSBSP in England, Northern Ireland, Scotland and Wales. This figure is slightly less than in 2013/14. This is because no data were received from the West of Scotland Breast Screening Service.

A total of 20,613 cancers were detected in women of all ages; 79% were invasive, 21% non-invasive and 1% micro-invasive. This data includes women screened in the randomised controlled trial of age extension of the NHSBSP evaluating breast screening for women aged 47–49, and 71–73 years.

The cancer detection rates for all cancers and for small invasive cancers (<15mm in diameter) were 8.5 and 3.5 per 1,000 women screened, respectively. This maintains the higher cancer detection rates seen in the past five years, likely due to both the introduction of digital mammography to the programme and the effect of the age extension trial.

In 2014/15, 1,048 (5%) women diagnosed through breast screening had a previous breast cancer recorded.

## Non-operative diagnosis

In 2014/15, 97% of cancers detected in the UK NHSBSP were diagnosed by needle biopsy (ie, non-operatively).

The non-operative diagnosis rate for invasive cancers was 99% with all units meeting both the minimum and target standards.

The non-operative diagnosis of non-invasive cancers is more challenging. In 2014/15, the non-operative diagnosis rate was 87%, with 13 units not meeting the 85% minimum standard. However, this represents a significant improvement from 2013/14 when 36 units did not meet the minimum standard.

## Number of assessment clinic visits

It is possible that the drive to increase non-operative diagnosis could lead to increased anxiety, with women having to return to the assessment clinic for repeat diagnostic tests before receiving a definitive diagnosis.

So, it is reassuring that in 2014/15, of the 18,625 women with breast cancer in the UK (excluding Scotland), 91% had one assessment clinic visit to obtain the first malignant diagnosis.

## Diagnostic open biopsies

Excellent rates of non-operative diagnosis through needle biopsy mean that fewer women now require an open surgical biopsy to obtain a diagnosis.

In 2014/15, 1,945 diagnostic open biopsies were performed. Of these 71% were benign and 29% were malignant.

## Tumour characteristics

Of 4,023 non-invasive cancers, 96% were ductal carcinoma in situ (DCIS) and 4% were lobular carcinoma in situ (LCIS) only at surgery.

Out of 3,789 (98%) DCIS cases that underwent surgical treatment, 36% of tumours were less than 15mm in diameter, 15% were larger than 40mm. Sixty per cent were high nuclear grade.

Of 15,074 surgically treated invasive cancers, 53% had an invasive tumour diameter < 15mm, and only 2% had an invasive tumour diameter > 50mm.

Nodal status was known for 14,928 (99%) invasive cancers and 21% were node positive. Rates of node positivity varied from 13% to 42% in individual units. This variation is explained by the use of molecular methods for nodal assessment in some units leading to higher rates of positive nodes containing micrometastases.

The Nottingham Prognostic Index (NPI) may be used to estimate the prognosis of surgically treated invasive breast cancers. Using the NPI, 60% of cancers were in the excellent or good prognostic groups.

Determination of both oestrogen receptor (ER) and HER2 status of invasive cancers is essential for their management. ER and HER2 status were known for over 99% of invasive cancers; 91% were ER positive and 11% HER2 positive.

## Surgical treatment

Breast conserving surgery was used to treat 75% of non-invasive cancers and 78% of invasive cancers.



Immediate reconstruction rates after mastectomy were 54% for non-invasive cancers compared to 27% for invasive cancers. There was great variability in immediate reconstruction rates between screening units (for invasive cancers 0–59%, for non-invasive cancers 0-100%).

It is encouraging to note that there has been a year-on-year increase in immediate reconstruction rates after mastectomy for both non-invasive and invasive cancer, with the overall immediate reconstruction rate rising from 27% (2011/12) to 34% (2014/15).

### Neo-adjuvant therapy

A total of 919 women received neo-adjuvant therapy (pre-surgical treatment). Neo-adjuvant endocrine therapy was used in 492 (3%) of women. Neo-adjuvant chemotherapy was recorded for 447 (3%) of invasive cancers.

### Surgical caseload

Breast cancer surgery should be performed by surgeons with a specialist interest in breast disease, defined as an overall caseload of at least 30 surgically breast cancers per annum (screening and symptomatic). Each surgeon involved in the NHSBSP should maintain a surgical caseload of at least 10 screen-detected cancers per year averaged over a three-year period.

In 2014/15, 624 consultant breast surgeons treated women diagnosed in the UK NHSBSP.

Eighty-two per cent of women were treated by surgeons with a screening caseload of >30 cases, confirming that the majority are treated by surgeons experienced in the management of breast screening cases.

Over the three-year period 2012–15, 262 surgeons (34%) had an annual average caseload of < 10 cases. This was improved in 2014–15 when 156 surgeons (25%) treated fewer than 10 screen-detected cases.

### Repeat operations

A total of 4,065 (21%) surgically treated breast cancers had more than one operation. Repeat operations were more likely for non/microinvasive cancers than invasive cancers (24% vs 20%). This represents a slight improvement on 2013–14, when 26% of non/microinvasive cancers and 22% of invasive cancers had more than one operation.

## The axilla

Of the 13,712 cancers in the UK (excluding Scotland) with a non-operative diagnosis of invasive cancer on core biopsy, 99% had an axillary ultrasound recorded. This is a further improvement from 2013/14 when 97% of invasive cancers had an axillary ultrasound recorded.

Seventeen per cent of invasive cancers had an abnormal axillary ultrasound result recorded and 99% of these had a non-operative biopsy of an axillary node. A total of 961 (6.7%) women with a non-operative diagnosis of the invasive cancer also had a non-operative confirmation of axillary lymph node metastasis.

This demonstrates widespread adoption of non-operative assessment of the axilla, which is a relatively recent change in practice in the management of invasive breast cancer.

Of the 14,928 invasive cancers with known nodal status, 90% had sentinel lymph node biopsy (SLNB), 87% used isotope and blue dye. Ten per cent had sampling or clearance without SLNB.

Of the surgically treated invasive cancers without neo-adjuvant therapy, 516 (4%) of node negative invasive cancers had more than five nodes examined. Of the non-invasive cancers treated with breast conserving surgery, 86 (6%) had axillary operations. These represent potential overtreatment and are the subject of two key performance indicators (S2a and S2b).

## Adjuvant therapy

The adjuvant audit, comprising an assessment of the use of radiotherapy, chemotherapy and endocrine therapy, has relied in previous years on manual completion for data acquisition, although cancer registry data has been used on occasions to fill some gaps. For this year's audit (2013/14), it was determined that the adjuvant data needed would be acquired solely from the Cancer Analysis System (CAS) within PHE. This is a relatively new data set and the levels of data incompleteness do not permit any form of adjuvant audit for the year 2013/14. Work is underway to improve the data completeness.

## Survival

Of the 16,950 women with breast cancer submitted to the survival audit for the period 1 April 2009 to 31 March 2010, 16,272 (96%) were eligible for inclusion in the analyses.

Deaths were recorded for 832 (6%) women with invasive breast cancer up to 31 March 2015. Of these, 49% were due to breast cancer, 22% to another type of cancer and 25% to non-cancer related causes. Death cause was unknown for 4%.

For invasive cancers (n=13,082) the five-year relative survival is 98.7%. The South West has a statistically significantly higher survival rate than the UK average. No sub-regions have statistically significantly lower survival rates than the UK average.

### Key performance indicators

The introduction of key performances (KPIs) in the 2012/13 screening audit has allowed more focus to be placed on key areas of practice within the diagnostic and treatment pathways of women attending for breast screening. These KPIs have been modified and refined in subsequent audits. For the 2016 audit:

The radiology KPIs demonstrated 1) that the majority of women diagnosed with cancer are attending for a single assessment visit to obtain a malignant diagnosis; 2) significant improvements in non-operative diagnosis of non-invasive cancer; 3) excellent non-operative assessment of the axilla for invasive cancers.

The pathology KPIs demonstrate 1) a marked improvement in the consistency of Oestrogen Receptor (ER) and HER2 positive rates for invasive breast cancers; 2) reduced variability in the assessment of invasive tumour grade.

The surgery KPIs demonstrate a reduction in unit outlier performance for 1) repeat operations for involved excision margins after breast conserving surgery for invasive cancer; 2) axillary surgery for non-invasive cancers treated with breast conserving surgery; 3) potential overtreatment of the axilla for node negative invasive cancers; 4) high mastectomy rates for non-invasive cancer; 5) low immediate reconstruction rates after mastectomy for non-invasive cancer.

It is not possible to comment on the oncology KPIs.

# Introduction

## Aims and objectives

The 2014/15 UK NHS Breast Screening Programme (NHSBSP) and Association of Breast Surgery (ABS) Audit of screen-detected breast cancer was undertaken to examine UK NHSBSP clinical practice in the period 1 April 2014 to 31 March 2015 and adjuvant therapy undertaken in the period 1 April 2013 to 31 March 2014. The audit is designed to assess clinical performance by comparison of data with as many as possible of the clinical 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, 4th edition, March 2009
- Guidelines for quality assurance visits  
NHSBSP Publication No. 40, Revised, October 2000

## Organisation of the audit

The format of the audit was designed by the UK NHSBSP & ABS Screening Audit Group. The organisation of data collection, data evaluation and publication are described in Appendix 1.

## Use of the audit data

The annual NHSBSP & ABS Breast Screening Audit data should be used to celebrate high-quality services not just to focus on those not meeting screening QA standards. Achievement of standards and delivery of high quality services should also be recorded and recognised as a tribute to dedicated professionals working within breast units

### Actions following receipt of the audit

#### At national level

The NHSBSP & ABS Breast Screening Audit data should be considered formally at meetings of the National Co-ordinating Committees for Surgery, Radiology and Pathology. Representation on these committees includes the QA Professional and Clinical Advisors for the the English sub-regions and their Celtic country equivalents, as well as senior PHE breast screening programme management. This will provide opportunities to recognise areas of good practice and identify areas where breast screening performance could improve. Resultant recommendations for future

modification of the audit including any suggested changes to key performance indicators should be communicated to the Audit Group by the relevant disciplinary representatives.

#### At local/sub-regional/regional/Celtic country level

The annual NHSBSP & ABS Breast Screening Audit data should be discussed locally at a meeting of the lead breast surgeons as a minimum. SQAS staff and the relevant QA PCAs should interact with individual screening services to recognise and congratulate high quality performance. When appropriate they should identify recommendations for action if it is confirmed that performance does not meet national screening QA standards and/or key performance indicators (KPIs). There should be formal recording of the plans put in place to achieve each of the standards and KPIs that have not been met, and routine monitoring to ensure that action has been taken to rectify any identified problems. Recommendations for action could include training, improvements in the management and/or organisation of services and visits to high performing screening units from whom good practice could be learned.

#### Your comments

The NHSBSP & ABS Breast Screening Audit has developed over the years, with improvements in design and organisation resulting in improved data quality and increasingly useful results. We wish to continue this development process and your comments and suggestions are welcome.

If you have comments or suggestions about the 2014/15 audit report or the development of future NHSBSP & ABS Breast Screening Audits please contact:

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## Provision of data for the 2014/15 audit

The map below shows the areas covered by the nine English QA subregions and the breast screening information centres in Wales, Scotland and Northern Ireland. There are now four QA regions in England combining the sub-regions outside of London:

London

Midlands and East (East Midlands, West Midlands and East of England)

North (North West and North East Yorkshire & Humber)

South (South West, South Central and South East Coast)



## Screening units participating in the 2014/15 audit

Screening Units Participating in the NHSBSP & ABS Audit						
Sub-region or Celtic Country	Unit code	Unit Name	Women Screened	Total Cancers	Invasive cancers	Non/micro-invasive cancers
East Midlands	CDN	Chesterfield/North Derby	15902	112	79	33
	CDS	Derby	27082	210	167	43
	CLE	Leicester	44177	367	290	77
	CLI	Lincolnshire	31385	243	195	48
	CNN	North Nottingham	11191	91	75	16
	CNO	Nottingham	31331	247	204	43
	KKE	Kettering	15020	127	98	29
	KNN	Northampton	14919	117	92	25
East of England	DCB	Cambridge & Huntingdon	21972	157	125	32
	DGY	James Paget	10117	81	67	14
	DKL	Kings Lynn	10986	94	69	25
	DNF	Norfolk & Norwich	26070	184	160	24
	DPT	Peterborough	15386	126	100	26
	DSU	East Suffolk	17623	138	114	24
	DSW	West Suffolk	12971	118	92	26
	ELD	Beds & Herts	50226	384	291	92
	FCO	Chelmsford 7 Colchester	35599	270	228	42
	FEP	Epping	11150	104	84	20
	FSO	South Essex	24243	167	129	38
London	EBA	North London	53049	446	329	117
	ECX	West London	43470	326	260	66
	FBH	Barking, Havering, Redbridge & Brentwood	25155	229	172	57
	FLO	Central & East London	30475	213	158	55
	GCA	South East London	51163	372	307	65
	HWA	South West London	45565	438	322	115
North East, Yorkshire & Humber	AGA	Gateshead	34758	225	188	37
	ANE	Newcastle	45610	325	253	72
	ANT	North Tees	37586	271	213	58
	AWC	North Cumbria	15203	114	96	18
	BHL	Humberside	36916	251	198	53
	BHU	Pennine	44758	326	248	78
	BLE	Leeds/Wakefield	53874	309	248	61
	BYO	North Yorkshire	36831	282	230	52
	CBA	Barnsley	10207	73	61	12
	CDO	Doncaster/Bassetlaw	16881	137	104	33
	CRO	Rotherham	11722	85	76	9
North West	CSH	Sheffield	21051	148	117	31
	NCH	Chester	10074	96	75	21
	NCR	Crewe	12617	87	70	17
	NLI	Liverpool	30580	250	199	51
	NMA	East Cheshire	21221	197	152	45
	NWA	Warrington	22551	176	143	33
	NWI	Wirral	14523	161	116	45
	PBO	Bolton	26028	232	187	45
	PLE	East Lancashire	21473	169	131	38
	PLN	North Lancashire/South Cumbria	28668	268	194	74
	PMA	Greater Manchester	41066	396	307	89
	PWI	South Lancashire	26533	228	178	50

Screening Units Participating in the NHSBSP & ABS Audit						
Sub-region or Celtic Country	Unit code	Unit Name	Women Screened	Total Cancers	Invasive cancers	Non/micro-invasive cancers
South Central	JBA	North & Mid Hants	20621	161	124	37
	JIW	Isle of Wight	5105	43	33	10
	JPO	Portsmouth	26472	298	215	83
	JSO	Southampton & Salisbury	28040	238	187	51
	KHW	Aylesbury & Wycombe	22355	206	158	48
	KMK	Milton Keynes	11106	66	57	9
	KOX	Oxford	23843	201	152	49
	KRG	Reading (West Berkshire)	24605	190	152	38
	KWI	Windsor (East Berkshire)	18624	196	158	38
South East Coast	GBR	Brighton	37087	298	233	65
	GCT1	Canterbury	27491	223	175	48
	GCT2	Maidstone	18767	160	130	30
	GCT3	Medway	23325	178	139	39
	HGU	Guildford	52150	468	351	117
	HWO	Worthing	35090	292	234	58
South West	JDO	Dorset	37607	334	269	65
	JSW	Wiltshire	23281	173	138	34
	LAV	Avon	40777	361	292	69
	LCO	Cornwall	21618	157	129	28
	LED	East Devon	27754	218	152	66
	LGL	Gloucestershire	27743	250	194	56
	LPL	West Devon	23115	188	144	44
	LSO	Somerset	21958	148	118	30
	LTB	South Devon	12214	96	76	20
West Midlands	MAS	South Staffordshire	25197	203	165	38
	MBS	South Birmingham	13750	99	75	24
	MBW	City, Sandwell & Walsall	39204	309	226	83
	MCO	Warwickshire, Solihull & Coventry	42051	361	283	78
	MDU	Dudley & Wolverhampton	20977	190	150	40
	MHW	Hereford & Worcester	35225	273	223	50
	MSH	Shropshire	25117	207	162	45
	MST	North Staffordshire	20106	147	100	47
Northern Ireland	ZNE	Eastern	24032	163	144	19
	ZNI	Northern	12146	93	80	13
	ZNS	Southern	11402	52	46	6
	ZNW	Western	13816	76	64	12
Scotland*	Unit 1	Edinburgh (South East)	46583	416	337	79
	Unit 2	Dundee (East)	14355	118	100	18
	Unit 4	Aberdeen (North East)	18127	131	110	21
	Unit 5	Irvine (South West)	20711	187	156	31
	Unit 7	Inverness (North)	10925	88	66	22
Wales	WNM	North Wales	27848	305	256	49
	WSE	South Wales	55351	525	408	117
	WSW	West Wales	30166	312	242	70

\*West Scotland did not provide any data



## Key performance indicators

As part of the 2016 NHSBSP & ABS Breast Screening Audit, the performance of individual breast screening units was assessed against 12 key performance indicators identified by the clinical representatives on the UK NHSBSP & ABS Breast Screening Audit Group. Three measures were chosen for each clinical discipline (radiology, pathology, surgery and oncology) involved in the diagnosis and treatment of women screened by the UK NHSBSP.

### Highlighting of outlier performance

Statistical methods allow for identification of units with outlier performance measures which are unlikely to occur by chance alone. There is a balance to be drawn between setting the confidence limits too narrowly, resulting in a higher chance of incorrectly identifying as outliers those, whose performance is no worse than average; and setting the limits too widely, with the risk that sub-standard performance may be missed.

Identification of a unit as an 'outlier' is not in itself evidence of poor practice, rather a cause to investigate the potential reasons for outlier performance in more detail. Any such investigation should be undertaken in a supportive and collaborative manner, so that best practice is ensured, and be fully documented. Issues of data quality are frequently the cause of outlying event rates.

Throughout the text where units have not achieved or are outliers for a quality assurance (QA) standard or key performance indicator this is highlighted in text boxes. QA offices and sub-regional QA teams should follow this up.

### 2016 Key performance indicators

#### Radiology

**R1a Non-operative staging of the axilla:** > 85% of invasive cancers with a B5b non-operative diagnosis should have pre-operative axillary ultrasound recorded

**R1b Non-operative staging of the axilla:** > 85% of invasive cancers with a B5b non-operative diagnosis and with an abnormal axillary ultrasound should have a needle biopsy recorded

**R2 Repeat visits to obtain a non-operative diagnosis:** at least 80% of women should have one assessment clinic visit to obtain a non-operative diagnosis of cancer

**R3 Non-operative diagnosis for non-invasive cancers:** one-year low 95% outlier units for non-operative diagnosis of non-invasive cancers (excluding LCIS)

### Pathology

**P1 Invasive cancers with positive ER status:** one-year and three-year 99.7% high and low outlier units for positive invasive cancer ER status

**P2 Invasive cancers with positive HER status:** one-year and three-year 99.7% high and low outlier units for positive invasive cancer HER2 status

**P3 Invasive cancer grade: Invasive cancer grade:** one-year and three-year 99.7% high and low outlier units for invasive cancer grade status

### Surgery

**S1a Repeat operations for involved margins:** at least 80% of invasive cancers with an involved closest radial margin after breast conserving surgery should have a repeat operation to the breast

**S1b Repeat operations for close margins:** no more than 5% of invasive cancers with a closest radial margin greater than 5mm after breast conserving surgery should have a repeat operation to the breast

**S2a Surgical examination of axillary lymph nodes:** one-year 95% high outlier units with more than five nodes obtained from node negative invasive cancers (excluding cases with neo-adjuvant therapy)

**S2b Surgical examination of axillary lymph nodes:** one-year 95% high outliers for axillary node surgery performed on non-invasive cancers treated with breast conserving surgery

**S3a Mastectomy for non-invasive cancers:** one-year 95% high outlier units for mastectomy rate for non-invasive cancers

**S3b Immediate reconstruction for non-invasive cancers:** one-year 95% low outlier units for immediate reconstruction rates for non-invasive cancers

### Oncology (no data published)

**O1 Radiotherapy after breast conserving surgery:** one-year high outlier units for invasive cancers treated with breast conserving surgery with no or unknown adjuvant radiotherapy

**O2 Endocrine therapy for ER positive invasive cancers:** one-year high outlier units for ER positive invasive cancers with NPI >3.4 with no or unknown adjuvant endocrine therapy

**O3 Chemotherapy for node positive invasive cancers:** one-year high outlier units for node positive (with macro-metastases) invasive cancers which are Grade 3 and/or ER negative and/or HER2 positive with no or unknown adjuvant chemotherapy

Changes have been made to the following KPIs used in the 2015 audit:

R1a, R1b, R2

Scotland did not provide data for the following KPIs:

R1a, R1b, R2, S1a, S1b, O1, O2, O3

## Radiology

<b>Radiology KPI R1a</b>	<p><b>Non-operative staging of the axilla</b>                  &gt; 85% of cancers with a B5b non-operative diagnosis should have a pre-operative axillary ultrasound recorded</p>
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It is important that cases of invasive cancer have appropriate pre-operative assessment of the axilla by ultrasound scan. This KPI has been changed since last year’s audit and excludes those cancers that did not have a non-operative diagnosis.

**All units in England, Wales and Northern Ireland achieved this KPI.**

Scotland did not provide data.

<b>Radiology KPI R1b</b>	<p><b>Non-operative staging of the axilla</b>                  &gt; 85% of cancers with a B5b non-operative diagnosis and with an abnormal axillary ultrasound should have a needle biopsy recorded</p>
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Abnormal ultrasound findings should usually be acted upon by carrying out a needle biopsy with the aim of diagnosing malignant axillary nodes pre-operatively.

**84 units (97%) achieved this key performance indicator.**

Three units in England did not achieve this KPI for 2014/15. However, for two of these units the numbers involved are too small to be meaningful. Unit MSH requires follow up.

**Outlier units:**

**<=85% of cancers with a B5B non-operative diagnosis and with an abnormal axillary ultrasound having a needle biopsy recorded**

Sub-region	Unit	2014/15	
		No.	%
NEYH	CBA	5	83.3
North West	NMA	<5	60.0
West Midlands	MSH	14	82.4
UK Total		2295	98.9

 <=85%

**Radiology KPI R2**

**Repeat assessment clinic visits**

At least 80% of women should have one assessment clinic visit to obtain a non-operative diagnosis of cancer

It is possible that the drive to increase non-operative diagnosis could lead to increased anxiety, with women having to return to the assessment clinic for repeat diagnostic tests before receiving a definitive diagnosis.

Following the 2013/2014 audit, the wording of this KPI was amended. It became apparent following last year's audit that some of the additional visits recorded at some units were to obtain information to aid surgical planning/upgrade to invasive cancer rather than to obtain the initial non-operative diagnosis of cancer.

This KPI applies to units that require more than one visit to the assessment clinic to obtain a B5 or C5 cancer diagnosis. This does not apply to units where women have had further workup following a cancer diagnosis to aid treatment planning.

**Outlier units:**

**< 80% of women having one assessment clinic visit to obtain a non-operative diagnosis**

Sub-region	Unit	All cancers 2014/15		Invasive 2014/15	Non-invasive 2014/15
		No.	%	%	%
South East Coast	GCT2	117	73.1	83.1	31.0
South West	LED	170	78.0	93.4	40.6
<b>UK</b>		<b>16876</b>	<b>90.6</b>	<b>94.6</b>	<b>75.7</b>

<80%

**85 units (98%) achieved this key performance indicator.**

The two units identified in the 2014/15 audit where less than 80% of women with breast cancer had one assessment clinic visit to obtain a malignant diagnosis require follow up.

Five units did not meet this KPI in the 2013/14 audit.

**Radiology KPI R3**

**Non-operative diagnosis for non-invasive cancers**

One-year 95% low outlier units for non-operative diagnosis of non-invasive cancers (excluding LCIS)

Achieving a non-operative diagnosis allows pre-operative treatment planning and discussion with the patient and avoids the need for open diagnostic surgical biopsies.

**Outlier units:**

**Non-operative diagnosis rates for non-invasive cancers with and without LCIS**

Sub-region	Unit	Non-invasive exc LCIS 2014/15		All non-invasive 2014/15	Non-invasive exc LCIS 3-year 2012-15
		No.	%		
South Central	JPO	61	80.3	74.4	80.1
South East Coast	GCT3	26	76.5	72.2	84.9
South West	JSW	22	75.9	76.7	86.0
West Midlands	MDU	29	74.4	72.5	84.8
<b>UK</b>		<b>3561</b>	<b>92.2</b>	<b>87.7</b>	<b>90.7</b>

 95% low outlier

**88 units (96%) were not low outliers for this key performance indicator.**

**12 units (13%) achieved a non-operative diagnosis for ALL non-invasive cancers diagnosed in 2014/15.**

Four units were 95% low outliers in 2014/15 and require follow up.

Unit JPO was also a 95% low outlier in 2013/14, and a 95% low outlier for the three year period 2012-15.

## Pathology

### Pathology KPI P1

**Invasive cancers with positive ER status - one-year and three-year 99.7% high and low outlier units for positive invasive cancer ER status**

Oestrogen receptor (ER) status for invasive breast cancers plays an important role in treatment planning and the use of endocrine treatment.

**There are no outliers for this KPI in 2014/15.**

### Pathology KPI P2

**Invasive cancers with positive HER2 status – one-year and three-year 99.7% high and low outlier units for positive invasive cancer HER2 status**

HER2 (human epidermal growth factor) status for invasive breast cancers plays an important role in treatment planning and the use of both chemotherapy and trastuzumab.

**There are no outliers for this KPI in 2014/15.**

**Pathology KPI P3**

**Invasive cancer grade – one-year and three-year 99.7% high and low outlier units for invasive cancer grade status**

Invasive cancer grade is a prognostic factor that plays an important role in pre- and post-operative treatment planning

**Outlier units: Proportion of surgically treated invasive cancers by grade**

Sub-region	Unit	Grade 1 2014/15	Grade 1 3-year 2012-15	Grade 2 2014/15	Grade 2 3-year 2012-15	Grade 3 2014/15	Grade 3 3-year 2012-15
		%	%	%	%	%	%
East Midlands	CDN	44.3	37.4	44.3	45.8	11.4	16.8
East Midlands	KKE	11.2	16.5	67.3	66.9	21.4	16.5
East of England	DSW	14.1	12.5	65.2	62.3	20.7	24.9
North West	PBO	33.2	31.4	37.5	42.4	29.3	26.0
North West	PLE	26.4	34.6	62.8	53.8	10.9	11.6
North West	PWI	38.3	35.8	47.4	49.3	14.3	14.9
South Central	JIW	9.1	12.4	69.7	62.7	21.2	24.8
South East Coast	GBR	24.0	24.8	45.5	45.2	30.0	29.6
South West	LGL	15.8	17.8	63.7	63.0	20.5	19.0
South West	LTB	42.7	29.3	49.3	58.3	8.0	12.4
UK		25.3	25.4	54.4	54.0	19.8	20.0

 99.7% low outlier

 99.7% high outlier

**82 units (89%) were not outliers for this key performance indicator.**

Ten units were outliers for this KPI in both 2014/15 and the three-year period of 2012-2015.

Two units that were outliers for this KPI in 2013/2014 are still outliers in 2014/15.

All outliers (high or low) require follow up.

## Surgery

### Surgery KPI S1a

#### Repeat operations for involved margins

At least 80% of invasive cancers with an involved closest radial margin after breast conserving surgery should have a repeat operation to the breast

Involved surgical excision margins are an important factor in relation to local recurrence after breast conserving surgery for invasive breast cancer.

#### Outlier units:

Proportion of invasive cancers with an involved closest radial margin after breast conserving surgery that had a repeat operation to the breast

Sub-region	Unit	2014/15		3-year 2012/13-2014/15		Previous 2013/14
		No.	%	No.	%	%
London	ECX	28/36	77.8	59/78	75.6	83.3
North West	NCR	8/12	66.7	36/41	87.8	100
North West	NWA	6/9	66.7	18/27	66.7	55.6
North West	PWI	5/7	71.4	24/26	92.3	100
South East Coast	GBR	13/17	76.5	43/54	79.6	87.5
West Midlands	MSH	5/8	62.5	21/26	80.8	100
<b>UK total</b>		<b>1273</b>	<b>93.9</b>	<b>3792</b>	<b>92.5</b>	<b>92.6</b>



**81 units (93%) achieved this key performance indicator.**

Six units did not achieve this KPI in 2014/15.

For three of these units (NCR, PWI and MSH) the numbers involved are too small to be meaningful and they are not three year outliers (2012-15). These do not require follow up.

Three units (ECX, NWA and GBR) also did not achieve this KPI for the three-year period 2012–15 and require follow up.



**Surgery KPI S1b**

**Repeat operations for close margins**

No more than 5% of invasive cancers with a closest radial margin greater than 5mm after breast conserving surgery should have a repeat operation to the breast

Current evidence suggests that with modern adjuvant treatments very wide surgical excision margins after breast conserving surgery for invasive breast cancer is unnecessary to achieve good local control. Repeat therapeutic surgery for reported clear margins of at least 5mm should not be necessary.

**Outlier units:**

**Proportion of invasive cancers with a closest radial margin greater than 5mm after breast conserving surgery that had a repeat operation to the breast**

Sub-region	Unit	2014/15		3-year 2012-15		Previous 2013/14
		No.	%	No.	%	%
London	GCA	<5	6.7	12	5.9	3.4
NEYH	CBA	<5	5.3	<5	4.1	3.8
West Midlands	MAS	<5	5.1	9	3.7	3.1
Northern Ireland	ZNI	<5	12	10	15.2	18.8
<b>UK total</b>		<b>46</b>	<b>1.0</b>	<b>220</b>	<b>1.7</b>	<b>1.9</b>



**83 units (95%) achieved this key performance indicator.**

Four units did not achieve this KPI in 2014/15. Although there are small numbers of cases involved, this should be an uncommon event and all require follow up.

One unit who did not achieve this KPI in 2013/14 is still an outlier in 2014/15, and also a three-year outlier (2012–15).

**Surgery KPI S2a**

**Surgical examination of axillary lymph nodes**

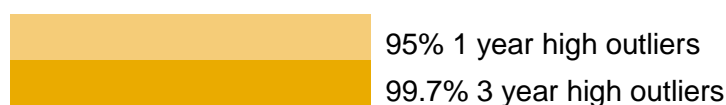
One-year 95% high outlier units with more than five nodes obtained from node negative invasive cancers (excluding cases with neo-adjuvant therapy)

All women with invasive breast cancer should have a surgical axillary staging procedure carried out if there is not a non-operative diagnosis of lymph node metastasis. This should ideally be a sentinel lymph node biopsy (but may be a four node axillary sample if there is failed localisation by isotope or blue dye). More than five lymph nodes obtained from node negative cases may indicate overtreatment.

**Outlier units:**

**Proportion of node negative invasive cancers with more than 5 nodes obtained**

Sub-region	Unit	2014/15		3-year 2012-15		Previous 2013/14
		No.	%	No.	%	%
East Midlands	CNN	11/60	18.3	24	16.9	19.5
East of England	ELD	21/209	10.0	70	9.4	8.8
London	ECX	18/179	10.1	54	10.7	10.6
NEYH	ANT	17/173	9.8	139	27.6	34.4
South East Coast	GBR	22/178	12.4	92	17.7	14.5
Northern Ireland	ZNI	9/68	13.2	17	9.9	7.7
<b>UK</b>		<b>516</b>	<b>4.6</b>	<b>1978</b>	<b>5.9</b>	<b>5.7</b>



**86 units (93%) were not high outliers for this key performance indicator.**

Six units were 95% high outliers in 2014/15.

Four units of these units did not achieve this KPI in 2013/14.

Five units are 99.7% high outliers for the the three-year period 2012–15. These five units require follow up.

**Surgery KPI S2b**



**Surgical examination of axillary lymph nodes**

One-year 95% high outliers for axillary node surgery performed on non-invasive cancers treated with breast conserving surgery

**Outlier units:**

**Proportion of non-invasive cancers treated with breast conserving surgery that had axillary node surgery**

Sub-region	Unit	2014/15		3-year 2012-15	
		No.	%	No.	%
East of England	ELD	11/69	15.9	31	13.9
London	FBH	9/47	19.1	24	21.8
<b>UK</b>		<b>186</b>	<b>6.1</b>	<b>563</b>	<b>6.4</b>

 95% 1 year high outlier  
 99.7% 3-year high outlier

**90 units (98%) were not high outliers for this key performance indicator.**

Two units were 95% high outliers in 2014/15 and three-year 99.7% high outliers for 2012–15. Both units require follow up.

**Surgery KPI S3a**


**Mastectomy for non-invasive cancers**

One-year 95% high outlier units for mastectomy rate for non-invasive cancers

There is wide variation in mastectomy rates for both invasive and non-invasive cancer, the reasons for which are multifactorial. Given the current debate regarding overtreatment of screen-detected breast cancer, and in particular non-invasive breast cancer, monitoring of mastectomy rates is prudent.

**Outlier units:  
High mastectomy rates for non-invasive cancers**

Sub-region	Unit	2014/15		3-year 2012-15		Previous 2013/14
		No.	%	No.	%	%
East Midlands	CLE	24/71	33.8	66	30.6	27.9
London	GCA	25/64	39.1	58	29.7	20.0
South Central	KMK	5/9	55.6	16	43.2	26.7
South West	LSO	14/30	46.7	38	38.0	45.5
West Midlands	MSH	17/45	37.8	29	27.9	21.9
Northern Ireland	ZNS	<5	75	5	31.3	28.6
Wales	WSW	24/70	34.3	58	31.7	33.8
<b>UK</b>		<b>916</b>	<b>22.8</b>	<b>2769</b>	<b>23.5</b>	<b>23.3</b>

 95% high outlier

**85 units (92%) were not high outliers for this key performance indicator.**

Seven units were 95% high outliers in 2014/15. For unit ZNS the numbers involved are too small to be meaningful and no follow up is required. The other six units require follow up.

Four units were 95% high outliers for the three-year period 2012–15.

Although the the numbers involved are small for service KMK, it is also a 95% high outlier for the three-year period 2012–15.

One unit that was a 95% high outlier in 2013/14 is still a 95% high outlier in 2014/15.

**Surgery KPI S3b**

**Immediate reconstruction rates for non-invasive cancers**

One-year 95% low outlier units for immediate reconstruction rates for non-invasive cancers

Women having treatment for breast cancer by mastectomy should where feasible and appropriate be offered the option of immediate breast reconstruction. Immediate reconstruction rates for invasive breast cancer are often difficult to interpret due to the potential need for chest wall radiotherapy and a proportion may be advised to consider delayed reconstruction. Chest wall radiotherapy will not usually be required following mastectomy for non-invasive cancer.

**Outlier units:**

**Immediate reconstruction rate of non-invasive cancers treated by mastectomy**

Sub-region	Unit	Immediate reconstruction 1-year 2014/15		Immediate reconstruction 3-yr 2012-15	
		No.	%	No.	%
East Midlands	CDN	<5	22.2	7/17	41.2
East of England	ELD	0/14	0	12/51	23.5
London	FBH	<5	22.2	6/26	23.1
London	FLO	5/18	27.8	11/30	36.7
South West	LPL	0/5	0	5/21	23.8
South West	LSO	<5	14.3	13/38	34.2
Northern Ireland	ZNI	0*	0	<5	15.4
Northern Ireland	ZNS	0*	0	<5	0
Northern Ireland	ZNW	0*	0	<5	22.2
Scotland	Unit 2	0*	0	8/16	50.0
Wales	WSW	6/24	25.0	8/58	13.8
<b>UK</b>		<b>493</b>	<b>54.4</b>	<b>1342</b>	<b>48.6</b>

\* less than 5 cases in the denominator

 95% low outlier

**77 units (84%) were not low outliers for this key performance indicator.**

Eleven units were 95% low outliers in 2014/15.

For the majority of these units the numbers of non-invasive cancers treated by mastectomy in 2014/15 were too small to be meaningful in assessing immediate reconstruction rates and no follow up is required.

Unit ELD carried out no immediate reconstruction in 2014/15 and was also a three-year (2012–15) 95% low outlier and requires follow up.

**Surgery KPI S3a  
S3b**

One-year 95% high outlier units for mastectomy rate for non-invasive cancers who are also one-year 95% low outlier units for immediate reconstruction rates for non-invasive cancers

**Outlier units:**

**High mastectomy rates for non-invasive cancers with low rates of immediate reconstruction**

Sub-region	Unit	Mastectomy 1-year 2014/15		Immediate reconstruction 1-year 2014/15		Mastectomy 3-year 2012-15	Immediate reconstruction 3-year 2012-5
		No.	%	No.	%	%	%
South West	LSO	14/30	46.7	<5	14.3	38.0	34.2
Northern Ireland	ZNS	<5	75.0	0*	0	31.1	0
Wales	WSW	24/70	34.3	6/24	25.0	31.7	13.8
<b>UK</b>		<b>907</b>	<b>22.5</b>	<b>493</b>	<b>54.4</b>	<b>23.4</b>	<b>48.6</b>

\* less than 5 cases in the denominator

	95% immediate reconstruction low outlier
	95% mastectomy high outlier

Three units were both high mastectomy rate and low immediate reconstruction rate 95% one-year outliers for 2014–15. All three units require follow up.

One unit (ZNS) appears to have carried out no immediate reconstruction for non-invasive cancers in the three-year period 2012–15.

One unit (WSW) was also both a high mastectomy rate and low immediate reconstruction rate 95% outlier for the three-year period 2012–15.

## Summary table of KPI outliers

Sub region - Unit	Radiology				Pathology						Surgery						Total outlier topics
	R1a	R1b	R2	R3	P1	P2	P3	P3-G1	P3-G2	P3-G3	S1a	S1b	S2a	S2b	S3a	S3b	
East Midlands - CDN							Y	Y								Y	2
East Midlands - CDS																	0
East Midlands - CLE															Y		1
East Midlands - CLI																	0
East Midlands - CNN												Y					1
East Midlands - CNO																	0
East Midlands - KKE							Y	Y									1
East Midlands - KNN																	0
East of England - DCB																	0
East of England - DGY																	0
East of England - DKL																	0
East of England - DNF																	0
East of England - DPT																	0
East of England - DSU																	0
East of England - DSW							Y	Y									1
East of England - ELD												Y	Y			Y	3
East of England - FCO																	0
East of England - FEP																	0
East of England - FSO																	0
London - EBA																	0
London - ECX										Y		Y					2
London - FBH													Y			Y	2
London - FLO																Y	1
London - GCA											Y				Y		2
London - HWA																	0
NEYH - AGA																	0
NEYH - ANE																	0
NEYH - ANT												Y					1
NEYH - AWC																	0
NEYH - BHL																	0
NEYH - BHU																	0
NEYH - BLE																	0
NEYH - BYO																	0
NEYH - CBA		Y										Y					2
NEYH - CDO																	0
NEYH - CRO																	0
NEYH - CSH																	0
North West - NCH																	0
North West - NCR											Y						1
North West - NLI																	0
North West - NMA		Y															1
North West - NWA											Y						1
North West - NWI																	0
North West - PBO							Y		Y								1
North West - PLE							Y			Y							1
North West - PLN																	0
North West - PMA																	0

Sub region - Unit	Radiology				Pathology						Surgery						Total outlier topics
	R1a	R1b	R2	R3	P1	P2	P3	P3-G1	P3-G2	P3-G3	S1a	S1b	S2a	S2b	S3a	S3b	
North West - PWI							Y	Y			Y						2
South Central - JBA																	0
South Central - JIW							Y	Y									1
South Central - JPO				Y													1
South Central - JSO																	0
South Central - KHW																	0
South Central - KMK															Y		1
South Central - KOX																	0
South Central - KRG																	0
South Central - KWI																	0
South E Coast - GBR							Y			Y	Y		Y				3
South E Coast - GCT1																	0
South E Coast - GCT2			Y														1
South E Coast - GCT3				Y													1
South E Coast - HGU																	0
South E Coast - HWO																	0
South West - JDO																	0
South West - JSW				Y													1
South West - LAV																	0
South West - LCO																	0
South West - LED			Y														1
South West - LGL							Y	Y									1
South West - LPL																Y	1
South West - LSO															Y	Y	2
South West - LTB							Y			Y							1
West Midlands - MAS												Y					1
West Midlands - MBS																	0
West Midlands - MBW																	0
West Midlands - MCO																	0
West Midlands - MDU				Y													1
West Midlands - MHW																	0
West Midlands - MSH		Y									Y				Y		3
West Midlands - MST																	0
Northern Ireland - ZNE																	0
Northern Ireland - ZNI												Y	Y			Y	3
Northern Ireland - ZNS															Y	Y	2
Northern Ireland - ZNW																Y	1
Scotland - Unit 1																	0
Scotland - Unit 2																Y	1
Scotland - Unit 4																	0
Scotland - Unit 5																	0
Scotland - Unit 7																	0
Wales - WNM																	0
Wales - WSE																	0
Wales - WSW															Y	Y	2
<b>United Kingdom</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>7</b>	<b>11</b>	<b>55</b>



# Audit results

## Cancer detection

- 2,376,977 women were screened by the NHSBSP
- data is included for 92 screening units (no data was received for West of Scotland Breast Screening Service)
- 20,613 new cancers were detected in women of all ages:
  - This includes women with a previous breast cancer diagnosis
  - 16,231 (78.7%) invasive
  - 4,226 (20.5%) non-invasive
  - 152 (0.7%) micro-invasive
    - 4 cancers - invasive status unknown

19-year comparison: Number of cancers detected									
Year of data collection	Number of invasive cancers	Number of <15mm cancers	Number of non/micro-invasive cancers	Total cancers	Number of women screened	Cancer detection rates per 1,000 women screened			
						Invasive	Invasive (<15mm)	Non/micro-invasive	Total
1996/97	5,860	-	1,468	7,410	1,340,175	4.4	-	1.1	5.5
1997/98	6,427	-	1,726	8,215	1,419,287	4.5	-	1.2	5.8
1998/99*	6,337	-	1,634	8,028	1,308,751	4.7	-	1.2	6.1
1999/00	7,675	-	2,076	9,797	1,550,285	5.0	-	1.3	6.3
2000/01	7,945	4,190	2,080	10,079	1,535,019	5.2	2.7	1.4	6.6
2001/02	7,911	4,244	2,218	10,191	1,507,987	5.2	2.8	1.5	6.8
2002/03	8,931	4,971	2,416	11,593	1,579,165	5.7	3.1	1.5	7.3
2003/04	10,400	5,488	2,868	13,290	1,685,661	6.2	3.3	1.7	7.9
2004/05	11,063	5,869	2,953	14,040	1,748,997	6.3	3.4	1.7	8.0
2005/06	12,600	6,673	3,317	15,944	1,942,449	6.5	3.4	1.7	8.2
2006/07	12,491	6,577	3,337	15,856	1,955,825	6.4	3.4	1.7	8.1
2007/08	13,305	7,005	3,466	16,792	2,042,497	6.5	3.4	1.7	8.2
2008/09	13,532	7,028	3,491	17,045	2,116,588	6.4	3.3	1.6	8.1
2009/10	13,672	7,169	3,333	17,013	2,133,189	6.4	3.4	1.6	8.0
2010/11	14,219	7,314	3,612	17,838	2,221,938	6.4	3.3	1.6	8.0
2011/12	14,911	7,764	3,810	18,745	2,261,942	6.6	3.4	1.7	8.3
2012/13	15,287	7,876	4,024	19,339	2,303,332	6.6	3.4	1.7	8.4
2013/14	16,768	8,626	4,421	21,195	2,447,675	6.9	3.5	1.8	8.7
2014/15*	16,231	8,435	4,378	20,613	2,414,795	6.7	3.5	1.8	8.5

\* Data from Scotland are absent in 1998/99, West of Scotland screening service data is absent in 2014/15.

**Table 1: Number and rates of cancers detected by year from 1996/97 to present**

- UK Cancer detection rates:
  - all cancers: 8.5 per 1,000 women screened
  - small invasive cancers: 3.5 per 1,000 women screened (<15mm in diameter)

**Five screening units had cancer detection rates for small invasive cancers (<15mm) below 3.0 per 1,000 women screened each year throughout the period 2012–15; four of these are significant low outliers in 2014/15. Three of these units screened fewer than 14,000 women annually.**

## Randomised controlled age extension trial in the NHSBSP

This is evaluating breast screening for women aged 47–49, and 71–73 years in England

- as of 31 March 2015, 67 of 80 screening units in England had started the trial (a further 9 services screen 47–49 years only and are not part of the trial)
- the proportion of cancers diagnosed in the trial age groups increased as follows from 2010/11 to 2014/15:
  - 47–49 years: 2.8% to 5.4%
  - 71–73 years: 4.1% to 5.6%

This trial is ongoing and results that would inform decision making regarding routine implementation of breast screening in these age groups are not expected until the 2020s. There is currently no equivalent trial in Northern Ireland, Scotland and Wales.

## Previous breast cancer history

- 1,048 (5%) women had at least one previous breast cancer recorded
  - 81% had previous invasive/micro-invasive breast cancer
  - 18% had previous non-invasive breast cancer
  - 1% had both invasive and non-invasive breast cancers
  - The proportion of women with a previous breast cancer increased with age, the average for women aged >64 years being 7.6%

Women with a previous breast cancer history are included in the numbers for the cancer detection, diagnostic open biopsies and surgical caseload sections of the report [page 33, 37, 46], but have otherwise been excluded.

# Diagnosis

## Non-operative diagnosis

<b>Quality Objective</b>	To minimise unnecessary surgery (ie to reduce diagnostic open surgical biopsies that prove to be malignant)
<b>Minimum Standard</b>	90% of all invasive cancers should have a non-operative pathological diagnosis 85% of all non-invasive cancers should have a non-operative pathological diagnosis
<b>Target Standard</b>	95% of all invasive cancers should have a non-operative pathological diagnosis 90% of all non-invasive cancers should have a non-operative pathological diagnosis

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, 4<sup>th</sup> Edition, March 2009)

For the 19,565 cancers detected in women of all ages in 2014/15:

- 97% had a confirmed non-operative diagnosis by needle biopsy
- 3% did not have a non-operative diagnosis (n=551)
- 14 had C5 cytology only to achieve a non-operative diagnosis

For invasive cancers detected in 2014/15:

- 99% had a confirmed non-operative diagnosis by needle biopsy
- All units met the 90% minimum standard and the 95% target standard

For non-invasive cancers excluding Lobular Carcinoma in Situ (LCIS) detected in 2014/15:

- 92% had a confirmed non-operative diagnosis by needle biopsy
- 13 units did not meet the 85% minimum standard
- 30 units did not meet the 90% target standard
- one-year low outlier units (2014/15) for non-operative diagnosis of non-invasive cancers (excluding LCIS) have been identified in Radiology KPI R3 - page 21 (Figure 1):

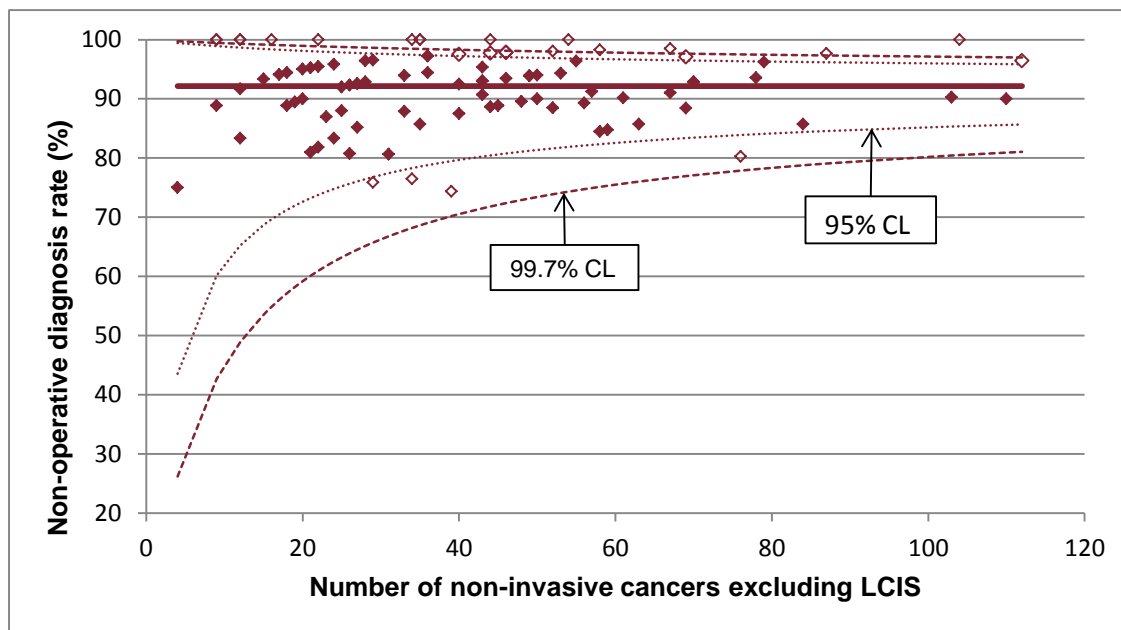
**Four units were 95% low outliers in 2014/15.**

**One of these outliers was also a 95% low outlier in 2013/14, and a 99.7% low outlier for the three year period 2012–15.**

The Scottish data did not specify whether non-invasive cases were LCIS or not and therefore it is not possible to calculate non-operative diagnosis rates excluding LCIS.

For the three-year period 2012 to 2015:

- 13 units had a non-operative diagnosis rate for non-invasive cancers below 85%



**Figure 1: Screening unit variation in non operative diagnosis rate of non-invasive cancers (excluding LCIS)**

Core biopsy and surgical outcome:

- in 2014/15, 116 (1%) cancers had a malignant but B5c categorisation at core biopsy, (ie the invasive status was either not assessable or unknown)
- 774 (18%) cancers were upgraded from a non-invasive (B5a) cancer at non-operative diagnosis to invasive cancer at surgery
- 166 (1%) cancers diagnosed as B5b (invasive) through a non-operative biopsy were found to have non-invasive or micro-invasive cancer with no associated invasive disease following surgery. The likely causes of this are either that the invasive focus was removed by the core biopsy or incorrect interpretation of the core biopsy as showing invasive disease. These cases require additional audit

### Number of assessment clinic visits

It is possible that the drive to increase non-operative diagnosis could lead to increased anxiety, with women having to return to the assessment clinic for repeat diagnostic tests before receiving a definitive diagnosis.

- in 2014/15, of the 18,625 women with breast cancer in the UK (excluding Scotland), 16,876 (91%) had one assessment clinic visit to obtain the first malignant diagnosis

- 650 (4%) of women with invasive cancer and 543 (14%) of women with non-invasive cancer had more than one visit to obtain a malignant diagnosis

**There are five outlier units in the 2013–14 audit and two units identified in the 2014–15 audit where less than 80% of women with breast cancer had one assessment clinic visit to obtain a malignant diagnosis (Radiology KPI R2 - page 20).**

In 2014/15, there were 365 (2%) invasive cancers and 190 (5%) non-invasive cancers where a malignant needle biopsy result (either B5 core biopsy or C5 cytology) was obtained at the first visit, but where a repeat needle biopsy was undertaken at a subsequent visit usually to aid surgical planning or to attempt to upgrade to DCIS.

### Diagnostic open biopsies

<b>Quality Objective</b>	To minimise benign diagnostic open surgical biopsies
<b>Maximum Standard</b>	<15 per 10,000 prevalent screen (1.5 per 1,000) <10 per 10,000 incident screen (1.0 per 1,000)
<b>Target Standard</b>	<10 per 10,000 prevalent screen (1.0 per 1,000) <7.5 per 10,000 incident screen (0.75 per 1,000)

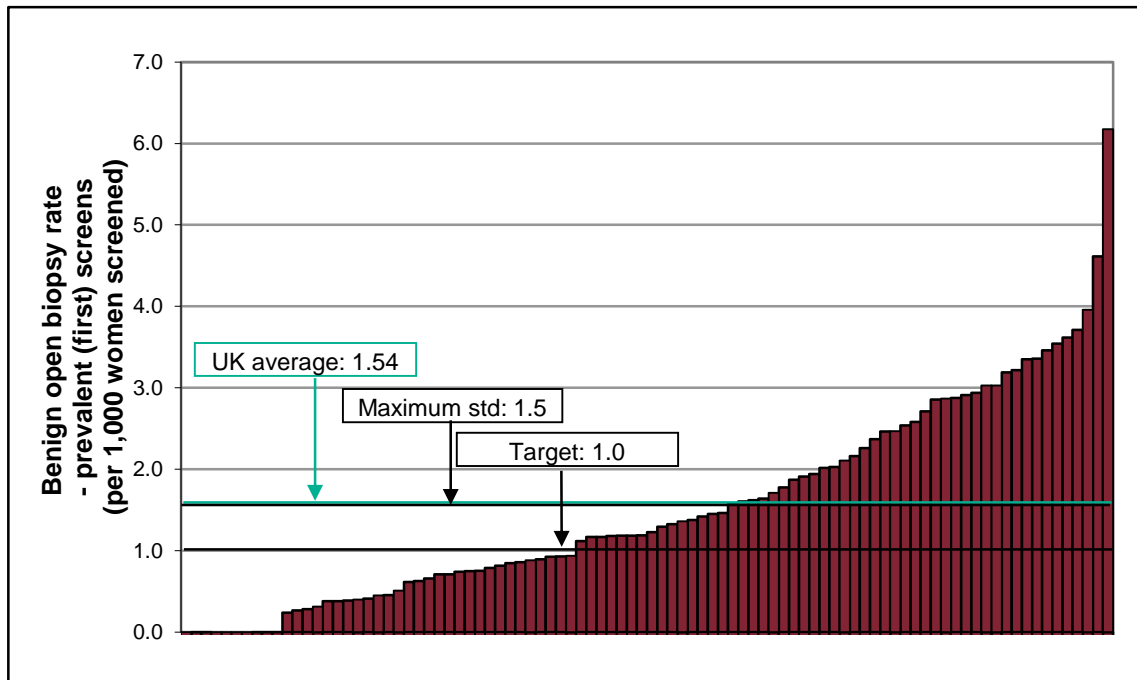
(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, 4<sup>th</sup> Edition, March 2009)

In 2014/15, 1,945 diagnostic open biopsies were performed. Of these:

- 71% were benign
- 29% were malignant

### Benign open biopsies (n=1,374)

- the overall benign biopsy rate has fallen from 1.5 per 1,000 women screened in 1996/97 to 0.6 per 1,000 screened in the current year, reflecting the improvement in non-operative diagnosis
  - 1.54 per 1,000 for prevalent screens
  - 0.38 per 1,000 for incident screens
- for prevalent (first) screens, 39 units achieved the target standard of 1.0 per 1,000 women, and 38 units performed more biopsies than the maximum standard of 1.5 per 1,000 women (Figure 3)



**Figure 3: Variation between screening units in benign diagnostic open biopsy rates for prevalent (first) screens expressed as the number of diagnostic open biopsies undertaken per 1,000 women screened**

- for incident (subsequent screens after the first one) screens, 82 units achieved the target standard of 0.75 per 1,000 women, and 3 units performed more biopsies than the maximum standard of 1.0 per 1,000 women

### **Malignant open biopsies (n=571)**

- the overall malignant open biopsy rate has fallen from 2.04 per 1,000 women screened in 1996/97 to 0.23 per 1,000 in the current year reflecting improved rates of non-operative diagnosis. Of the cases undergoing a malignant open biopsy:
  - 138 were invasive cancers
    - 56 had a suspicious needle biopsy result (either B4 core biopsy or C4 cytology)
    - 74 had an equivocal needle biopsy result (either B3 core biopsy or C3 cytology)
  - 433 were non-invasive/micro-invasive
    - 114 had a suspicious (B4/C4) needle biopsy result
    - 302 had an equivocal (B3/C3) needle biopsy result
  - of 376 cancers which had B3/C3 non-operative results, 94 (25%) had only LCIS in the surgical specimen

## Tumour characteristics

### Non-invasive cancers (n=4,023)

- 3,865 (96%) were Ductal Carcinoma in Situ (DCIS)
- 158 (4%) were Lobular Carcinoma in Situ (LCIS) only at surgery

### Ductal Carcinoma in Situ (n=3,865)

- 3,789 (98%) underwent surgical treatment

#### Size:

- 95% had complete information on size, with 182 cases where size was unknown
- For 12 cases (0.3%) the size was not assessable
- In 167 cases (92%) no evidence of DCIS was found in the surgical specimen
- 36% were less than 15mm in diameter
- 15% were larger than 40mm

#### Grade:

- 99% had complete information on grade
- 60% were high nuclear grade
- 29% were intermediate nuclear grade
- 10% were low nuclear grade

**Ten units had significantly higher and seven units had significantly lower proportions of DCIS with a high nuclear grade than the national average of 60% at 95% confidence level.**

#### Nodal status:

Axillary staging surgery is not routinely recommended for patients having treatment for DCIS alone. It may be considered in patients at high risk of occult invasive disease, for example, cases with micro-invasion on core biopsy and mass lesion on ultrasound.

- 1,000 (26%) of the 3,789 surgically treated cases of DCIS had known nodal status
  - 90% of DCIS treated with mastectomy had known nodal status
  - 7% of DCIS treated with breast conserving surgery had known nodal status
  - 17 had positive nodal status recorded (12 mastectomy, 5 breast conserving surgery)

**Nodal status was known for more than 10% of DCIS treated by breast conserving surgery in 20 units and for more than 20% in three units.**

**Nodal status was known for 100% of cases of DCIS treated by mastectomy in 39 units and for less than 60% in four units.**

One-year high outliers (2014-15) for axillary node surgery performed on non-invasive cancers treated with breast conserving surgery have been identified in KPI S2a - page 26.

Receptor status:

- oestrogen receptor (ER) status was known for 1,351 (35%) of DCIS cases
- the proportion of DCIS with ER status varied widely between units from 0 to 100%
- 83% of the DCIS cases with known ER status were ER positive
- progesterone receptor (PR) status was known for 18% of DCIS cases

### **Lobular Carcinoma in Situ (n=158) only at surgery**

- 91 (58%) had a C3 or B3 non-operative diagnosis
- 51 (32%) had a B5a non-operative diagnosis
- 147 (93%) were treated with breast conserving surgery
- 11 were treated with mastectomy (ten B5a and one B3 on core biopsy)
- 9 cases had two or more operations to the breast.
- 12 cases had axillary operations (ten B5a, one B5c and one B3 on core biopsy)

**This data will be reviewed by the National Co-ordinating Committee of Pathologists in Breast Screening.**

### **Invasive cancer**

- 15,074 surgically treated invasive cancers

Size:

- 8,045 (53%) had an invasive tumour diameter < 15mm
- 283 cases (2%) had an invasive tumour diameter > 50mm
- Whole tumour size was not provided for 258 (2%) cancers

Grade:

- 25% grade 1
- 54% grade 2
- 20% grade 3
- grade was not assessable for 43 (0.3%) cancers and unknown for 42 (0.3%) cancers

**There were 10 units which were 99.7% high or low outliers for invasive cancer grade for 2014/15 and 2012-2015 (Pathology KPI P3- page 23).**

Nodal status:

- 14,928 (99%) had known nodal status (146 cases unknown)
- 21% were node positive (n=3,191)
- rates of node positivity varied from 13% to 42% in individual units



- 1,864 (12%) had one positive node at the first axillary operation
  - 681 (37%) contained micrometastasis
  - 1,043 (56%) contained macrometastasis

**In the three-year period 2012–15, nine units were 95% high outliers and 12 units were 95% low outliers for the proportion of positive nodes compared with the UK average of 21%.**

It is known from previous audit that a number of the high outlier units are served by hospitals known to use molecular methods for nodal assessment, with higher rates of positive nodes containing micrometastases.

The Nottingham Prognostic Index (NPI) may be used to estimate the prognosis of surgically treated invasive breast cancers:

For surgically treated invasive cancers (with no known neoadjuvant therapy) the NPI could be calculated for 14,382 (97%) but is unknown for 360 cases.

- 21% excellent prognostic group (EPG)
- 39% good prognostic group (GPG)
- 35% moderate prognostic group (MPG)
- 5% poor prognostic group (PPG)

**Eight screening units have over 5% of cases with unknown Nottingham Prognostic Index.**

**From 2012–15, five units were 95% high outliers for poor prognosis (PPG) cancers and were also 95% low outliers for excellent/good prognosis (EPG/GPG) cancers.**

Receptor status:

- Of the 15,394 invasive cancers, ER status was unknown for 55 (0.4%)
- Of the 15,339 invasive cancers with known ER status, 91% were ER positive

**No screening units are 99.7% high or low outliers for ER-positive invasive cancer in both 2014/15 and the three-year period 2012–15 (Pathology KPI P1- page 22).**

- progesterone receptor PR status was known for 8,956 (58%) of invasive cancers
  - 76% were positive
- of the 1,370 invasive cancers with negative ER status
  - 81% had known PR status
  - 4% were PR positive
- HER2 status data were available for 99% of invasive cancers (n= 15,190)
- 37 units had complete HER2 status for all their invasive cancers

- of the invasive cancers with known HER2 status, 11% were positive, 89% were negative and 1% were borderline on immunohistochemistry. Borderline cases will usually undergo fluorescence in situ hybridization (FISH) testing. These 1% borderline cases include cases with HER2 test 2+ (borderline) without/awaiting FISH test results and cases which were HER2 FISH test borderline

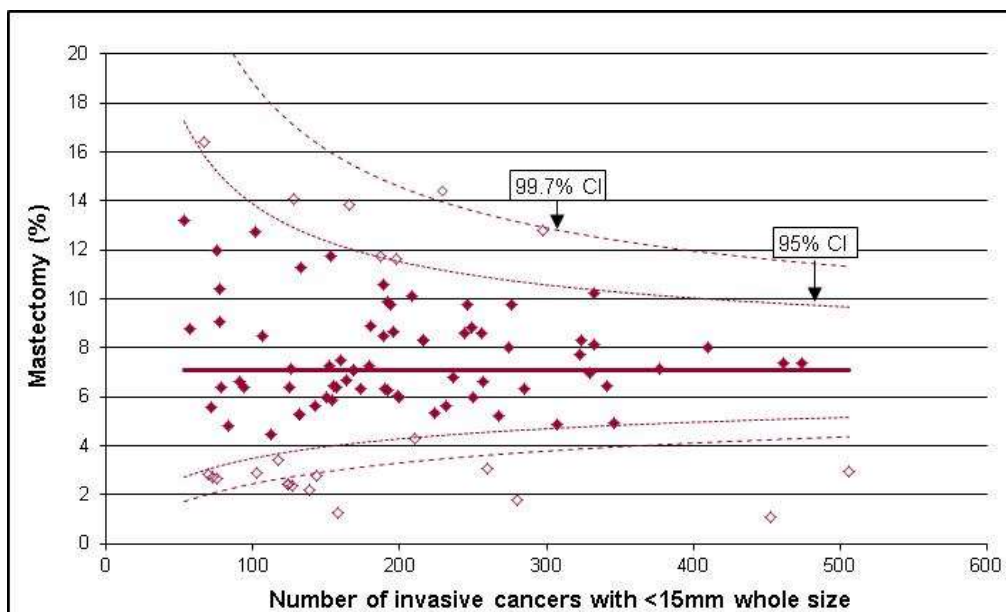
**No screening units are high or low outliers for HER2-positive invasive cancer in both 2014/15 and 2012-15 (Pathology KPI P2- page 22).  
One unit had 33% of cancers with unknown HER2 status.**

# Surgical treatment

## Type of surgery

- 4,023 non-invasive cancers (including LCIS)
  - 3,031 (75%) treated with breast conserving surgery
  - 916 (23%) treated with mastectomy
  - 76 had no surgery recorded within the audit period
  - high outlier units (2014/15) for mastectomy rate for non-invasive cancers have been identified in Surgery KPI S3a – page 28
- 15,394 invasive breast cancers
  - 12,030 (78%) of patients had breast conserving surgery (15 had axillary surgery only)
  - 3,043 (20%) had mastectomy
  - 320 (2%) had no surgery recorded within the audit period (63% neoadjuvant therapy)
- small (<15mm invasive size) invasive cancers
  - the mastectomy rate has remained at 13% in 2014/15
  - 7% of cancers with whole tumour size <15mm were treated with mastectomy (Figure 2)
  - 83% of small invasive (<15mm) cancers, but with whole tumour diameter >50mm due to surrounding non-invasive disease, were treated with mastectomy

The presence of non-invasive disease which extends beyond the invasive lesion appears to account for a proportion of the mastectomies performed on small invasive cancers.



**Figure 2: Screening unit variation in proportion of mastectomies for invasive cancer whole size <15mm**

**From 2012–15, five units had significantly higher mastectomy rates for small <15mm whole size cancers and 15 had significantly lower rates at 95% confidence level.**

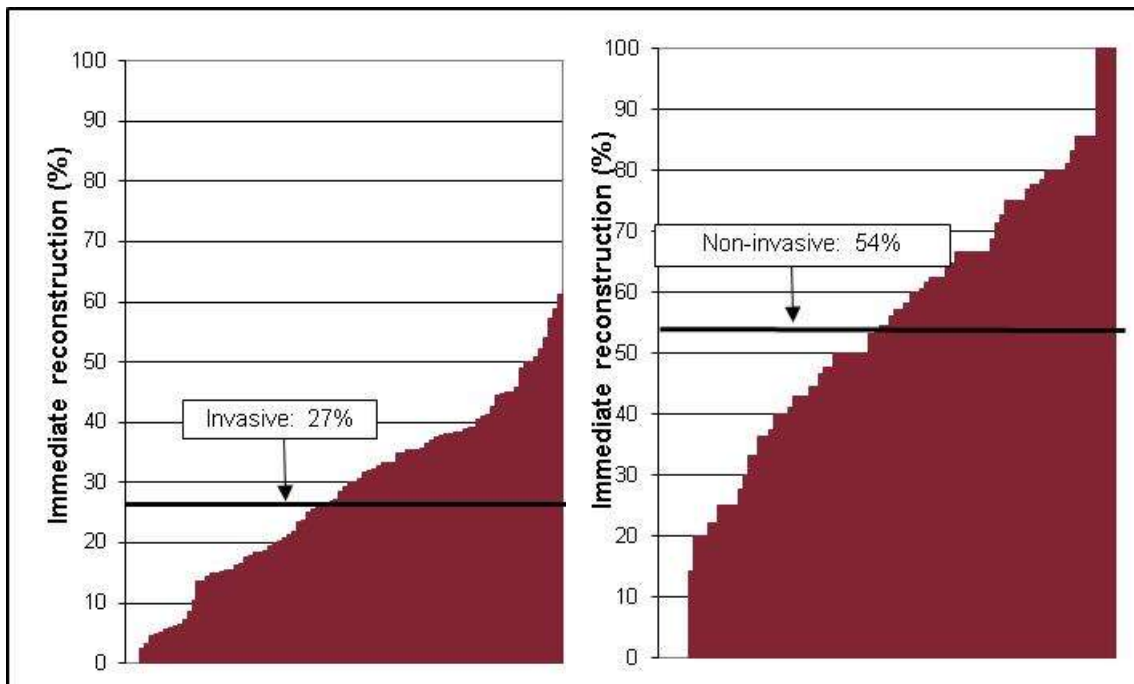
**Immediate breast reconstruction**

- immediate reconstruction was recorded for 34% of cases undergoing mastectomy
- immediate reconstruction rates after mastectomy were twice as great for non-invasive cancers (54%) compared to invasive cancers (27%)

<b>IMMEDIATE RECONSTRUCTION RATES FOR BREAST CANCER PATIENTS TREATED BY MASTECTOMY</b>				
<b>Invasive status</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>
Invasive	23%	24%	24%	27%
Non/micro-invasive	42%	44%	47%	54%
<b>Overall</b>	<b>27%</b>	<b>29%</b>	<b>30%</b>	<b>34%</b>

**Table 2. Rate of mastectomies with immediate reconstruction by invasive status**

- for invasive cancers, breast unit immediate reconstruction rates varied from 0% to 59%
- for non-invasive cancers, breast unit immediate reconstruction rates varied 0 to 100% (Figure 3)



**Figure 3: Variation between screening units in immediate reconstruction rates for invasive (left) and non-invasive cancers (right)**

**From 2012–15, 23 units had significantly higher immediate reconstruction rates for invasive cancers and 25 had significantly lower rates at 95% confidence**

One-year low outlier units for immediate reconstruction rates for non-invasive cancers have been identified in Surgery KPI S3b – see page 29.

**Eleven units were 95% low outliers in 2014/15 for immediate reconstruction rates for non-invasive cancers.**

**Six units who were 95% low outliers for 2014/15 are also three-year 95% low outliers.**

**Three units were both high mastectomy rate and low immediate reconstruction rate 95% one-year outliers for 2014/15.**

### Neo-adjuvant therapy

- 919 women received neo-adjuvant therapy
  - 894 (97%) had invasive breast cancer
  - 23 (3%) had non-invasive breast cancer (predominantly endocrine therapy)
- 63% of 320 women with invasive breast cancer who did not have surgery up to the end of the follow up period had neo-adjuvant therapy recorded
- use of neo-adjuvant endocrine therapy
  - used in 492 (3%) of women
  - 163 (33%) of these women had no surgery in the audit period
  - most frequently used (7%) in older women aged 75 years or more
  - 94% had cancers that were ER and/or PR positive
  - 1 cancer was recorded to be ER and PR negative
- Neo-adjuvant chemotherapy
  - recorded for 447 (3%) of invasive cancers
  - 11 cases had a small invasive size (20mm or less) on ultrasound, were grade 1 and did not have a B5 or C5 lymph node biopsy result.
  - 41 women with invasive cancer were recorded as having received neo-adjuvant trastuzumab
  - 6 women (15%) were recorded as having received neo-adjuvant trastuzumab but had no neo-adjuvant chemotherapy recorded

## Surgical caseload

**Quality Objective** To ensure specialist surgical care

**Outcome Measure** Breast cancer surgery should be performed only by surgeons with a specialist interest in breast disease (defined as at least 30 surgically treated cases per annum [screening and symptomatic]). Each surgeon involved in the NHSBSP should maintain a surgical caseload of at least 10 screen-detected cancers per year averaged over a three-year period

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, 4<sup>th</sup> Edition, March 2009)

- In 2014/15, 624 consultant breast surgeons treated women diagnosed in the NHSBSP
  - 82% of women were treated by a surgeon with a screening caseload of >30 cases
  - 156 surgeons treated fewer than 10 screen-detected cases
    - 27 of these surgeons had a symptomatic caseload of more than 30 cases
    - 29 (19%) either joined or left the NHSBSP during 2014/15
- From 2012–15, 262 surgeons (34%) had an annual average caseload of < 10 cases
  - the highest proportions of surgeons with a screening caseload of fewer than 10 screening cases per year were in London (46%) and Scotland (42%)
  - 41 (16%) of these treated more than 30 symptomatic breast cancers per year
  - 35 (13%) either joined or left the NHSBSP
  - 42 surgeons were plastic surgeons
  - information was unavailable to explain the low caseload of 59 surgeons, treating a total of 188 women

## Repeat operations

- 4,065 (21%) surgically treated breast cancers had more than one operation
- of 551 surgically treated breast cancers **without** a non-operative diagnosis:
  - 261 (47%) had more than one operation
  - 81% of invasive cancers and 36% of non/micro-invasive cancers without a non-operative diagnosis had a repeat operation
  - repeat operations for cancers without a non-operative diagnosis formed only 6% of all repeat operations
  - margin data was not available for Scotland
- of 18,615 surgically treated breast cancers **with** a non-operative diagnosis:
  - 3,804 (20%) had more than one operation
  - 20% of invasive cancers and 24% of non/micro-invasive cancers had more than one operation
  - 53 cancers (0.3%) initially treated by therapeutic breast conserving surgery had more than three therapeutic operations
- 737 invasive cancers had a B5a (non-invasive) core biopsy result:
  - the repeat operation rate was 60%
  - 342 (46%) had the first axillary operation performed at the repeat operation

Repeat operations after breast conserving surgery are the subject of the following KPIs:

- At least 80% of invasive cancers with an involved closest radial margin after breast conserving surgery should have a repeat operation to the breast (KPI S1a – page 24)

**Six units did not achieve KPI S1a in 2014/15.**

**One unit who did not achieve KPI S1a in 2013/2014 is still an outlier in 2014/15.**

**Three units did not achieve KPI S1a for the three-year period 2012–15.**

No more than 5% of invasive cancers with a closest radial margin > 5mm after breast conserving surgery should have a repeat operation to the breast (KPI S1b – page 25)

**Four units did not achieve KPI S1b in 2014/15.**

**One unit who did not achieve KPI S1b in 2013/14 is still an outlier in 2014/15.**

# Axilla

## Non-operative assessment

### Quality Objective

To increase the non-operative diagnosis of axillary node metastases

### Target Standard

All patients diagnosed with invasive breast cancer undergoing surgical treatment should have a pre-operative axillary ultrasound scan, and if appropriate fine needle aspiration (FNA) or core biopsy should be carried out

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, 4<sup>th</sup> Edition, March 2009)

A total of 13,712 cancers in the UK (data excludes Scotland) had a non-operative diagnosis of invasive cancer on core biopsy (B5b):

- 13,515 (99%) had an axillary ultrasound recorded and a B5b non-operative diagnosis
  - 2,321 (17%) had an abnormal ultrasound result
  - 83% had a normal ultrasound result

**All units in England, Wales and Northern Ireland achieved the 85% target for KPI R1a (Scotland did not provide data) (KPI R1a - page 19).**

This is a further improvement from 2013/14 when 97% of invasive cancers had an axillary ultrasound recorded.

- 2,295 (99%) cases with an abnormal axillary ultrasound had a biopsy of an axillary node

**Three units in England had 85% or fewer cancers with an abnormal pre-operative ultrasound having an ultrasound needle biopsy in 2014/15 (KPI R1b - page 19).**

- 961 (6.7%) women with a non-operative diagnosis of the invasive cancer also had a non-operative confirmation of axillary lymph node metastasis
- 1,973 invasive cancers cases had an abnormal axillary ultrasound (excluding neo-adjuvant therapy cases):
  - 1,928 had axillary surgery and 922 had a positive node obtained
  - giving a positive predictive value (probability of being node positive) of an abnormal ultrasound of 48%



- 10,751 invasive cancers cases had a normal axillary ultrasound (excluding neo-adjuvant therapy cases):
  - 10,633 had axillary surgery and 1,748 had a positive node obtained
  - giving a negative predictive value (probability of being node negative) of a normal ultrasound of 84%

## Axillary surgery

<b>Quality Objective</b>	To ensure adequate staging of the axilla in patients with invasive breast cancer
<b>Minimum Standard</b>	>90% of women treated for early invasive cancers should have an axillary staging procedure carried out if metastatic nodal metastasis is not confirmed non-operatively
<b>Target Standard</b>	100% of women treated for early invasive cancers should have an axillary staging procedure carried out if metastatic nodal metastasis is not confirmed non-operatively

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, 4<sup>th</sup> Edition, March 2009)

- In 2014/15 in the UK, of the 15,074 surgically treated invasive cancers:
  - 14,942 (99%) had an axillary operation
  - 14,928 (99%) had known nodal status
    - 146 cases had unknown nodal status
    - 16 cases had an axillary operation but the nodal status is unknown
      - 13 cases: No nodes harvested; 3 cases: Unknown number
    - 75 cases had < 4 nodes obtained from sampling or clearance without sentinel lymph node biopsy (SLNB)
- Of the 14,928 invasive cancers with known nodal status:
  - 3,191 (21%) were node positive
  - 706 (4%) were known to only have micro-metastases

<b>Quality Objective</b>	To minimise morbidity from axillary surgery to obtain staging information
<b>Outcome Measure</b>	Sentinel node biopsy using the combined blue dye/radioisotope technique is a recommended axillary staging procedure for the majority of patients with early invasive breast cancer

(Quality Assurance Guidelines for Surgeons in Breast Cancer Screening, NHSBSP Publication No 20, 4<sup>th</sup> Edition, March 2009)

- 13,374 (90%) had sentinel lymph node biopsy (SLNB):
  - Median number of nodes taken: 2 nodes
  - 2,146 (16%) were node positive

- 87% used isotope and blue dye
- 6% used isotope only
- 7% used blue dye only
  
- 1,568 (10%) had sampling or clearance without SLNB:
  - Median number of nodes taken: 12 nodes
  - 1,045 (67%) were node positive
  
- Of the 14,928 **invasive cancers** with known nodal status:
  - 14,017 (94%) had one axillary operation
    - 251 had a SLNB and sampling at the same operation (data excludes Scotland)
    - 315 had a SLNB and clearance at the same operation (data excludes Scotland)
  
  - 909 (6%) had two or more axillary operations
    - 97% had positive nodes at the first axillary operation (data excludes Scotland)
  
  - 35 cases had no nodes harvested at the first axillary operation
    - 11 had a repeat axillary operation
  
- Of the 11,337 surgically treated invasive cancers without neo-adjuvant therapy:
  - 516 (4%) of node negative invasive cancers had more than five nodes examined

**Five units were 95% high outliers for KPI S2a in 2014/15.**

**One unit was a 99.7% high outlier for KPI S2a in 2014/15.**

**Four units who did not achieve for KPI S2a in 2013/14 are still outliers in 2014/15.**

**Five units are 99.7% high outliers for KPI S2a for the three year period 2012–15 (KPI S2a – page 26).**

- Of the 145 surgically treated **micro-invasive cancers**:
  - 93 (64%) had known nodal status
    - 84% treated with mastectomy had known nodal status
    - 47% treated with breast conserving surgery had known nodal status
  
- Of the 3,947 surgically treated **non-invasive cancers**:
  - 1,012 (26%) had known nodal status
    - 90% treated with mastectomy had known nodal status
    - 6% treated with breast conserving surgery had known nodal status
    - 17 had positive nodal status recorded
  
  - 955 (24%) had sentinel lymph node biopsy:
    - 84% of those treated with a mastectomy had SLNB

- 13 cases had mastectomy and axillary clearance
- Of the 3,030 non-invasive cancers treated with breast conserving surgery:
  - 86 (6%) had axillary operations

**Two units were 95% high outliers for KPI S2b in 2014/15, but not in the previous year (2013/14).**

**Both units were three year 99.7% high outliers in 2012–15 (KPI S2b – page 27).**

## Adjuvant therapy

The adjuvant audit, comprising an assessment of the use of radiotherapy, chemotherapy and endocrine therapy, has relied in previous years on manual completion for data acquisition, although cancer registry data has been used on occasions to fill some gaps. For the 2013/14 it was decided that the adjuvant data needed would be acquired solely from the Cancer Analysis System (CAS).

Although there has always been a proportion of 'unknowns' in the data fields, the use of CAS data has resulted in a significant increase in the 'unknown' category. The table below compares data acquired from Screening Quality Assurance Service (SQAS), the previous data source in 2012/13 and that obtained from CAS for the year 2013/14.

Adjuvant audit data completeness		
	% unknown in SQAS (2012/13) [sub-regional variation]	% unknown in CAS (2013/14) [sub-regional variation]
Radiotherapy	5 [0-12]	24 [23-31]
Chemotherapy	13 [0-35]	67 [65-79]
Endocrine therapy	12 [1-26]	24 [23-31]

**Table 3: Data completeness for the adjuvant therapy audit**

There has been a significant decrease in the level of data completeness across all adjuvant therapies but particularly in systemic therapies.

Data concerning the use of radiotherapy are more complete particularly following breast conserving surgery for invasive disease (5% nationally, sub-regional variation 2-11%), which was one of the planned oncology key performance indicators (O1). The levels of data incompleteness do not permit any form of adjuvant audit for the year 2013/14.

We are exploring possible ways of improving the use of CAS and the PHE-held datasets to obtain more useful results in subsequent years.

## Survival

Of the 16,950 women with breast cancer submitted to the survival audit for the period 1 April 2009 to 31 March 2010, 16,272 (96%) were eligible for inclusion in the analyses.

Deaths were recorded for 832 (6%) women with invasive breast cancer (up to 31 March 2015) of these:

- 49% were due to breast cancer
- 22% due to another type of cancer
- 25% to non-cancer related causes
- 4% had an unknown cause

Invasive cancers (n=13,082)

- five-year relative survival is 98.7%
- the South West has a statistically significantly higher survival rate than the UK average
- no sub-regions have statistically significantly lower survival rates than the UK average
- the unit level five-year relative survival for women with invasive cancers screened in 2008/09 and 2009/10 varied from 91.3 in a unit in North East Yorkshire & Humber to 102.4% in a unit in South Central

**For eight units, five-year relative survival rates are statistically significantly lower than the national average of 98.6%.**

**Three units have five-year relative survival rates significantly higher than the national average.**

- Five-year relative survival varied with invasive tumour characteristics:
  - size: 100.6% for <15mm diameter cancers compared to 86.3% for cancers >50mm
  - grade: 100.8% for grade 1 cancers compared to 94.1% for grade 3 cancers
  - nodal status: 100.3% for node negative compared to 94.8% for node positive cancers
  - Nottingham Prognostic Index: For cancers in the excellent and good prognostic groups (101.1% and 101.3%), five-year relative survival was significantly better than that for moderate (groups 1 and 2) and poor prognostic group cancers (99.4%, 95.5% and 85.5%, respectively)

# Appendix 1

## Organisation of the audit

The format of the audit was designed by the UK NHSBSP & ABS Screening Audit Group.

### Organisation of data collection

The audit includes:

- the main audit: women that were offered a screening appointment in the period 1 April 2014 to 31 March 2015, followed up until November 2015
- the adjuvant therapy audit: women that were offered a screening appointment in the period 1 April 2013 to 31 March 2014, followed up until March 2015
- the survival audit: women screened during the period 1 April 2009 to 31 March 2010, followed up until March 2015

The responsibility for English regional and Celtic country data collection for the main audit was devolved to Screening QA Services (SQAS). Data for the adjuvant and survival audit are obtained from the Cancer Analysis System within Public Health England (PHE). The format of the audits was designed by the UK NHSBSP & ABS Screening Audit Group and was subject to comment from surgery, radiology and pathology Professional and Clinical Advisors (PCAs) and Senior QA advisors in order to ensure that, as far as possible, ambiguities were eliminated. Guidance notes and data collection forms can be requested from [phe.nhsbspabs@nhs.net](mailto:phe.nhsbspabs@nhs.net). Data analyses were carried out by audit staff within SQAS. Control charts with Wilson-score control limits are used in this audit report to demonstrate the differences in proportions between screening units. For the survival audit, cumulative relative survival probabilities for women in the general UK population were calculated using the Ederer II method with probability of life tables supplied by the Government's Actuary Department.

### Unit level data

Data for 92 screening units were included in the 2014/15 NHSBSP & ABS Breast Screening Audit. No data were received for the West of Scotland Breast Screening Service.

### Responsibility for data collection

NHSBSP & ABS Breast Screening Audit information packs were sent to SQAS staff in QA offices in England, and to breast screening information centres in Northern Ireland, Scotland and Wales. In each English sub-region and Celtic country, SQAS staff and PCAs and their Celtic country equivalents were responsible for ensuring that

data were collected from their breast screening units. Lead surgeons in each breast unit were responsible for making sure that the data were available and complete, and were asked to give confirmation to their Senior QA Advisor that the data for their unit were a fair representation of screening activity in the audit period (ie, to 'sign off' the data). SQAS staff were given the responsibility of ensuring that all the data were signed off before submission. The identification of individuals with responsibility for ensuring that data are gathered and are a true reflection of clinical work is intended to clarify ownership of the information required for the audit. Ownership of the information is essential if a need for change is highlighted and change implemented. Data were submitted to the West Midlands SQAS Office for collation and evaluation.

### Data evaluation

The West Midlands SQAS Office, guided by the NHSBSP & ABS Screening Audit Group, collated national data. Extensive validation checks were used to ensure that the data were an accurate reflection of clinical activity in the UK NHSBSP. Commentary and recommendations were made by the NHSBSP & ABS Screening Audit Group.

### Publication of audit data

The NHSBSP & ABS 2014/15 Breast Screening Audit is published for the first time in electronic format (pdf) only and will be available to delegates at the Association of Breast Surgery Annual Conference on 16 May 2016. Once published, the booklet will be available to download from the Association of Breast Surgery website:

[www.associationofbreastsurgery.org.uk](http://www.associationofbreastsurgery.org.uk).

### Referencing this document

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## Appendix 2: Main audit data tables

**DATA FROM THE 2014/15 AUDIT OF SCREEN-DETECTED BREAST CANCERS IN WOMEN ALL AGES FOR THE PERIOD 1 APRIL 2014 – 31 MARCH 2015**

Sub-region	Invasive		Invasive (<15mm)		Micro-invasive		Non-invasive		Status unknown		Total		Total women screened	Micro/Non-invasive cancer rate	Invasive cancer rate	Invasive <15mm rate
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
East Midlands	1254	79	676	43	11	1	313	20	0	0	1578	100	191007	1.7	6.6	3.5
East of England	1558	80	835	43	17	1	372	19	1	0	1948	100	236343	1.6	6.6	3.5
London	1630	77	727	34	9	0	487	23	1	0	2127	100	248877	2.0	6.5	2.9
N East, Yorks & Humber	2154	80	1175	44	19	1	521	19	1	0	2695	100	365397	1.5	5.9	3.2
North West	1825	78	929	40	19	1	506	22	0	0	2350	100	255334	2.1	7.1	3.6
South Central	1290	77	648	39	10	1	366	22	0	0	1666	100	180771	2.1	7.1	3.6
South East Coast	1358	78	691	40	14	1	373	21	0	0	1745	100	193910	2.0	7.0	3.6
South West	1583	79	838	42	26	1	401	20	1	0	2011	100	236067	1.8	6.7	3.5
West Midlands	1467	77	739	39	12	1	419	22	0	0	1898	100	221627	1.9	6.6	3.3
Northern Ireland	348	87	191	48	3	1	49	12	0	0	400	100	61396	0.8	5.7	3.1
Scotland	810	82	471	48	4	0	173	18	0	0	987	100	110701	1.6	7.3	4.3
Wales	954	79	515	43	8	1	246	20	0	0	1208	100	113365	2.2	8.4	4.5
<b>United Kingdom</b>	<b>16231</b>	<b>79</b>	<b>8435</b>	<b>41</b>	<b>152</b>	<b>1</b>	<b>4226</b>	<b>21</b>	<b>4</b>	<b>0</b>	<b>20613</b>	<b>100</b>	<b>2414795</b>	<b>1.8</b>	<b>6.7</b>	<b>3.5</b>

Sub-region	<50		50-64		65-70		71-75		76+		Total	>70	
	No.	%	No.	%	No.	%	No.	%	No.	%		No.	%
East Midlands	108	7	792	50	478	30	136	9	64	4	1578	207	13
East of England	163	8	984	51	574	29	139	7	88	5	1948	227	12
London	127	6	1295	61	517	24	126	6	62	3	2127	188	9
N East, Yorks & Humber	149	6	1516	56	762	28	187	7	81	3	2695	268	10
North West	156	7	1280	54	676	29	175	7	63	3	2350	238	10
South Central	105	6	889	53	457	27	135	8	80	5	1666	208	13
South East Coast	103	6	932	53	511	29	127	7	72	4	1745	199	11
South West	124	6	1102	55	542	27	173	9	70	3	2011	243	12
West Midlands	121	6	1013	53	563	30	141	7	60	3	1898	201	11
Northern Ireland	8	2	257	64	118	30	15	4	2	1	400	17	4
Scotland	0	0	548	56	331	34	53	5	55	6	987	108	11
Wales	18	1	697	58	372	31	66	5	55	5	1208	121	10
<b>United Kingdom</b>	<b>1182</b>	<b>6</b>	<b>11305</b>	<b>55</b>	<b>5901</b>	<b>29</b>	<b>1473</b>	<b>7</b>	<b>752</b>	<b>4</b>	<b>20613</b>	<b>2225</b>	<b>11</b>



Sub-region	Total cancers including radiological/clinical cancers	Cancers diagnosed on radiological/clinical grounds only	
		No.	%
East Midlands	1578	0	0.00
East of England	1948	0	0.00
London	2127	0	0.00
N East, Yorks & Humber	2695	0	0.00
North West	2350	0	0.00
South Central	1666	0	0.00
South East Coast	1745	1	0.06
South West	2011	0	0.00
West Midlands	1898	0	0.00
Northern Ireland	400	5	1.25
Scotland	987	0	0.00
Wales	1208	0	0.00
<b>United Kingdom</b>	<b>20613</b>	<b>6</b>	<b>0.03</b>

Sub-region	Total cases	Total pt matched	% matched	Had previous cancers		No previous cancers	
				No.	%	No.	%
East Midlands	1578	1578	100	143	9	1435	91
East of England	1948	1946	100	236	12	1710	88
London	2127	2111	99	231	11	1880	89
NEYH	2695	2695	100	347	13	2348	87
North West	2350	2349	100	211	9	2138	91
South Central	1666	1666	100	166	10	1500	90
South East	1745	1740	100	254	15	1486	85
South West	2011	2011	100	202	10	1809	90
West Midlands	1898	1897	100	240	13	1657	87
Northern Ireland	400	381	95	27	7	354	93
Scotland	987	797	81	144	18	653	82
WALES	1208	1197	99	162	14	1035	86
<b>United Kingdom</b>	<b>20613</b>	<b>20368</b>	<b>99</b>	<b>2363</b>	<b>12</b>	<b>18005</b>	<b>88</b>

Sub-region	Total matched	Total previous cancers	Invasive/micro-invasive					Non-invasive	
			Breast	Gynaecological	Bowel	Haematological	Other	Breast	Other
East Midlands	1578	143	56	21	5	5	24	8	33
East of England	1946	236	101	15	11	8	31	28	60
London	2111	231	88	24	10	13	35	15	59
NEYH	2695	347	122	31	19	14	45	29	105
North West	2349	211	66	25	16	10	25	24	58
South Central	1666	166	50	18	14	3	24	17	44
South East	1740	254	99	24	12	13	33	29	67
South West	2011	202	71	19	19	9	24	16	59
West Midlands	1897	240	98	33	11	12	23	12	71
Northern Ireland	381	27	16	3	0	3	5	0	0
Scotland	797	144	39	9	8	7	13	9	69
WALES	1197	162	56	20	11	3	20	10	52
<b>United Kingdom</b>	<b>20368</b>	<b>2363</b>	<b>936</b>	<b>324</b>	<b>143</b>	<b>108</b>	<b>315</b>	<b>230</b>	<b>725</b>
<b>% of previous cancers</b>	-	100	40	14	6	5	13	10	31
<b>% of matched</b>	100	12	5	2	1	1	2	1	4

**Table 6: Non-operative diagnosis rate**

Sub-region	Total cancers	C5 only		C5 & B5		B5 only		Positive axillary biopsy only		Non-operative diagnosis		No non-operative diagnosis	
		No	%	No	%	No	%	No	%	No	%	No	%
		East Midlands	1514	0	0	7	0	1461	96	2	0	1470	97
East of England	1823	1	0	7	0	1758	96	2	0	1768	97	55	3
London	2024	0	0	14	1	1945	96	1	0	1960	97	64	3
N East, Yorks & Humber	2546	4	0	139	5	2366	93	3	0	2512	99	34	1
North West	2260	1	0	23	1	2189	97	2	0	2215	98	45	2
South Central	1599	0	0	7	0	1528	96	1	0	1536	96	63	4
South East Coast	1619	0	0	4	0	1541	95	0	0	1545	95	74	5
South West	1925	4	0	7	0	1847	96	0	0	1858	97	67	3
West Midlands	1789	0	0	0	0	1736	97	2	0	1738	97	51	3
Northern Ireland	384	3	1	191	50	182	47	0	0	376	98	8	2
Scotland	940	1	0	2	0	917	98	0	0	920	98	20	2
Wales	1142	0	0	3	0	1113	97	0	0	1116	98	26	2
<b>United Kingdom</b>	<b>19565</b>	<b>14</b>	<b>0</b>	<b>404</b>	<b>2</b>	<b>18583</b>	<b>95</b>	<b>13</b>	<b>0</b>	<b>19014</b>	<b>97</b>	<b>551</b>	<b>3</b>

**Table 7: Non-operative diagnosis rate (invasive cancers)**

Sub-region	Total cancers	C5 only		C5 & B5		B5 only		Positive axillary biopsy only		Non-operative diagnosis		No non-operative diagnosis	
		No	%	No	%	No	%	No	%	No	%	No	%
		East Midlands	1200	0	0	7	1	1183	99	2	0	1192	99
East of England	1459	1	0	7	0	1435	98	2	0	1445	99	14	1
London	1548	0	0	12	1	1514	98	1	0	1527	99	21	1
N East, Yorks & Humber	2032	4	0	134	7	1880	93	3	0	2021	99	11	1
North West	1752	0	0	21	1	1718	98	2	0	1741	99	11	1
South Central	1236	0	0	6	0	1212	98	1	0	1219	99	17	1
South East Coast	1262	0	0	4	0	1243	98	0	0	1247	99	15	1
South West	1512	3	0	6	0	1487	98	0	0	1496	99	16	1
West Midlands	1384	0	0	0	0	1373	99	2	0	1375	99	9	1
Northern Ireland	334	3	1	190	57	140	42	0	0	333	100	1	0
Scotland	769	1	0	2	0	761	99	0	0	764	99	5	1
Wales	906	0	0	3	0	896	99	0	0	899	99	7	1
<b>United Kingdom</b>	<b>15394</b>	<b>12</b>	<b>0</b>	<b>392</b>	<b>3</b>	<b>14842</b>	<b>96</b>	<b>13</b>	<b>0</b>	<b>15259</b>	<b>99</b>	<b>135</b>	<b>1</b>

**Table 8: Non-operative diagnosis rate (non-invasive cancers)**

Sub-region	Total cancers	C5 only		C5 & B5		B5 only		Non-operative diagnosis		No non-operative diagnosis	
		No.	%	No.	%	No.	%	No.	%	No.	%
		East Midlands	303	0	0	0	0	268	88	268	88
East of England	346	0	0	0	0	305	88	305	88	41	12
London	467	0	0	2	0	423	91	425	91	42	9
N East, Yorks & Humber	495	0	0	5	1	467	94	472	95	23	5
North West	490	1	0	2	0	453	92	456	93	34	7
South Central	355	0	0	1	0	309	87	310	87	45	13
South East Coast	343	0	0	0	0	287	84	287	84	56	16
South West	388	0	0	1	0	337	87	338	87	50	13
West Midlands	393	0	0	0	0	351	89	351	89	42	11
Northern Ireland	47	0	0	1	2	39	83	40	85	7	15
Scotland	167	0	0	0	0	152	91	152	91	15	9
Wales	229	0	0	0	0	210	92	210	92	19	8
<b>United Kingdom</b>	<b>4023</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>3601</b>	<b>90</b>	<b>3614</b>	<b>90</b>	<b>409</b>	<b>10</b>

**Table 9: Invasive status of the diagnostic core biopsy**

Sub-region	Total Cancers with B5	B5a (Non-invasive)		B5b (Invasive)		B5c (Micro-invasive, Not Assessable or Unknown)	
		No.	%	No.	%	No.	%
East Midlands	1468	328	22	1128	77	12	1
East of England	1765	383	22	1366	77	16	1
London	1959	509	26	1437	73	13	1
N East, Yorks & Humber	2505	589	24	1900	76	16	1
North West	2212	544	25	1656	75	12	1
South Central	1535	376	24	1155	75	4	0
South East Coast	1545	357	23	1185	77	3	0
South West	1854	421	23	1424	77	9	0
West Midlands	1736	416	24	1294	75	26	1
Northern Ireland	373	55	15	317	85	1	0
Scotland	919	186	20	729	79	4	0
Wales	1116	266	24	850	76	0	0
<b>United Kingdom</b>	<b>18987</b>	<b>4430</b>	<b>23</b>	<b>14441</b>	<b>76</b>	<b>116</b>	<b>1</b>

**Table 10: B5a (Non-invasive) core biopsy: histological status of surgical specimen**

Sub-region	Invasive		Micro-invasive		Non-invasive		No residual tumour		Unknown		Total with surgery	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	54	17	9	3	256	78	8	2	0	0	327	100
East of England	70	19	15	4	272	72	19	5	0	0	376	100
London	82	17	7	1	369	75	36	7	1	0	495	100
N East, Yorks & Humber	108	19	19	3	428	74	23	4	0	0	578	100
North West	77	14	18	3	420	78	21	4	0	0	536	100
South Central	60	16	7	2	288	78	15	4	0	0	370	100
South East Coast	59	17	11	3	276	79	5	1	0	0	351	100
South West	66	16	20	5	311	75	18	4	0	0	415	100
West Midlands	66	16	10	2	320	78	14	3	1	0	411	100
Northern Ireland	12	22	3	6	37	69	2	4	0	0	54	100
Scotland	33	18	2	1	146	80	2	1	0	0	183	100
Wales	49	19	7	3	196	76	6	2	0	0	258	100
<b>United Kingdom</b>	<b>736</b>	<b>17</b>	<b>128</b>	<b>3</b>	<b>3319</b>	<b>76</b>	<b>169</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>4354</b>	<b>100</b>

No residual cases have non-invasive disease reported in the non-operative core biopsy but no malignant disease found in the surgical specimen

**Table 11: B5b (Invasive) core biopsy: histological status of surgical specimen**

Sub-region	Invasive		Micro-invasive		Non-invasive		No residual tumour		Unknown		Total with surgery	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	1086	98	3	0	6	1	13	1	0	0	1108	100
East of England	1297	97	1	0	20	1	17	1	0	0	1335	100
London	1331	97	3	0	15	1	18	1	2	0	1369	100
N East, Yorks & Humber	1832	98	3	0	13	1	14	1	0	0	1862	100
North West	1585	98	2	0	18	1	20	1	0	0	1625	100
South Central	1112	98	2	0	9	1	9	1	0	0	1132	100
South East Coast	1144	98	0	0	12	1	11	1	0	0	1167	100
South West	1368	98	1	0	15	1	11	1	0	0	1395	100
West Midlands	1237	97	6	0	13	1	13	1	1	0	1270	100
Northern Ireland	307	97	0	0	7	2	1	0	0	0	315	100
Scotland	701	99	0	0	7	1	2	0	0	0	710	100
Wales	816	98	0	0	10	1	9	1	0	0	835	100
<b>United Kingdom</b>	<b>13816</b>	<b>98</b>	<b>21</b>	<b>0</b>	<b>145</b>	<b>1</b>	<b>138</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>14123</b>	<b>100</b>

No residual cases have invasive disease reported in the non-operative core biopsy but no malignant disease found in the surgical specimen

Sub-region	0		1		2		3+		Unknown		Total		Repeat (2+) visit	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
East Midlands	0	0	1280	85	207	14	27	2	0	0	1514	100	234	15
East of England	0	0	1674	92	141	8	8	0	0	0	1823	100	149	8
London	0	0	1716	85	285	14	23	1	0	0	2024	100	308	15
N East, Yorks & Humber	0	0	2215	87	302	12	29	1	0	0	2546	100	331	13
North West	0	0	1892	84	309	14	59	3	0	0	2260	100	368	16
South Central	0	0	1378	86	207	13	14	1	0	0	1599	100	221	14
South East Coast	0	0	1360	84	250	15	9	1	0	0	1619	100	259	16
South West	0	0	1598	83	287	15	40	2	0	0	1925	100	327	17
West Midlands	0	0	1475	82	286	16	28	2	0	0	1789	100	314	18
Northern Ireland	0	0	357	93	26	7	1	0	0	0	384	100	27	7
Scotland	0	0	908	97	30	3	2	0	0	0	940	100	32	3
Wales	0	0	1041	91	96	8	5	0	0	0	1142	100	101	9
<b>United Kingdom</b>	<b>0</b>	<b>0</b>	<b>16894</b>	<b>86</b>	<b>2426</b>	<b>12</b>	<b>245</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>19565</b>	<b>100</b>	<b>2671</b>	<b>14</b>

Sub-region	1		2		3+		Total		First core/cyt at 2+ visit	
	No	%	No	%	No	%	No	%	No	%
East Midlands	1456	96	58	4	0	0	1514	100	58	4
East of England	1790	98	31	2	0	0	1821	100	31	2
London	1938	96	82	4	1	0	2021	100	83	4
N East, Yorks & Humber	2505	99	36	1	1	0	2542	100	37	1
North West	2168	96	90	4	1	0	2259	100	91	4
South Central	1552	97	45	3	1	0	1598	100	46	3
South East Coast	1524	94	95	6	0	0	1619	100	95	6
South West	1817	94	108	6	0	0	1925	100	108	6
West Midlands	1748	98	37	2	2	0	1787	100	39	2
Northern Ireland	376	98	7	2	0	0	383	100	7	2
Scotland	-	-	-	-	-	-	-	-	-	-
Wales	1124	98	18	2	0	0	1142	100	18	2
<b>United Kingdom</b>	<b>17998</b>	<b>97</b>	<b>607</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>18611</b>	<b>100</b>	<b>613</b>	<b>3</b>

\*Excluded cases from Scotland

Sub-region	Invasive					Non-Invasive					Overall				
	1		2+		Total	1		2+		Total	1		2+		Total
	No	%	No	%		No	%	No	%		No	%	No	%	
East Midlands	1141	96	49	4	1190	222	83	46	17	268	1373	94	95	6	1468
East of England	1403	97	40	3	1443	273	90	32	10	305	1693	96	73	4	1766
London	1453	95	73	5	1526	374	88	51	12	425	1834	94	125	6	1959
N East, Yorks & Humber	1924	95	94	5	2018	397	84	75	16	472	2338	93	171	7	2509
North West	1629	94	110	6	1739	399	88	57	13	456	2045	92	168	8	2213
South Central	1162	95	56	5	1218	260	84	50	16	310	1427	93	108	7	1535
South East Coast	1204	97	43	3	1247	245	85	42	15	287	1459	94	86	6	1545
South West	1403	94	93	6	1496	279	83	59	17	338	1702	92	156	8	1858
West Midlands	1272	93	101	7	1373	285	81	66	19	351	1565	90	171	10	1736
Northern Ireland	317	95	16	5	333	38	95	2	5	40	358	95	18	5	376
Scotland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wales	855	95	44	5	899	188	90	22	10	210	1050	94	66	6	1116
<b>United Kingdom</b>	<b>13672</b>	<b>95</b>	<b>675</b>	<b>5</b>	<b>14347</b>	<b>2924</b>	<b>86</b>	<b>480</b>	<b>14</b>	<b>3404</b>	<b>16714</b>	<b>93</b>	<b>1171</b>	<b>7</b>	<b>17885</b>

\*Excluded cases from Scotland

**Table 15: Worst core/cytology biopsy results of the first non-operative needle biopsy visit for non-invasive cancers with a non-operative diagnosis**

Sub-region	C5, B5 or both		C4, B4 or both		C3, B3 or both		C2, B2 or both		C1, B1 or both		Total
	No	%	No	%	No	%	No	%	No	%	
East Midlands	231	86	14	5	15	6	5	2	3	1	268
East of England	283	93	6	2	11	4	3	1	2	1	305
London	399	94	5	1	14	3	2	0	5	1	425
N East, Yorks & Humber	422	89	13	3	29	6	3	1	5	1	472
North West	423	93	8	2	14	3	4	1	7	2	456
South Central	280	90	9	3	13	4	5	2	3	1	310
South East Coast	257	90	10	3	10	3	5	2	5	2	287
South West	308	91	13	4	11	3	1	0	5	1	338
West Midlands	317	90	14	4	12	3	2	1	6	2	351
Northern Ireland	39	98	0	0	0	0	0	0	1	3	40
Scotland	-	-	-	-	-	-	-	-	-	-	-
Wales	198	94	3	1	4	2	1	0	4	2	210
<b>United Kingdom</b>	<b>3157</b>	<b>91</b>	<b>95</b>	<b>3</b>	<b>133</b>	<b>4</b>	<b>31</b>	<b>1</b>	<b>46</b>	<b>1</b>	<b>3462</b>

\*Excluded cases from Scotland

**Table 16: Any further visits after core/cytology biopsy result**

Sub-region	Invasive					Non-Invasive					Overall				
	Further visit		No further visit		Total	Further visit		No further visit		Total	Further visit		No further visit		Total
	No	%	No	%		No	%	No	%		No	%	No	%	
East Midlands	66	6	1134	95	1200	14	5	289	95	303	80	5	1434	95	1514
East of England	26	2	1431	98	1457	5	1	341	99	346	31	2	1790	98	1821
London	65	4	1480	96	1545	30	6	437	94	467	96	5	1925	95	2021
N East, Yorks & Humber	95	5	1934	95	2029	20	4	474	96	494	116	5	2426	95	2542
North West	104	6	1647	94	1751	20	4	470	96	490	124	5	2135	95	2259
South Central	44	4	1191	96	1235	10	3	345	97	355	54	3	1544	97	1598
South East Coast	52	4	1210	96	1262	11	3	332	97	343	64	4	1555	96	1619
South West	48	3	1464	97	1512	11	3	377	97	388	60	3	1865	97	1925
West Midlands	62	4	1320	96	1382	27	7	366	93	393	89	5	1698	95	1787
Northern Ireland	0	0	334	100	334	1	2	45	98	46	1	0	382	100	383
Scotland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wales	10	1	896	99	906	0	0	229	100	229	10	1	1132	99	1142
<b>United Kingdom</b>	<b>580</b>	<b>4</b>	<b>13896</b>	<b>96</b>	<b>14476</b>	<b>162</b>	<b>4</b>	<b>3630</b>	<b>96</b>	<b>3792</b>	<b>747</b>	<b>4</b>	<b>17662</b>	<b>96</b>	<b>18409</b>

\*Excluded cases from Scotland

**Table 17: Status of diagnostic open biopsies**

Sub-region	Benign biopsy rate		Malignant biopsy rate
	Prevalent	Incident	
East Midlands	0.62	0.17	0.12
East of England	1.15	0.27	0.29
London	1.46	0.30	0.27
N East, Yorks & Humber	1.60	0.40	0.14
North West	2.30	0.68	0.23
South Central	2.13	0.45	0.35
South East Coast	1.79	0.52	0.37
South West	1.62	0.31	0.30
West Midlands	1.14	0.33	0.20
Northern Ireland	3.27	0.58	0.07
Scotland	1.39	0.23	0.33
Wales	1.41	0.51	0.23
<b>United Kingdom</b>	<b>1.54</b>	<b>0.38</b>	<b>0.23</b>

Sub-region	False positive C5 (CQA Report)		False positive B5 (BQA Report)	
	No.	Per 100,000 screened	No.	Per 100,000 screened
East Midlands	0	0.00	0	0.00
East of England	0	0.00	0	0.00
London	0	0.00	0	0.00
N East, Yorks & Humber	0	0.00	0	0.00
North West	0	0.00	0	0.00
South Central	0	0.00	0	0.00
South East Coast	0	0.00	0	0.00
South West	0	0.00	0	0.00
West Midlands	0	0.00	0	0.00
Northern Ireland	0	0.00	1	0.89
Scotland	0	0.00	0	0.00
Wales	0	0.00	0	0.00
<b>United Kingdom</b>	<b>0</b>	<b>0.00</b>	<b>1</b>	<b>0.04</b>

Sub-region	Total malignant open biopsies	Invasive		Micro-invasive		Non-invasive		Status unknown	
		No.	%	No.	%	No.	%	No.	%
East Midlands	44	8	18	1	2	35	80	0	0
East of England	55	14	25	0	0	41	75	0	0
London	64	21	33	1	2	42	66	0	0
N East, Yorks & Humber	34	11	32	0	0	23	68	0	0
North West	45	11	24	0	0	34	76	0	0
South Central	63	17	27	1	2	45	71	0	0
South East Coast	74	15	20	3	4	56	76	0	0
South West	67	16	24	1	1	50	75	0	0
West Midlands	51	9	18	0	0	42	82	0	0
Northern Ireland	8	1	13	0	0	7	88	0	0
Scotland	20	5	25	0	0	15	75	0	0
Wales	26	7	27	0	0	19	73	0	0
<b>United Kingdom</b>	<b>551</b>	<b>135</b>	<b>25</b>	<b>7</b>	<b>1</b>	<b>409</b>	<b>74</b>	<b>0</b>	<b>0</b>

Sub-region	Total malignant open biopsies	No non-operative procedures		Cytology only		Core biopsy only		Both cytology and core biopsy	
		No.	%	No.	%	No.	%	No.	%
East Midlands	8	0	0	0	0	7	88	1	13
East of England	14	0	0	0	0	14	100	0	0
London	21	2	10	0	0	16	76	3	14
N East, Yorks & Humber	11	0	0	0	0	9	82	2	18
North West	11	0	0	1	9	7	64	3	27
South Central	17	0	0	0	0	17	100	0	0
South East Coast	15	0	0	0	0	15	100	0	0
South West	16	0	0	0	0	16	100	0	0
West Midlands	9	0	0	0	0	9	100	0	0
Northern Ireland	1	0	0	0	0	0	0	1	100
Scotland	5	0	0	0	0	5	100	0	0
Wales	7	0	0	0	0	7	100	0	0
<b>United Kingdom</b>	<b>135</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>122</b>	<b>90</b>	<b>10</b>	<b>7</b>

Sub-region	Total malignant open biopsies	No non-operative procedures		Cytology only		Core biopsy only		Both cytology and core biopsy	
		No.	%	No.	%	No.	%	No.	%
East Midlands	36	0	0	0	0	34	94	2	6
East of England	41	0	0	0	0	41	100	0	0
London	43	0	0	1	2	41	95	1	2
N East, Yorks & Humber	23	1	4	0	0	21	91	1	4
North West	34	0	0	0	0	34	100	0	0
South Central	46	0	0	0	0	45	98	1	2
South East Coast	59	0	0	0	0	59	100	0	0
South West	51	0	0	0	0	51	100	0	0
West Midlands	42	0	0	0	0	42	100	0	0
Northern Ireland	7	1	14	0	0	6	86	0	0
Scotland	15	0	0	0	0	15	100	0	0
Wales	19	0	0	0	0	19	100	0	0
<b>United Kingdom</b>	<b>416</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>408</b>	<b>98</b>	<b>5</b>	<b>1</b>

Sub-region	Total malignant open biopsies	No non-operative procedures		C4, B4 or both		C3, B3 or both		C2, B2 or both		C1, B1 or both	
		No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	8	0	0	2	25	6	75	0	0	0	0
East of England	14	0	0	9	64	5	36	0	0	0	0
London	21	2	10	5	24	12	57	1	5	1	5
N East, Yorks & Humber	11	0	0	8	73	3	27	0	0	0	0
North West	11	0	0	6	55	5	45	0	0	0	0
South Central	17	0	0	5	29	12	71	0	0	0	0
South East Coast	15	0	0	2	13	12	80	1	7	0	0
South West	16	0	0	12	75	4	25	0	0	0	0
West Midlands	9	0	0	3	33	6	67	0	0	0	0
Northern Ireland	1	0	0	1	100	0	0	0	0	0	0
Scotland	5	0	0	2	40	2	40	0	0	1	20
Wales	7	0	0	0	0	5	71	1	14	1	14
<b>United Kingdom</b>	<b>135</b>	<b>2</b>	<b>1</b>	<b>55</b>	<b>41</b>	<b>72</b>	<b>53</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>2</b>

Sub-region	Total malignant open biopsies	No non-operative procedures		C4, B4 or both		C3, B3 or both		C2, B2 or both		C1, B1 or both	
		No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	36	0	0	10	28	25	69	0	0	1	3
East of England	41	0	0	13	32	28	68	0	0	0	0
London	43	0	0	7	16	35	81	1	2	0	0
N East, Yorks & Humber	23	1	4	6	26	15	65	1	4	0	0
North West	34	0	0	12	35	20	59	1	3	1	3
South Central	46	0	0	10	22	35	76	0	0	1	2
South East Coast	59	0	0	10	17	48	81	1	2	0	0
South West	51	0	0	21	41	29	57	1	2	0	0
West Midlands	42	0	0	11	26	27	64	4	10	0	0
Northern Ireland	7	1	14	0	0	6	86	0	0	0	0
Scotland	15	0	0	6	40	9	60	0	0	0	0
Wales	19	0	0	5	26	13	68	1	5	0	0
<b>United Kingdom</b>	<b>416</b>	<b>2</b>	<b>0</b>	<b>111</b>	<b>27</b>	<b>290</b>	<b>70</b>	<b>10</b>	<b>2</b>	<b>3</b>	<b>1</b>

Sub-region	Unknown cytonuclear grade		Unknown size		Unknown cytonuclear grade and/or size		Total with surgery
	No.	%	No.	%	No.	%	No.
East Midlands	0	0	8	3	8	3	302
East of England	0	0	20	6	20	6	339
London	7	2	36	8	36	8	453
N East, Yorks & Humber	3	1	23	5	24	5	484
North West	0	0	22	5	22	5	482
South Central	1	0	16	5	16	5	349
South East Coast	0	0	5	1	5	1	337
South West	0	0	17	4	17	4	382
West Midlands	2	1	18	5	18	5	388
Northern Ireland	0	0	2	4	2	4	46
Scotland	1	1	2	1	3	2	164
Wales	0	0	13	6	13	6	221
<b>United Kingdom</b>	<b>14</b>	<b>0.4</b>	<b>182</b>	<b>5</b>	<b>184</b>	<b>5</b>	<b>3947</b>

Sub-region	<15mm		15-≤40mm		>40 mm		Size not assessable		Size unknown		Total non-invasive with surgery	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	89	29	137	45	56	19	12	4	8	3	302	100
East of England	119	35	141	42	41	12	18	5	20	6	339	100
London	142	31	189	42	66	15	20	4	36	8	453	100
N East, Yorks & Humber	162	33	190	39	95	20	14	3	23	5	484	100
North West	183	38	198	41	66	14	13	3	22	5	482	100
South Central	114	33	155	44	45	13	19	5	16	5	349	100
South East Coast	126	37	139	41	43	13	24	7	5	1	337	100
South West	123	32	164	43	54	14	24	6	17	4	382	100
West Midlands	153	39	144	37	55	14	18	5	18	5	388	100
Northern Ireland	19	41	19	41	5	11	1	2	2	4	46	100
Scotland	64	39	71	43	24	15	3	2	2	1	164	100
Wales	84	38	92	42	28	13	4	2	13	6	221	100
<b>United Kingdom</b>	<b>1378</b>	<b>35</b>	<b>1639</b>	<b>42</b>	<b>578</b>	<b>15</b>	<b>170</b>	<b>4</b>	<b>182</b>	<b>5</b>	<b>3947</b>	<b>100</b>

Sub-region	High		Intermediate		Low		Not assessable		Unknown		Total non-invasive with surgery	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	165	55	100	33	26	9	11	4	0	0	302	100
East of England	195	58	97	29	30	9	17	5	0	0	339	100
London	264	58	115	25	47	10	20	4	7	2	453	100
N East, Yorks & Humber	285	59	154	32	28	6	14	3	3	1	484	100
North West	267	55	148	31	54	11	13	3	0	0	482	100
South Central	171	49	117	34	42	12	18	5	1	0	349	100
South East Coast	208	62	77	23	27	8	25	7	0	0	337	100
South West	238	62	91	24	29	8	24	6	0	0	382	100
West Midlands	233	60	89	23	45	12	19	5	2	1	388	100
Northern Ireland	32	70	6	13	7	15	1	2	0	0	46	100
Scotland	104	63	50	30	5	3	4	2	1	1	164	100
Wales	122	55	67	30	28	13	4	2	0	0	221	100
<b>United Kingdom</b>	<b>2284</b>	<b>58</b>	<b>1111</b>	<b>28</b>	<b>368</b>	<b>9</b>	<b>170</b>	<b>4</b>	<b>14</b>	<b>0</b>	<b>3947</b>	<b>100</b>



Sub-region	<10mm		10- <15mm		15- ≤20mm		>20- ≤35mm		>35- ≤50mm		>50mm		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	314	27	333	28	251	21	184	16	53	4	23	2	21	2	1179	100
East of England	359	25	430	30	310	22	230	16	42	3	14	1	43	3	1428	100
London	340	23	355	24	367	25	277	19	70	5	31	2	40	3	1480	100
N East, Yorks & Humber	529	27	582	29	419	21	340	17	56	3	36	2	32	2	1994	100
North West	432	25	463	27	406	24	266	15	74	4	38	2	42	2	1721	100
South Central	324	27	304	25	285	23	222	18	40	3	20	2	18	1	1213	100
South East Coast	320	26	329	26	309	25	194	16	38	3	30	2	24	2	1244	100
South West	381	26	420	28	342	23	229	15	50	3	33	2	28	2	1483	100
West Midlands	340	25	359	26	334	25	227	17	44	3	23	2	32	2	1359	100
Northern Ireland	81	24	103	31	74	22	45	14	12	4	9	3	8	2	332	100
Scotland	229	31	224	30	162	22	96	13	16	2	13	2	10	1	750	100
Wales	253	28	241	27	205	23	137	15	20	2	13	1	22	2	891	100
<b>United Kingdom</b>	<b>3902</b>	<b>26</b>	<b>4143</b>	<b>27</b>	<b>3464</b>	<b>23</b>	<b>2447</b>	<b>16</b>	<b>515</b>	<b>3</b>	<b>283</b>	<b>2</b>	<b>320</b>	<b>2</b>	<b>15074</b>	<b>100</b>

Sub-region	<10mm		10- <15mm		15- ≤20mm		>20- ≤35mm		>35- ≤50mm		>50mm		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	210	17	289	23	269	22	263	21	97	8	61	5	42	3	1234	100
East of England	205	14	358	25	362	25	335	23	83	6	51	4	34	2	1428	100
London	216	15	311	21	382	26	357	24	119	8	73	5	22	1	1480	100
N East, Yorks & Humber	292	15	488	24	460	23	484	24	140	7	111	6	19	1	1994	100
North West	282	16	404	23	435	25	361	21	123	7	89	5	27	2	1721	100
South Central	152	13	246	21	301	26	300	26	83	7	61	5	15	1	1158	100
South East Coast	197	16	301	24	296	24	293	24	79	6	55	4	23	2	1244	100
South West	251	17	331	22	364	25	332	22	108	7	76	5	21	1	1483	100
West Midlands	211	16	323	24	339	25	298	22	97	7	65	5	26	2	1359	100
Northern Ireland	61	18	87	26	85	26	59	18	22	7	17	5	1	0	332	100
Scotland	130	17	211	28	178	24	155	21	46	6	28	4	2	0	750	100
Wales	160	18	214	24	222	25	185	21	49	5	35	4	26	3	891	100
<b>United Kingdom</b>	<b>2370</b>	<b>16</b>	<b>3563</b>	<b>24</b>	<b>3693</b>	<b>24</b>	<b>3422</b>	<b>23</b>	<b>1046</b>	<b>7</b>	<b>722</b>	<b>5</b>	<b>258</b>	<b>2</b>	<b>15074</b>	<b>100</b>

Sub-region	Grade 1		Grade 2		Grade 3		Not assessable		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	306	26	655	56	218	18	0	0	0	0	1179	100
East of England	310	22	783	55	318	22	12	1	5	0	1428	100
London	344	23	848	57	261	18	7	0	20	1	1480	100
N East, Yorks & Humber	538	27	1071	54	376	19	7	0	2	0	1994	100
North West	495	29	879	51	343	20	2	0	2	0	1721	100
South Central	288	24	684	56	238	20	2	0	1	0	1213	100
South East Coast	319	26	654	53	265	21	5	0	1	0	1244	100
South West	357	24	849	57	275	19	2	0	0	0	1483	100
West Midlands	367	27	712	52	274	20	5	0	1	0	1359	100
Northern Ireland	77	23	158	48	93	28	1	0	3	1	332	100
Scotland	175	23	432	58	140	19	0	0	3	0	750	100
Wales	240	27	469	53	178	20	0	0	4	0	891	100
<b>United Kingdom</b>	<b>3816</b>	<b>25</b>	<b>8194</b>	<b>54</b>	<b>2979</b>	<b>20</b>	<b>43</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>15074</b>	<b>100</b>

**Table 30: Data completeness for surgically treated invasive cancers (excluding cases with neo-adjuvant therapy)**

Sub-region	Unknown invasive size		Unknown nodal status		Unknown grade		Unknown NPI*		Total invasive
	No.	%	No.	%	No.	%	No.	%	
East Midlands	15	1.3	4	0.3	0	0.0	19	1.6	1184
East of England	22	1.6	21	1.6	2	0.1	50	3.7	1348
London	27	1.9	13	0.9	12	0.9	42	3.0	1394
N East, Yorks & Humber	19	1.0	25	1.3	2	0.1	47	2.4	1933
North West	32	1.9	13	0.8	2	0.1	45	2.7	1656
South Central	12	1.1	12	1.1	1	0.1	26	2.3	1112
South East Coast	12	1.0	16	1.3	0	0.0	28	2.4	1188
South West	21	1.5	10	0.7	0	0.0	32	2.3	1394
West Midlands	22	1.7	5	0.4	0	0.0	29	2.2	1289
Northern Ireland	7	2.1	1	0.3	2	0.6	8	2.4	330
Scotland	6	0.9	2	0.3	2	0.3	8	1.2	688
Wales	16	1.8	8	0.9	3	0.3	26	3.0	866
<b>United Kingdom</b>	<b>211</b>	<b>1.5</b>	<b>130</b>	<b>0.9</b>	<b>26</b>	<b>0.2</b>	<b>360</b>	<b>2.5</b>	<b>14382</b>

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

**Table 31: NPI Group of surgically treated invasive cancers (with known NPI excluding cases with neo-adjuvant therapy)**

Sub-region	EPG		GPG		MPG1		MPG2		PPG		Total with known NPI	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	239	21	438	39	267	24	113	10	56	5	1113	100
East of England	240	18	518	40	349	27	130	10	61	5	1298	100
London	263	19	542	40	324	24	148	11	75	6	1352	100
N East, Yorks & Humber	416	22	736	39	473	25	165	9	96	5	1886	100
North West	391	24	571	35	391	24	171	11	87	5	1611	100
South Central	215	19	452	40	296	26	122	11	53	5	1138	100
South East Coast	247	21	425	37	297	26	120	10	71	6	1160	100
South West	271	20	533	39	356	26	149	11	53	4	1362	100
West Midlands	286	23	462	37	333	26	107	8	72	6	1260	100
Northern Ireland	67	21	103	32	91	28	40	12	21	7	322	100
Scotland	146	21	282	41	163	24	64	9	25	4	680	100
Wales	191	23	341	41	185	22	81	10	42	5	840	100
<b>United Kingdom</b>	<b>2972</b>	<b>21</b>	<b>5403</b>	<b>39</b>	<b>3525</b>	<b>25</b>	<b>1410</b>	<b>10</b>	<b>712</b>	<b>5</b>	<b>14022</b>	<b>100</b>

**Table 32: ER status (invasive cancers)**

Sub-region	Positive		Negative		Not done or Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	1083	90	116	10	1	0	1200
East of England	1332	91	114	8	13	1	1459
London	1411	91	130	8	7	0	1548
N East, Yorks & Humber	1832	90	196	10	4	0	2032
North West	1572	90	180	10	0	0	1752
South Central	1120	91	114	9	2	0	1236
South East Coast	1155	92	103	8	4	0	1262
South West	1400	93	111	7	1	0	1512
West Midlands	1264	91	117	8	3	0	1384
Northern Ireland	302	90	29	9	3	1	334
Scotland	691	90	64	8	14	2	769
Wales	807	89	96	11	3	0	906
<b>United Kingdom</b>	<b>13969</b>	<b>91</b>	<b>1370</b>	<b>9</b>	<b>55</b>	<b>0.4</b>	<b>15394</b>

Sub-region	Positive		Negative		Not done or Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	414	35	127	11	659	55	1200
East of England	389	27	124	8	946	65	1459
London	916	59	266	17	366	24	1548
N East, Yorks & Humber	357	18	228	11	1447	71	2032
North West	1231	70	360	21	161	9	1752
South Central	732	59	210	17	294	24	1236
South East Coast	722	57	180	14	360	29	1262
South West	644	43	172	11	696	46	1512
West Midlands	471	34	185	13	728	53	1384
Northern Ireland	203	61	70	21	61	18	334
Scotland	338	44	94	12	337	44	769
Wales	367	41	156	17	383	42	906
<b>United Kingdom</b>	<b>6784</b>	<b>44</b>	<b>2172</b>	<b>14</b>	<b>6438</b>	<b>42</b>	<b>15394</b>

Sub-region	Positive		Negative		Not done or Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	4	3	84	69	33	27	121
East of England	0	0	64	56	50	44	114
London	1	1	104	80	25	19	130
N East, Yorks & Humber	4	2	159	81	33	17	196
North West	3	2	177	98	0	0	180
South Central	4	4	95	87	10	9	109
South East Coast	9	9	79	77	15	15	103
South West	4	4	70	63	37	33	111
West Midlands	6	5	90	77	21	18	117
Northern Ireland	0	0	27	93	2	7	29
Scotland	2	3	42	66	20	31	64
Wales	2	2	79	82	15	16	96
<b>United Kingdom</b>	<b>39</b>	<b>3</b>	<b>1070</b>	<b>78</b>	<b>261</b>	<b>19</b>	<b>1370</b>

Sub-region	Positive		Negative		Borderline		Not done or Unknown		Total
	No.	%	No.	%	No.	%	No.	%	
East Midlands	145	12	1051	88	1	0	3	0	1200
East of England	149	10	1235	85	8	1	67	5	1459
London	177	11	1341	87	9	1	21	1	1548
N East, Yorks & Humber	231	11	1781	88	3	0	17	1	2032
North West	171	10	1571	90	4	0	6	0	1752
South Central	125	10	1083	88	13	1	15	1	1236
South East Coast	125	10	1108	88	9	1	20	2	1262
South West	161	11	1337	88	10	1	4	0	1512
West Midlands	172	12	1189	86	5	0	18	1	1384
Northern Ireland	35	10	290	87	5	1	4	1	334
Scotland	70	9	682	89	0	0	17	2	769
Wales	83	9	797	88	14	2	12	1	906
<b>United Kingdom</b>	<b>1644</b>	<b>11</b>	<b>13465</b>	<b>87</b>	<b>81</b>	<b>1</b>	<b>204</b>	<b>1</b>	<b>15394</b>

Sub-region	Total HER2 unknown/not done	<10mm invasive size		Grade 1		Negative nodal status	
		No	%	No	%	No	%
East Midlands	3	1	33	1	33	1	33
East of England	67	24	36	19	28	41	61
London	21	9	43	7	33	13	62
N East, Yorks & Humber	17	11	65	3	18	12	71
North West	6	3	50	1	17	5	83
South Central	15	8	53	5	33	11	73
South East Coast	20	8	40	5	25	15	75
South West	4	3	75	2	50	4	100
West Midlands	18	8	44	4	22	14	78
Northern Ireland	4	0	0	1	25	3	75
Scotland	17	0	0	2	12	3	18
Wales	12	4	33	2	17	8	67
<b>United Kingdom</b>	<b>204</b>	<b>79</b>	<b>39</b>	<b>52</b>	<b>25</b>	<b>130</b>	<b>64</b>

Sub-region	Positive		Negative		Not done or Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	55	18	12	4	247	79	314
East of England	71	20	13	4	279	77	363
London	134	28	30	6	311	65	475
N East, Yorks & Humber	171	33	47	9	296	58	514
North West	276	54	64	13	168	33	508
South Central	61	17	8	2	294	81	363
South East Coast	123	34	29	8	205	57	357
South West	154	37	37	9	221	54	412
West Midlands	43	11	10	2	352	87	405
Northern Ireland	13	26	5	10	32	64	50
Scotland	63	37	11	6	97	57	171
Wales	21	9	2	1	213	90	236
<b>United Kingdom</b>	<b>1185</b>	<b>28</b>	<b>268</b>	<b>6</b>	<b>2715</b>	<b>65</b>	<b>4168</b>

Sub-region	Conservation surgery		Mastectomy		No surgery		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	210	69	92	30	1	0	0	0	303	100
East of England	262	76	77	22	7	2	0	0	346	100
London	340	73	113	24	14	3	0	0	467	100
N East, Yorks & Humber	370	75	114	23	11	2	0	0	495	100
North West	361	74	121	25	8	2	0	0	490	100
South Central	276	78	73	21	6	2	0	0	355	100
South East Coast	275	80	62	18	6	2	0	0	343	100
South West	292	75	90	23	6	2	0	0	388	100
West Midlands	295	75	93	24	5	1	0	0	393	100
Northern Ireland	36	77	10	21	1	2	0	0	47	100
Scotland	142	85	22	13	3	2	0	0	167	100
Wales	172	75	49	21	8	3	0	0	229	100
<b>United Kingdom</b>	<b>3031</b>	<b>75</b>	<b>916</b>	<b>23</b>	<b>76</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>4023</b>	<b>100</b>

Sub-region	Conservation surgery		Mastectomy		No surgery		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	3	27	8	73	0	0	0	0	11	100
East of England	8	47	9	53	0	0	0	0	17	100
London	7	88	1	13	0	0	0	0	8	100
N East, Yorks & Humber	9	47	10	53	0	0	0	0	19	100
North West	12	67	6	33	0	0	0	0	18	100
South Central	5	63	3	38	0	0	0	0	8	100
South East Coast	9	64	5	36	0	0	0	0	14	100
South West	13	54	11	46	0	0	0	0	24	100
West Midlands	7	58	5	42	0	0	0	0	12	100
Northern Ireland	2	67	1	33	0	0	0	0	3	100
Scotland	2	50	2	50	0	0	0	0	4	100
Wales	1	14	6	86	0	0	0	0	7	100
<b>United Kingdom</b>	<b>78</b>	<b>54</b>	<b>67</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>145</b>	<b>100</b>

Sub-region	Conservation surgery		Mastectomy		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%
East Midlands	16	29	40	71	0	0	56	100
East of England	10	24	31	76	0	0	41	100
London	19	29	47	71	0	0	66	100
N East, Yorks & Humber	21	22	74	78	0	0	95	100
North West	9	14	57	86	0	0	66	100
South Central	12	27	33	73	0	0	45	100
South East Coast	15	35	28	65	0	0	43	100
South West	17	31	37	69	0	0	54	100
West Midlands	10	18	45	82	0	0	55	100
Northern Ireland	1	20	4	80	0	0	5	100
Scotland	13	54	11	46	0	0	24	100
Wales	7	25	21	75	0	0	28	100
<b>United Kingdom</b>	<b>150</b>	<b>26</b>	<b>428</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>578</b>	<b>100</b>

Sub-region	Conservation surgery		Mastectomy		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%
East Midlands	9	23	30	77	0	0	39	100
East of England	8	25	24	75	0	0	32	100
London	13	25	40	75	0	0	53	100
N East, Yorks & Humber	16	21	61	79	0	0	77	100
North West	9	16	46	84	0	0	55	100
South Central	8	29	20	71	0	0	28	100
South East Coast	8	25	24	75	0	0	32	100
South West	14	29	35	71	0	0	49	100
West Midlands	7	16	38	84	0	0	45	100
Northern Ireland	1	20	4	80	0	0	5	100
Scotland	11	58	8	42	0	0	19	100
Wales	5	24	16	76	0	0	21	100
<b>United Kingdom</b>	<b>109</b>	<b>24</b>	<b>346</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>455</b>	<b>100</b>

Sub-region	Conservation surgery		Mastectomy		No Surgery		Unknown		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	907	76	272	23	21	2	0	0	1200	100
East of England	1202	82	225	15	31	2	1	0	1459	100
London	1187	77	293	19	68	4	0	0	1548	100
N East, Yorks & Humber	1574	77	420	21	38	2	0	0	2032	100
North West	1351	77	370	21	31	2	0	0	1752	100
South Central	940	76	273	22	23	2	0	0	1236	100
South East Coast	1009	80	235	19	18	1	0	0	1262	100
South West	1198	79	285	19	29	2	0	0	1512	100
West Midlands	1055	76	304	22	25	2	0	0	1384	100
Northern Ireland	263	79	69	21	2	1	0	0	334	100
Scotland	643	84	107	14	19	2	0	0	769	100
Wales	701	77	190	21	15	2	0	0	906	100
<b>United Kingdom</b>	<b>12030</b>	<b>78</b>	<b>3043</b>	<b>20</b>	<b>320</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>15394</b>	<b>100</b>

2.

Sub-region	<15mm		15-≤20mm		>20-≤35mm		>35-≤50mm		>50mm	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	94	15	50	20	65	35	35	66	21	91
East of England	79	10	40	13	58	25	28	67	12	86
London	81	12	50	14	87	31	40	57	26	84
N East, Yorks & Humber	164	15	68	16	108	32	35	63	32	89
North West	122	14	63	16	82	31	58	78	33	87
South Central	102	16	54	19	72	32	23	58	15	75
South East Coast	65	10	57	18	66	34	21	55	22	73
South West	101	13	54	16	78	34	22	44	27	82
West Midlands	99	14	59	18	78	34	32	73	23	100
Northern Ireland	23	13	11	15	14	31	10	83	9	100
Scotland	40	9	17	10	27	28	9	56	12	92
Wales	66	13	49	24	49	36	8	40	11	85
<b>United Kingdom</b>	<b>1036</b>	<b>13</b>	<b>572</b>	<b>17</b>	<b>784</b>	<b>32</b>	<b>321</b>	<b>62</b>	<b>243</b>	<b>86</b>

Sub-region	<15mm		15-≤20mm		>20-≤35mm		>35-≤50mm		>50mm	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	39	8	35	14	71	29	57	60	51	88
East of England	25	4	33	9	73	22	47	57	41	80
London	46	9	43	11	78	22	65	55	59	81
N East, Yorks & Humber	55	7	57	12	131	27	72	51	99	89
North West	50	7	51	12	93	26	89	72	80	90
South Central	26	6	55	17	89	28	49	58	47	73
South East Coast	23	5	37	13	82	28	45	57	41	75
South West	38	7	43	12	91	27	50	46	59	78
West Midlands	45	8	47	14	81	27	62	64	60	92
Northern Ireland	15	10	7	8	15	25	16	73	16	94
Scotland	13	4	14	8	36	23	22	48	22	79
Wales	31	8	38	17	58	31	21	43	30	86
<b>United Kingdom</b>	<b>406</b>	<b>7</b>	<b>460</b>	<b>12</b>	<b>898</b>	<b>26</b>	<b>595</b>	<b>57</b>	<b>605</b>	<b>84</b>

Sub-region	Whole Size <15mm		Whole size 15-≤20mm		Whole size >20-≤35mm		Whole size >35-≤50mm		Whole size >50mm	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	38	8	12	18	7	14	17	71	19	86
East of England	25	4	7	6	23	28	10	43	14	74
London	43	8	7	9	7	12	12	50	12	71
N East, Yorks & Humber	52	7	18	14	36	31	23	48	35	90
North West	47	7	9	9	19	31	20	74	27	96
South Central	26	6	23	23	19	28	20	74	13	68
South East Coast	23	5	6	8	9	23	17	59	9	82
South West	38	7	6	7	24	29	12	43	18	78
West Midlands	41	8	12	16	14	25	14	58	18	100
Northern Ireland	14	10	2	8	2	22	1	50	4	100
Scotland	13	4	4	10	11	22	9	56	3	43
Wales	31	8	7	12	11	31	6	50	8	80
<b>United Kingdom</b>	<b>391</b>	<b>7</b>	<b>113</b>	<b>12</b>	<b>182</b>	<b>26</b>	<b>161</b>	<b>57</b>	<b>180</b>	<b>83</b>

Sub-region	Immediate reconstruction		No immediate reconstruction		Unknown		Total mastectomies	
	No.	%	No.	%	No.	%	No.	%
East Midlands	100	27	272	73	0	0	372	100
East of England	116	37	142	46	53	17	311	100
London	163	40	242	59	2	0	407	100
N East, Yorks & Humber	204	38	340	63	0	0	544	100
North West	201	40	296	60	0	0	497	100
South Central	98	28	251	72	0	0	349	100
South East Coast	121	40	181	60	0	0	302	100
South West	127	33	259	67	0	0	386	100
West Midlands	128	32	274	68	0	0	402	100
Northern Ireland	11	14	69	86	0	0	80	100
Scotland	45	34	86	66	0	0	131	100
Wales	42	17	203	83	0	0	245	100
<b>United Kingdom</b>	<b>1356</b>	<b>34</b>	<b>2615</b>	<b>65</b>	<b>55</b>	<b>1</b>	<b>4026</b>	<b>100</b>

Sub-region	Had treatment		Did not have treatment		Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	69	5	1445	95	0	0	1514
East of England	92	5	1731	95	0	0	1823
London	122	6	1902	94	0	0	2024
N East, Yorks & Humber	88	3	2458	97	0	0	2546
North West	87	4	2173	96	0	0	2260
South Central	61	4	1538	96	0	0	1599
South East Coast	64	4	1555	96	0	0	1619
South West	117	6	1808	94	0	0	1925
West Midlands	88	5	1701	95	0	0	1789
Northern Ireland	4	1	380	99	0	0	384
Scotland	85	9	854	91	1	0	940
Wales	42	4	1100	96	0	0	1142
<b>United Kingdom</b>	<b>919</b>	<b>5</b>	<b>18645</b>	<b>95</b>	<b>1</b>	<b>0</b>	<b>19565</b>

Sub-region	Had treatment		Did not have treatment		Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	35	2	1479	98	0	0	1514
East of England	32	2	1791	98	0	0	1823
London	58	3	1966	97	0	0	2024
N East, Yorks & Humber	48	2	2498	98	0	0	2546
North West	52	2	2208	98	0	0	2260
South Central	24	2	1575	98	0	0	1599
South East Coast	34	2	1585	98	0	0	1619
South West	69	4	1856	96	0	0	1925
West Midlands	48	3	1741	97	0	0	1789
Northern Ireland	0	0	384	100	0	0	384
Scotland	69	7	869	92	2	0	940
Wales	23	2	1119	98	0	0	1142
<b>United Kingdom</b>	<b>492</b>	<b>3</b>	<b>19071</b>	<b>97</b>	<b>2</b>	<b>0</b>	<b>19565</b>

Sub-region	Had treatment		Did not have treatment		Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	35	3	1165	97	0	0	1200
East of England	60	4	1399	96	0	0	1459
London	66	4	1482	96	0	0	1548
N East, Yorks & Humber	40	2	1992	98	0	0	2032
North West	37	2	1715	98	0	0	1752
South Central	40	3	1196	97	0	0	1236
South East Coast	30	2	1232	98	0	0	1262
South West	50	3	1462	97	0	0	1512
West Midlands	47	3	1337	97	0	0	1384
Northern Ireland	3	1	331	99	0	0	334
Scotland	19	2	750	98	0	0	769
Wales	20	2	886	98	0	0	906
<b>United Kingdom</b>	<b>447</b>	<b>3</b>	<b>14947</b>	<b>97</b>	<b>0</b>	<b>0</b>	<b>15394</b>

Sub-region	Had treatment		Did not have treatment		Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	0	0	1514	100	0	0	1514
East of England	2	0	1821	100	0	0	1823
London	6	0	2018	100	0	0	2024
N East, Yorks & Humber	7	0	2539	100	0	0	2546
North West	3	0	2257	100	0	0	2260
South Central	3	0	1596	100	0	0	1599
South East Coast	3	0	1616	100	0	0	1619
South West	3	0	1922	100	0	0	1925
West Midlands	7	0	1782	100	0	0	1789
Northern Ireland	1	0	383	100	0	0	384
Scotland	6	1	933	99	1	0	940
Wales	1	0	1141	100	0	0	1142
<b>United Kingdom</b>	<b>42</b>	<b>0</b>	<b>19522</b>	<b>100</b>	<b>1</b>	<b>0</b>	<b>19565</b>



**Table 51: Annual screening surgical caseload per surgeon (2014/15)**

Sub-region	Total surgeons	<10 cases		10-29 cases		30-49 cases		50-79 cases		80-99 cases		100+ cases		Median
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
East Midlands	45	5	11	16	36	12	27	9	20	3	7	0	0	31
East of England	57	12	21	12	21	17	30	14	25	2	4	0	0	35
London	89	34	38	27	30	15	17	11	12	2	2	0	0	16
N East, Yorks & Humber	75	16	21	18	24	19	25	18	24	2	3	2	3	33
North West	72	22	31	13	18	20	28	12	17	4	6	1	1	33
South Central	40	7	18	12	30	6	15	9	23	2	5	4	10	33
South East Coast	44	5	11	12	27	17	39	7	16	1	2	2	5	37
South West	60	16	27	14	23	12	20	15	25	3	5	0	0	32
West Midlands	61	17	28	12	20	22	36	9	15	0	0	1	2	32
Northern Ireland	15	2	13	6	40	6	40	1	7	0	0	0	0	25
Scotland	40	12	30	12	30	14	35	2	5	0	0	0	0	23.5
Wales	26	8	31	2	8	3	12	7	27	5	19	1	4	48
<b>United Kingdom</b>	<b>624</b>	<b>156</b>	<b>25</b>	<b>156</b>	<b>25</b>	<b>163</b>	<b>26</b>	<b>114</b>	<b>18</b>	<b>24</b>	<b>4</b>	<b>11</b>	<b>2</b>	<b>30</b>

The surgeons in each sub-region are credited with their total UK screening caseload.

**Table 52: Proportion of women referred to consultant surgeons according to annual caseload of surgeon (2014/15)**

Sub-region	Total (referred)	<10 cases		10-29 cases		30-49 cases		50-79 cases		80-99 cases		100+ cases	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	1578	23	1	325	21	459	29	512	32	259	16	0	0
East of England	1943	26	1	242	12	660	34	836	43	177	9	2	0
London	2060	134	7	500	24	597	29	659	32	169	8	1	0
N East, Yorks & Humber	2678	56	2	382	14	732	27	1109	41	185	7	214	8
North West	2336	65	3	283	12	794	34	739	32	352	15	103	4
South Central	1666	18	1	234	14	223	13	571	34	172	10	448	27
South East Coast	1745	28	2	251	14	687	39	455	26	90	5	234	13
South West	2011	39	2	309	15	511	25	894	44	258	13	0	0
West Midlands	1886	56	3	297	16	873	46	554	29	0	0	106	6
Northern Ireland	400	8	2	110	28	226	57	56	14	0	0	0	0
Scotland	986	28	3	248	25	563	57	147	15	0	0	0	0
Wales	1208	31	3	41	3	116	10	466	39	453	38	101	8
<b>United Kingdom</b>	<b>20497</b>	<b>512</b>	<b>2</b>	<b>3222</b>	<b>16</b>	<b>6441</b>	<b>31</b>	<b>6998</b>	<b>34</b>	<b>2115</b>	<b>10</b>	<b>1209</b>	<b>6</b>

**Table 53: Annual screening surgical caseload per surgeon (2012/13-2014/15)**

Sub-region	Total surgeons	<10 cases		10-29 cases		30-49 cases		50-79 cases		80-99 cases		100+ cases		Median
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
East Midlands	56	17	30	17	30	13	23	7	13	2	4	0	0	72.5
East of England	68	23	34	12	18	21	31	12	18	0	0	0	0	85.0
London	104	48	46	28	27	20	19	6	6	1	1	1	1	37.5
N East, Yorks & Humber	91	29	32	18	20	25	27	16	18	3	3	0	0	87.0
North West	84	28	33	22	26	20	24	11	13	3	4	0	0	74.0
South Central	49	17	35	7	14	10	20	11	22	4	8	0	0	93.0
South East Coast	50	11	22	13	26	17	34	6	12	1	2	2	4	92.0
South West	74	26	35	18	24	13	18	16	22	1	1	0	0	76.0
West Midlands	69	20	29	21	30	21	30	6	9	1	1	0	0	64.0
Northern Ireland	18	4	22	7	39	7	39	0	0	0	0	0	0	71.5
Scotland	69	29	42	19	28	15	22	4	6	2	3	0	0	44.0
Wales	30	10	33	3	10	4	13	11	37	2	7	0	0	117.5
<b>United Kingdom</b>	<b>762</b>	<b>262</b>	<b>34</b>	<b>185</b>	<b>24</b>	<b>186</b>	<b>24</b>	<b>106</b>	<b>14</b>	<b>20</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>69.0</b>

**Table 54: Proportion of women referred to consultant surgeons according to annual caseload of surgeon (2012/13-2014/15)**

Sub-region	Total (referred)	<10 cases		10-29 cases		30-49 cases		50-79 cases		80-99 cases		100+ cases	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	4592	153	3	904	20	1705	37	1332	29	498	11	0	0
East of England	5639	186	3	764	14	2611	46	2069	37	9	0	0	0
London	5896	397	7	1507	26	2432	41	948	16	267	5	345	6
N East, Yorks & Humber	8023	234	3	1247	16	2775	35	2914	36	853	11	0	0
North West	6737	203	3	1415	21	2259	34	2081	31	779	12	0	0
South Central	4640	136	3	370	8	1269	27	1816	39	1049	23	0	0
South East Coast	5093	115	2	779	15	2016	40	1202	24	277	5	704	14
South West	6003	156	3	1203	20	1424	24	2979	50	241	4	0	0
West Midlands	5462	88	2	1268	23	2590	47	1252	23	264	5	0	0
Northern Ireland	1214	44	4	456	38	714	59	0	0	0	0	0	0
Scotland	4142	233	6	1036	25	1680	41	659	16	534	13	0	0
Wales	3399	85	3	183	5	464	14	2149	63	518	15	0	0
<b>United Kingdom</b>	<b>60840</b>	<b>2030</b>	<b>3</b>	<b>11132</b>	<b>18</b>	<b>21939</b>	<b>36</b>	<b>19401</b>	<b>32</b>	<b>5289</b>	<b>9</b>	<b>1049</b>	<b>2</b>

**Table 55: Explanations for surgeons treating less than 10 screening cases (2014/15)**

Sub-region	Number surgeons with caseload <10	Other caseload >30 year	Joined NHSBSP	Left NHSBSP	Plastic surgeon	Private practice	No information	Other
East Midlands	5	0	1	1	1	0	2	0
East of England	12	3	0	0	3	1	5	0
London	34	8	7	1	3	3	12	0
N East, Yorks & Humber	16	2	2	2	2	1	7	0
North West	22	7	0	2	2	4	6	1
South Central	7	1	1	1	1	1	2	0
South East Coast	5	0	1	0	0	3	1	0
South West	16	4	1	0	1	4	6	0
West Midlands	17	0	1	2	8	1	5	0
Northern Ireland	2	1	0	1	0	0	0	0
Scotland	12	0	4	0	0	1	6	1
Wales	8	2	1	0	3	0	0	2
<b>United Kingdom</b>	<b>156</b>	<b>28</b>	<b>19</b>	<b>10</b>	<b>24</b>	<b>19</b>	<b>52</b>	<b>4</b>

**Table 56: Explanations for surgeons treating less than 10 screening cases annually (2012/13-2014/15)**

Sub-region	Number surgeons with caseload <10	Other caseload >30 year	Joined NHSBSP	Left NHSBSP	Plastic surgeon	Private practice	No information	Other
East Midlands	17	0	1	0	2	1	5	8
East of England	23	4	1	1	4	2	5	6
London	48	7	6	1	7	9	10	8
N East, Yorks & Humber	29	4	1	5	4	2	5	8
North West	28	12	1	1	2	3	5	4
South Central	17	2	1	0	6	2	1	5
South East Coast	11	0	1	2	2	1	2	3
South West	26	4	1	0	4	2	11	4
West Midlands	20	1	1	1	8	3	5	1
Northern Ireland	4	0	1	2	0	0	0	1
Scotland	29	4	4	2	0	0	10	9
Wales	10	3	1	0	3	0	0	3
<b>United Kingdom</b>	<b>262</b>	<b>41</b>	<b>20</b>	<b>15</b>	<b>42</b>	<b>25</b>	<b>59</b>	<b>60</b>

Sub-region	Invasive			Non/micro-invasive		
	Total	Re-op	%	Total	Re-op	%
East Midlands	1179	220	19	313	72	23
East of England	1428	338	24	356	98	28
London	1480	321	22	461	100	22
N East, Yorks & Humber	1994	342	17	503	114	23
North West	1721	353	21	500	111	22
South Central	1213	249	21	357	87	24
South East Coast	1244	240	19	351	100	28
South West	1483	297	20	406	128	32
West Midlands	1359	310	23	400	113	28
Northern Ireland	332	65	20	49	17	35
Scotland	750	128	17	168	39	23
Wales	891	161	18	228	62	27
<b>United Kingdom</b>	<b>15074</b>	<b>3024</b>	<b>20</b>	<b>4092</b>	<b>1041</b>	<b>25</b>

Sub-region	Invasive			Non/micro-invasive		
	Total	Re-op	%	Total	Re-op	%
East Midlands	8	8	100	36	18	50
East of England	14	11	79	41	13	32
London	21	18	86	43	9	21
N East, Yorks & Humber	11	7	64	23	13	57
North West	11	10	91	34	14	41
South Central	17	16	94	46	17	37
South East Coast	15	10	67	59	20	34
South West	16	12	75	51	12	24
West Midlands	9	9	100	42	19	45
Northern Ireland	1	1	100	7	4	57
Scotland	5	1	20	15	5	33
Wales	7	7	100	19	7	37
<b>United Kingdom</b>	<b>135</b>	<b>110</b>	<b>81</b>	<b>416</b>	<b>151</b>	<b>36</b>

Sub-region	1		2		3		4+		Unknown		Total cancers		Repeat 2+ ops	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
East Midlands	751	81	156	17	21	2	1	0	0	0	929	100	178	19
East of England	946	78	258	21	15	1	1	0	0	0	1220	100	274	22
London	958	81	219	18	9	1	2	0	0	0	1188	100	230	19
N East, Yorks & Humber	1348	83	245	15	24	1	3	0	0	0	1620	100	272	17
North West	1115	80	261	19	20	1	0	0	0	0	1396	100	281	20
South Central	764	79	186	19	14	1	4	0	0	0	968	100	204	21
South East Coast	824	81	175	17	21	2	3	0	0	0	1023	100	199	19
South West	981	80	214	17	26	2	2	0	0	0	1223	100	242	20
West Midlands	851	77	224	20	23	2	3	0	0	0	1101	100	250	23
Northern Ireland	218	80	52	19	4	1	0	0	0	0	274	100	56	20
Scotland	543	83	96	15	15	2	3	0	1	0	658	100	114	17
Wales	590	81	124	17	12	2	3	0	0	0	729	100	139	19
<b>United Kingdom</b>	<b>9889</b>	<b>80</b>	<b>2210</b>	<b>18</b>	<b>204</b>	<b>2</b>	<b>25</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>12329</b>	<b>100</b>	<b>2439</b>	<b>20</b>

Sub-region	1		2		3		4+		Unknown		Total cancers		Repeat 2+ ops	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
East Midlands	145	74	37	19	12	6	3	2	0	0	197	100	52	26
East of England	184	72	61	24	10	4	2	1	0	0	257	100	73	28
London	255	78	64	20	7	2	2	1	0	0	328	100	73	22
N East, Yorks & Humber	292	76	78	20	12	3	3	1	0	0	385	100	93	24
North West	272	75	80	22	9	2	2	1	0	0	363	100	91	25
South Central	188	74	58	23	7	3	0	0	0	0	253	100	65	26
South East Coast	170	70	63	26	10	4	1	0	0	0	244	100	74	30
South West	176	62	82	29	16	6	10	4	0	0	284	100	108	38
West Midlands	211	75	57	20	13	5	2	1	0	0	283	100	72	25
Northern Ireland	24	67	10	28	2	6	0	0	0	0	36	100	12	33
Scotland	101	75	25	19	5	4	3	2	0	0	134	100	33	25
Wales	117	70	46	28	3	2	0	0	0	0	166	100	49	30
<b>United Kingdom</b>	<b>2135</b>	<b>73</b>	<b>661</b>	<b>23</b>	<b>106</b>	<b>4</b>	<b>28</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2930</b>	<b>100</b>	<b>795</b>	<b>27</b>

Sub-region	1		2		3+		Unknown		Total		Repeat (2+) rate	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	927	84	162	15	19	2	0	0	1108	100	181	16
East of England	1053	79	271	20	11	1	1	0	1336	100	282	21
London	1114	81	247	18	8	1	0	0	1369	100	255	19
N East, Yorks & Humber	1590	85	253	14	19	1	0	0	1862	100	272	15
North West	1342	83	269	17	14	1	0	0	1625	100	283	17
South Central	940	83	177	16	15	1	0	0	1132	100	192	17
South East Coast	973	83	174	15	20	2	0	0	1167	100	194	17
South West	1153	83	220	16	22	2	0	0	1395	100	242	17
West Midlands	1013	80	233	18	24	2	0	0	1270	100	257	20
Northern Ireland	255	81	56	18	4	1	0	0	315	100	60	19
Scotland	600	85	96	14	13	2	1	0	710	100	109	15
Wales	710	85	113	14	12	1	0	0	835	100	125	15
<b>United Kingdom</b>	<b>11670</b>	<b>83</b>	<b>2271</b>	<b>16</b>	<b>181</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>14124</b>	<b>100</b>	<b>2452</b>	<b>17</b>

Sub-region	1		2		3+		Unknown		Total		Repeat (2+) rate	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	0	-	0	-	0	-	0	-	0	-	0	-
East of England	1	100	0	0	0	0	0	0	1	100	0	0
London	0	-	0	-	0	-	0	-	0	-	0	-
N East, Yorks & Humber	4	100	0	0	0	0	0	0	4	100	0	0
North West	0	-	0	-	0	-	0	-	0	-	0	-
South Central	0	-	0	-	0	-	0	-	0	-	0	-
South East Coast	0	-	0	-	0	-	0	-	0	-	0	-
South West	1	33	1	33	1	33	0	0	3	100	2	67
West Midlands	0	-	0	-	0	-	0	-	0	-	0	-
Northern Ireland	3	100	0	0	0	0	0	0	3	100	0	0
Scotland	1	100	0	0	0	0	0	0	1	100	0	0
Wales	0	-	0	-	0	-	0	-	0	-	0	-
<b>United Kingdom</b>	<b>10</b>	<b>83</b>	<b>1</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>100</b>	<b>2</b>	<b>17</b>

Sub-region	1		2		3+		Unknown		Total		Repeat (2+) rate	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	28	52	24	44	2	4	0	0	54	100	26	48
East of England	28	40	36	51	6	9	0	0	70	100	42	60
London	35	43	42	51	5	6	0	0	82	100	47	57
N East, Yorks & Humber	46	43	54	50	8	7	0	0	108	100	62	57
North West	21	27	50	65	6	8	0	0	77	100	56	73
South Central	19	32	37	62	4	7	0	0	60	100	41	68
South East Coast	24	40	32	53	4	7	0	0	60	100	36	60
South West	25	38	36	55	5	8	0	0	66	100	41	62
West Midlands	25	38	39	59	2	3	0	0	66	100	41	62
Northern Ireland	8	67	4	33	0	0	0	0	12	100	4	33
Scotland	16	48	13	39	4	12	0	0	33	100	17	52
Wales	20	41	26	53	3	6	0	0	49	100	29	59
<b>United Kingdom</b>	<b>295</b>	<b>40</b>	<b>393</b>	<b>53</b>	<b>49</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>737</b>	<b>100</b>	<b>442</b>	<b>60</b>

Sub-region	1		2		3+		Unknown		Total		Repeat (2+) rate	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	219	80	39	14	15	5	0	0	273	100	54	20
East of England	223	73	71	23	12	4	0	0	306	100	83	27
London	323	78	81	20	9	2	0	0	413	100	90	22
N East, Yorks & Humber	372	79	84	18	14	3	0	0	470	100	98	21
North West	362	79	86	19	11	2	0	0	459	100	97	21
South Central	240	77	63	20	7	2	0	0	310	100	70	23
South East Coast	211	73	69	24	11	4	0	0	291	100	80	27
South West	237	68	85	24	27	8	0	0	349	100	112	32
West Midlands	255	74	77	22	13	4	0	0	345	100	90	26
Northern Ireland	29	69	11	26	2	5	0	0	42	100	13	31
Scotland	118	79	25	17	7	5	0	0	150	100	32	21
Wales	154	74	52	25	3	1	0	0	209	100	55	26
<b>United Kingdom</b>	<b>2743</b>	<b>76</b>	<b>743</b>	<b>21</b>	<b>131</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3617</b>	<b>100</b>	<b>874</b>	<b>24</b>

Sub-region	All cancers with initial BCS (with non-op diagnosis)	Repeat BCS	
		No	%
East Midlands	1126	147	13
East of England	1477	192	13
London	1516	186	12
N East, Yorks & Humber	2005	212	11
North West	1759	200	11
South Central	1221	170	14
South East Coast	1267	186	15
South West	1507	225	15
West Midlands	1384	188	14
Northern Ireland	310	28	9
Scotland	792	109	14
Wales	895	96	11
<b>United Kingdom</b>	<b>15259</b>	<b>1939</b>	<b>13</b>

Sub-region	All cancers with initial BCS (with non-op diagnosis)	Converted to Mx	
		No	%
East Midlands	1126	45	4
East of England	1477	65	4
London	1516	50	3
N East, Yorks & Humber	2005	87	4
North West	1759	74	4
South Central	1221	62	5
South East Coast	1267	45	4
South West	1507	70	5
West Midlands	1384	79	6
Northern Ireland	310	16	5
Scotland	792	23	3
Wales	895	49	5
<b>United Kingdom</b>	<b>15259</b>	<b>665</b>	<b>4</b>

Sub-region	Total cases with surgery to the breast	Complete margin data	% complete margin data	Not complete margin data
East Midlands	1471	1130	77	341
East of England	1746	1488	85	258
London	1883	1657	88	226
N East, Yorks & Humber	2457	2255	92	202
North West	2179	1965	90	214
South Central	1546	1335	86	211
South East Coast	1579	1348	85	231
South West	1859	1631	88	228
West Midlands	1729	1508	87	221
Northern Ireland	378	336	89	42
Scotland	-	-	-	-
Wales	1101	927	84	174
<b>United Kingdom</b>	<b>17741</b>	<b>14654</b>	<b>83</b>	<b>3087</b>

\*Excluded cases from Scotland

Sub-region	Total cases with surgery	Margin clear		Margin not clear		Margin unknown	
		No.	%	No.	%	No.	%
East Midlands	1105	1095	99	8	1	2	0
East of England	1437	1418	99	19	1	0	0
London	1480	1463	99	17	1	0	0
N East, Yorks & Humber	1920	1900	99	15	1	5	0
North West	1686	1662	99	23	1	1	0
South Central	1202	1173	98	27	2	2	0
South East Coast	1278	1260	99	16	1	2	0
South West	1475	1461	99	12	1	2	0
West Midlands	1331	1303	98	27	2	1	0
Northern Ireland	298	296	99	1	0	1	0
Scotland	-	-	-	-	-	-	-
Wales	858	850	99	6	1	2	0
<b>United Kingdom</b>	<b>14070</b>	<b>13881</b>	<b>99</b>	<b>171</b>	<b>1</b>	<b>18</b>	<b>0</b>

\*Excluded cases from Scotland

Sub-region	Total cases with surgery	Margin clear		Margin not clear		Margin unknown	
		No.	%	No.	%	No.	%
East Midlands	366	365	100	1	0	0	0
East of England	308	302	98	5	2	1	0
London	403	398	99	4	1	1	0
N East, Yorks & Humber	537	523	97	14	3	0	0
North West	493	486	99	5	1	2	0
South Central	344	330	96	13	4	1	0
South East Coast	301	295	98	6	2	0	0
South West	384	374	97	8	2	2	1
West Midlands	398	383	96	10	3	5	1
Northern Ireland	80	78	98	2	3	0	0
Scotland	-	-	-	-	-	-	-
Wales	243	226	93	10	4	7	3
<b>United Kingdom</b>	<b>3745</b>	<b>3534</b>	<b>94</b>	<b>68</b>	<b>2</b>	<b>143</b>	<b>4</b>

\*Excluded cases from Scotland

Sub-region	Had axillary ultrasound		Did not have axillary ultrasound		Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	1189	99	11	1	0	0	1200
East of England	1422	97	35	2	2	0	1459
London	1446	93	26	2	76	5	1548
N East, Yorks & Humber	1991	98	41	2	0	0	2032
North West	1714	98	36	2	2	0	1752
South Central	1230	100	3	0	3	0	1236
South East Coast	1256	100	5	0	1	0	1262
South West	1498	99	13	1	1	0	1512
West Midlands	1366	99	18	1	0	0	1384
Northern Ireland	320	96	3	1	11	3	334
Scotland	-	-	-	-	-	-	-
Wales	842	93	60	7	4	0	906
<b>United Kingdom</b>	<b>14274</b>	<b>98</b>	<b>251</b>	<b>2</b>	<b>100</b>	<b>1</b>	<b>14625</b>

\*Scotland did not supply any axillary ultrasound information

Sub-region	Normal		Abnormal		Total
	No.	%	No.	%	
East Midlands	978	82	211	18	1189
East of England	1205	85	217	15	1422
London	1214	84	232	16	1446
N East, Yorks & Humber	1555	78	436	22	1991
North West	1358	79	356	21	1714
South Central	1080	88	150	12	1230
South East Coast	1135	90	121	10	1256
South West	1264	84	234	16	1498
West Midlands	1177	86	189	14	1366
Northern Ireland	252	79	68	21	320
Scotland	-	-	-	-	-
Wales	669	79	173	21	842
<b>United Kingdom</b>	<b>11887</b>	<b>83</b>	<b>2387</b>	<b>17</b>	<b>14274</b>

\*Excluded cases from Scotland

**Table 72: Axillary biopsy for invasive cancers with an abnormal axillary ultrasound result**

Sub-region	Had axillary biopsy		Did not have axillary biopsy		Unknown		Total
	No.	%	No.	%	No.	%	
East Midlands	208	99	3	1	0	0	211
East of England	212	98	4	2	1	0	217
London	231	100	1	0	0	0	232
N East, Yorks & Humber	427	98	9	2	0	0	436
North West	352	99	4	1	0	0	356
South Central	149	99	1	1	0	0	150
South East Coast	121	100	0	0	0	0	121
South West	233	100	1	0	0	0	234
West Midlands	185	98	4	2	0	0	189
Northern Ireland	67	99	1	1	0	0	68
Scotland	-	-	-	-	-	-	-
Wales	173	100	0	0	0	0	173
<b>United Kingdom</b>	<b>2358</b>	<b>99</b>	<b>28</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2387</b>

\*Excluded cases from Scotland

**Table 73: Worst axillary biopsy result for invasive cancer cases with an abnormal axillary ultrasound result**

Sub-region	C1/B1		C2/B2		C3/B3		C4/B4		C5/B5		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
East Midlands	9	4	98	47	3	1	0	0	98	47	208
East of England	16	8	93	44	0	0	1	0	102	48	212
London	13	6	109	47	1	0	4	2	104	45	231
N East, Yorks & Humber	24	6	249	58	8	2	4	1	142	33	427
North West	27	8	203	58	5	1	9	3	108	31	352
South Central	21	14	68	46	0	0	1	1	59	40	149
South East Coast	15	12	41	34	1	1	1	1	63	52	121
South West	27	12	96	41	2	1	3	1	105	45	233
West Midlands	22	12	64	35	4	2	5	3	90	49	185
Northern Ireland	1	1	43	64	1	1	1	1	21	31	67
Scotland	-	-	-	-	-	-	-	-	-	-	-
Wales	12	7	81	47	3	2	2	1	75	43	173
<b>United Kingdom</b>	<b>187</b>	<b>8</b>	<b>1145</b>	<b>49</b>	<b>28</b>	<b>1</b>	<b>31</b>	<b>1</b>	<b>967</b>	<b>41</b>	<b>2358</b>

\*Excluded cases from Scotland

**Table 74: Worst axillary biopsy result for invasive cancer cases with a normal axillary ultrasound result**

Sub-region	C1/B1		C2/B2		C3/B3		C4/B4		C5/B5		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
East Midlands	0	0	2	100	0	0	0	0	0	0	2
East of England	1	50	1	50	0	0	0	0	0	0	2
London	3	12	12	48	0	0	2	8	8	32	25
N East, Yorks & Humber	0	0	4	80	0	0	0	0	1	20	5
North West	0	0	6	67	0	0	0	0	3	33	9
South Central	0	0	5	63	0	0	0	0	3	38	8
South East Coast	3	25	6	50	0	0	0	0	3	25	12
South West	3	23	7	54	0	0	0	0	3	23	13
West Midlands	1	14	3	43	0	0	1	14	2	29	7
Northern Ireland	3	9	29	85	0	0	0	0	2	6	34
Scotland	-	-	-	-	-	-	-	-	-	-	-
Wales	1	17	4	67	0	0	0	0	1	17	6
<b>United Kingdom</b>	<b>15</b>	<b>12</b>	<b>79</b>	<b>64</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>26</b>	<b>21</b>	<b>123</b>

\*Excluded cases from Scotland



**Table 75: Positive predictive value of the axillary biopsy results for invasive cancers with an abnormal or normal axillary ultrasound result**

Sub-region	C1/B1		C2/B2		C3/B3		C4/B4		C5/B5	
	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	2	25	14	15	0	0	0	-	64	97
East of England	2	14	17	19	0	-	0	-	54	96
London	5	38	20	19	1	100	4	80	59	82
N East, Yorks & Humber	5	22	45	18	2	25	3	75	111	98
North West	5	19	48	24	2	40	3	50	82	98
South Central	6	38	21	32	0	-	1	100	30	97
South East Coast	6	38	22	32	0	-	1	100	31	97
South West	8	29	25	28	1	50	2	100	57	80
West Midlands	6	27	13	21	2	50	4	80	63	97
Northern Ireland	1	25	14	20	0	0	0	-	22	100
Scotland	-	-	-	-	-	-	-	-	-	-
Wales	2	15	8	10	1	50	1	50	58	97
<b>United Kingdom</b>	<b>48</b>	<b>26</b>	<b>242</b>	<b>21</b>	<b>10</b>	<b>37</b>	<b>18</b>	<b>72</b>	<b>648</b>	<b>94</b>

\*Excluded cases from Scotland

\*Excluded cases with neo-adjuvant therapy

**Table 76: Positive predictivity for invasive cancers with positive nodal status\***

Sub-region	Total with positive nodal status	Had positive pre-op ax assessment	
		No	%
East Midlands	206	64	31
East of England	268	54	20
London	276	59	21
N East, Yorks & Humber	376	111	30
North West	343	82	24
South Central	260	31	12
South East Coast	266	47	18
South West	297	57	19
West Midlands	272	63	23
Northern Ireland	69	22	32
Scotland	-	-	-
Wales	159	58	36
<b>United Kingdom</b>	<b>2756</b>	<b>648</b>	<b>24</b>

\*Excluded cases from Scotland

\*Excluded cases with neo-adjuvant therapy

**Table 77: Nodal positivity for invasive cancers without neo-adjuvant therapy and without/with unknown pre-op axillary assessment**

Sub-region	Total without/unknown pre-op ax	Positive nodal status	
		No	%
East Midlands	956	126	13
East of England	1167	195	17
London	1185	187	16
N East, Yorks & Humber	1517	210	14
North West	1327	203	15
South Central	1035	200	19
South East Coast	1065	196	18
South West	1194	204	17
West Midlands	1125	184	16
Northern Ireland	231	32	14
Scotland	-	-	-
Wales	705	89	13
<b>United Kingdom</b>	<b>12194</b>	<b>1949</b>	<b>16</b>

\*Excluded cases with neo-adjuvant therapy

Sub-region	C1/B1		C2/B2		C3/B3		C4/B4		C5/B5		Invasive cases with positive nodal status
	No.	%	No.	%	No.	%	No.	%	No.	%	
East Midlands	2	1	14	7	0	0	0	0	64	31	206
East of England	2	1	17	6	0	0	0	0	54	20	268
London	5	2	20	7	1	0	4	1	59	21	276
N East, Yorks & Humber	5	1	45	12	2	1	3	1	111	30	376
North West	5	1	48	14	2	1	3	1	82	24	343
South Central	6	2	22	8	0	0	1	0	31	12	260
South East Coast	6	2	16	6	1	0	0	0	47	18	266
South West	8	3	25	8	1	0	2	1	57	19	297
West Midlands	6	2	13	5	2	1	4	1	63	23	272
Northern Ireland	1	1	14	20	0	0	0	0	22	32	69
Scotland	0	0	0	0	0	0	0	0	0	0	123
Wales	2	1	8	5	1	1	1	1	58	36	159
<b>United Kingdom</b>	<b>48</b>	<b>2</b>	<b>242</b>	<b>8</b>	<b>10</b>	<b>0</b>	<b>18</b>	<b>1</b>	<b>648</b>	<b>22</b>	<b>2915</b>

\*Excluded cases from Scotland

Sub-region	Total invasive cancers with surgery	Nodal status known		Nodes obtained but status unknown		No nodes obtained		Unknown if nodes obtained	
		No.	%	No.	%	No.	%	No.	%
East Midlands	1179	1176	100	0	0	3	0	0	0
East of England	1428	1405	98	0	0	22	2	1	0
London	1480	1466	99	0	0	14	1	0	0
N East, Yorks & Humber	1994	1966	99	0	0	28	1	0	0
North West	1721	1707	99	0	0	13	1	1	0
South Central	1213	1198	99	0	0	15	1	0	0
South East Coast	1244	1227	99	0	0	17	1	0	0
South West	1483	1470	99	0	0	13	1	0	0
West Midlands	1359	1354	100	0	0	5	0	0	0
Northern Ireland	332	331	100	0	0	1	0	0	0
Scotland	750	746	99	0	0	3	0	1	0
Wales	891	882	99	0	0	9	1	0	0
<b>United Kingdom</b>	<b>15074</b>	<b>14928</b>	<b>99</b>	<b>0</b>	<b>0</b>	<b>143</b>	<b>1</b>	<b>3</b>	<b>0.0</b>

Sub-region	With SLNB		Without SLNB		Unknown nodal procedure type		Total	
	No.	%	No.	%	No.	%	No.	%
East Midlands	1009	86	168	14	0	0	1177	100
East of England	1201	85	205	15	0	0	1406	100
London	1325	90	141	10	0	0	1466	100
N East, Yorks & Humber	1741	88	227	12	0	0	1968	100
North West	1563	91	146	9	0	0	1709	100
South Central	1105	92	94	8	0	0	1199	100
South East Coast	1102	90	126	10	0	0	1228	100
South West	1354	92	118	8	0	0	1472	100
West Midlands	1210	89	144	11	0	0	1354	100
Northern Ireland	301	91	30	9	0	0	331	100
Scotland	664	89	84	11	0	0	748	100
Wales	799	90	85	10	0	0	884	100
<b>United Kingdom</b>	<b>13374</b>	<b>90</b>	<b>1568</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>14942</b>	<b>100</b>

Sub-region	Total known nodal status	Positive		Negative	
		No.	%	No.	%
East Midlands	1176	232	20	944	80
East of England	1405	303	22	1102	78
London	1466	310	21	1156	79
N East, Yorks & Humber	1966	402	20	1564	80
North West	1707	367	21	1340	79
South Central	1198	287	24	911	76
South East Coast	1227	284	23	943	77
South West	1470	334	23	1136	77
West Midlands	1354	299	22	1055	78
Northern Ireland	331	70	21	261	79
Scotland	746	135	18	611	82
Wales	882	168	19	714	81
<b>United Kingdom</b>	<b>14928</b>	<b>3191</b>	<b>21</b>	<b>11737</b>	<b>79</b>

Sub-region	Total with axillary surgery	0 node obtained		1,2,3 nodes obtained		≥4nodes obtained		Unknown	
		No.	%	No.	%	No.	%	No.	%
East Midlands	168	0	0	0	0	168	100	0	0
East of England	205	0	0	11	5	194	95	0	0
London	141	0	0	13	9	128	91	0	0
N East, Yorks & Humber	227	0	0	13	6	214	94	0	0
North West	146	0	0	4	3	142	97	0	0
South Central	94	1	1	2	2	91	97	0	0
South East Coast	126	0	0	9	7	117	93	0	0
South West	118	1	1	7	6	110	93	0	0
West Midlands	144	0	0	5	3	139	97	0	0
Northern Ireland	30	0	0	1	3	29	97	0	0
Scotland	84	0	0	5	6	79	94	0	0
Wales	85	0	0	3	4	82	96	0	0
<b>United Kingdom</b>	<b>1568</b>	<b>2</b>	<b>0</b>	<b>73</b>	<b>5</b>	<b>1493</b>	<b>95</b>	<b>0</b>	<b>0</b>

Sub-region	With SLNB				Without SLNB			
	Positive		Negative		Positive		Negative	
	No.	%	No.	%	No.	%	No.	%
East Midlands	130	13	878	87	102	61	66	39
East of England	199	17	1000	83	104	51	102	50
London	196	15	1129	85	114	81	27	19
N East, Yorks & Humber	254	15	1485	85	148	65	79	35
North West	253	16	1308	84	114	78	32	22
South Central	227	21	878	79	60	64	33	35
South East Coast	204	19	897	81	80	63	46	37
South West	247	18	1106	82	87	74	30	25
West Midlands	207	17	1002	83	92	64	53	37
Northern Ireland	47	16	254	84	23	77	7	23
Scotland	85	13	577	87	50	60	34	40
Wales	97	12	700	88	71	84	14	16
<b>United Kingdom</b>	<b>2146</b>	<b>16</b>	<b>11214</b>	<b>84</b>	<b>1045</b>	<b>67</b>	<b>523</b>	<b>33</b>

**Table 84: Number of nodes obtained for invasive cancers with positive nodal status determined from SLNB**

Sub-region	1-<4 nodes obtained					4+ nodes obtained				
	1 Ax op		2+ Ax ops		Total	1 Ax op		2+ Ax ops		Total
	No.	%	No.	%		No.	%	No.	%	
East Midlands	56	100	0	0	56	11	15	63	85	74
East of England	51	100	0	0	51	33	22	115	78	148
London	69	99	1	1	70	33	26	93	74	126
N East, Yorks & Humber	115	100	0	0	115	50	36	89	64	139
North West	91	100	0	0	91	38	23	124	77	162
South Central	73	100	0	0	73	116	75	38	25	154
South East Coast	75	99	1	1	76	72	56	56	44	128
South West	98	100	0	0	98	69	46	80	54	149
West Midlands	77	100	0	0	77	41	32	89	68	130
Northern Ireland	6	100	0	0	6	6	15	35	85	41
Scotland	49	98	1	2	50	19	54	16	46	35
Wales	37	100	0	0	37	9	15	51	85	60
<b>United Kingdom</b>	<b>797</b>	<b>100</b>	<b>3</b>	<b>0</b>	<b>800</b>	<b>497</b>	<b>37</b>	<b>849</b>	<b>63</b>	<b>1346</b>

**Table 85: Status of invasive cases with <4 nodes obtained**

Sub-region	Total with nodes obtained	Nodal status determined on basis of <4 nodes		Positive sentinel procedure(s)		Positive (Other)		Negative sentinel procedure(s)		Negative (Other)		Unknown status	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
		East Midlands	1176	786	66.8	56	4.8	0	0.0	730	62	0	0.0
East of England	1405	835	59.4	51	3.6	1	0.1	772	55	11	0.8	0	0
London	1466	1030	70.3	70	4.8	1	0.1	947	65	12	0.8	0	0
N East, Yorks & Humber	1966	1372	69.8	115	5.8	2	0.1	1244	63	11	0.6	0	0
North West	1707	1260	73.8	91	5.3	1	0.1	1165	68	3	0.2	0	0
South Central	1198	847	70.7	73	6.1	0	0.0	772	64	2	0.2	0	0
South East Coast	1227	852	69.4	76	6.2	1	0.1	767	63	8	0.7	0	0
South West	1470	1078	73.3	98	6.7	2	0.1	973	66	5	0.3	0	0
West Midlands	1354	917	67.7	77	5.7	0	0.0	834	62	6	0.4	0	0
Northern Ireland	331	211	63.7	6	1.8	1	0.3	204	62	0	0.0	0	0
Scotland	746	531	71.2	50	6.7	0	0.0	476	64	5	0.7	0	0
Wales	882	654	74.1	37	4.2	0	0.0	614	70	3	0.3	0	0
<b>United Kingdom</b>	<b>14928</b>	<b>10373</b>	<b>69</b>	<b>800</b>	<b>5.4</b>	<b>9</b>	<b>0.1</b>	<b>9498</b>	<b>64</b>	<b>66</b>	<b>0.4</b>	<b>0</b>	<b>0</b>

**Table 86: Availability of lymph node status for surgically treated non-invasive cancers**

Sub-region	Total non-invasive cancers	Nodal status known		Nodes obtained but status unknown		No nodes obtained		Unknown if nodes obtained	
		No.	%	No.	%	No.	%	No.	%
		East Midlands	302	96	32	0	0	206	68
East of England	339	93	27	0	0	246	73	0	0
London	453	124	27	0	0	329	73	0	0
N East, Yorks & Humber	484	126	26	0	0	358	74	0	0
North West	482	133	28	0	0	349	72	0	0
South Central	349	79	23	0	0	270	77	0	0
South East Coast	337	68	20	0	0	269	80	0	0
South West	382	101	26	0	0	281	74	0	0
West Midlands	388	107	28	0	0	281	72	0	0
Northern Ireland	46	8	17	0	0	38	83	0	0
Scotland	164	21	13	0	0	143	87	0	0
Wales	221	56	25	0	0	165	75	0	0
<b>United Kingdom</b>	<b>3947</b>	<b>1012</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>2935</b>	<b>74</b>	<b>0</b>	<b>0</b>

Sub-region	Conservation with known nodal status		Total Conservation	Mastectomy with known nodal status		Total mastectomy
	No.	%		No.	%	
East Midlands	9	4	210	87	95	92
East of England	32	12	262	61	79	77
London	24	7	340	100	88	113
N East, Yorks & Humber	25	7	370	101	89	114
North West	18	5	361	115	95	121
South Central	10	4	276	69	95	73
South East Coast	13	5	275	55	89	62
South West	19	7	292	82	91	90
West Midlands	24	8	295	83	89	93
Northern Ireland	0	0	36	8	80	10
Scotland	2	1	142	19	86	22
Wales	15	9	172	41	84	49
<b>United Kingdom</b>	<b>191</b>	<b>6</b>	<b>3031</b>	<b>821</b>	<b>90</b>	<b>916</b>

Sub-region	Total known nodal status	Positive		Negative	
		No.	%	No.	%
East Midlands	96	0	0	96	100
East of England	93	0	0	93	100
London	124	2	2	122	98
N East, Yorks & Humber	126	1	1	125	99
North West	133	2	2	131	98
South Central	79	3	4	76	96
South East Coast	68	2	3	66	97
South West	101	4	4	97	96
West Midlands	107	3	3	104	97
Northern Ireland	8	0	0	8	100
Scotland	21	0	0	21	100
Wales	56	0	0	56	100
<b>United Kingdom</b>	<b>1012</b>	<b>17</b>	<b>2</b>	<b>995</b>	<b>98</b>

Sub-region	With SLNB		Without SLNB								Total with mastectomy	Total known nodal status	% determined on basis of SLNB
			Ax sampling		Ax clearance		Unknown procedure		No intended Ax procedure				
	No.	%	No.	%	No.	%	No.	%	No.	%			
East Midlands	83	90	4	4	0	0.0	0	0.0	0	0.0	92	87	95
East of England	50	65	4	5	4	5.2	0	0.0	3	3.9	77	61	82
London	93	82	4	4	3	2.7	0	0.0	0	0.0	113	100	93
N East, Yorks & Humber	90	79	9	8	0	0.0	0	0.0	2	1.8	114	101	89
North West	114	94	0	0	0	0.0	0	0.0	1	0.8	121	115	99
South Central	67	92	2	3	0	0.0	0	0.0	0	0.0	73	69	97
South East Coast	53	85	2	3	0	0.0	0	0.0	0	0.0	62	55	96
South West	78	87	3	3	0	0.0	0	0.0	1	1.1	90	82	95
West Midlands	77	83	4	4	2	2.2	0	0.0	0	0.0	93	83	93
Northern Ireland	8	80	0	0	0	0.0	0	0.0	0	0.0	10	8	100
Scotland	18	82	1	5	0	0.0	0	0.0	0	0.0	22	19	95
Wales	40	82	0	0	1	2.0	0	0.0	0	0.0	49	41	98
<b>United Kingdom</b>	<b>771</b>	<b>84</b>	<b>33</b>	<b>4</b>	<b>10</b>	<b>1.1</b>	<b>0</b>	<b>0.0</b>	<b>7</b>	<b>0.8</b>	<b>916</b>	<b>821</b>	<b>94</b>

Sub-region	With SLNB		Without SLNB								Total with BCS	Total known nodal status	% determined on basis of SLNB
			Ax sampling		Ax clearance		Unknown procedure		No intended Ax procedure				
	No.	%	No.	%	No.	%	No.	%	No.	%			
East Midlands	8	4	0	0	0	0.0	0	0.0	1	0.5	210	9	89
East of England	32	12	0	0	0	0.0	0	0.0	0	0.0	262	32	100
London	24	7	0	0	0	0.0	0	0.0	0	0.0	340	24	100
N East, Yorks & Humber	23	6	1	0	0	0.0	0	0.0	1	0.3	370	25	92
North West	18	5	0	0	0	0.0	0	0.0	0	0.0	361	18	100
South Central	10	4	0	0	0	0.0	0	0.0	0	0.0	276	10	100
South East Coast	13	5	0	0	0	0.0	0	0.0	0	0.0	275	13	100
South West	19	7	0	0	0	0.0	0	0.0	0	0.0	292	19	100
West Midlands	21	7	2	1	0	0.0	0	0.0	1	0.3	295	24	88
Northern Ireland	0	0	0	0	0	0.0	0	0.0	0	0.0	36	0	-
Scotland	2	1	0	0	0	0.0	0	0.0	0	0.0	142	2	100
Wales	14	8	0	0	0	0.0	0	0.0	1	0.6	172	15	93
<b>United Kingdom</b>	<b>184</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>4</b>	<b>0.1</b>	<b>3031</b>	<b>191</b>	<b>96</b>

Sub-region	Total known nodal status	Conservation			Mastectomy		
		Mean	Median	Maximum	Mean	Median	Maximum
		East Midlands	96	2	2	3	2
East of England	93	2	2	8	3	3	17
London	124	2	2	4	3	2	20
N East, Yorks & Humber	126	2	2	6	2	2	13
North West	133	2	2	3	2	2	8
South Central	79	2	2.5	4	2	2	8
South East Coast	68	2	2	5	3	2	9
South West	101	2	2	3	2	2	8
West Midlands	107	2	2	4	3	3	15
Northern Ireland	8	-	-	0	2	3	4
Scotland	21	3	2.5	4	2	2	6
Wales	56	1	1	4	3	2	30
<b>United Kingdom</b>	<b>1012</b>	<b>2</b>	<b>2</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>30</b>

Sub-region	B5b						C5 only						B5a					
	Total B5b	% had Ax	Ax in 1st op		Ax in later op		Total C5	% had Ax	Ax in 1st op		Ax in later op		Total B5a	% had Ax	Ax in 1st op		Ax in later op	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
East Midlands	1108	100	1107	100	0	0	0	-	0	-	0	-	54	100	32	59	22	41
East of England	1335	99	1323	99	3	0	1	100	1	100	0	0	70	84	28	40	31	44
London	1369	100	1363	100	2	0	0	-	0	-	0	-	82	90	39	48	35	43
N East, Yorks & Humber	1862	99	1850	99	0	0	4	100	4	100	0	0	108	92	51	47	48	44
North West	1625	100	1617	100	0	0	0	-	0	-	0	-	77	96	26	34	48	62
South Central	1132	99	1119	99	2	0	0	-	0	-	0	-	60	98	25	42	34	57
South East Coast	1167	99	1160	99	1	0	0	-	0	-	0	-	60	92	26	43	29	48
South West	1395	100	1387	99	2	0	3	100	3	100	0	0	66	92	27	41	34	52
West Midlands	1270	100	1267	100	1	0	0	-	0	-	0	-	66	95	38	58	25	38
Northern Ireland	315	100	315	100	0	0	3	67	2	67	0	0	12	100	8	67	4	33
Scotland	710	100	700	99	9	1	1	100	1	100	0	0	33	97	24	73	8	24
Wales	835	100	832	100	0	0	0	-	0	-	0	-	49	94	22	45	24	49
<b>United Kingdom</b>	<b>14123</b>	<b>100</b>	<b>14040</b>	<b>99</b>	<b>20</b>	<b>0</b>	<b>12</b>	<b>92</b>	<b>11</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>737</b>	<b>93</b>	<b>346</b>	<b>47</b>	<b>342</b>	<b>46</b>

**Table 93: First axillary operation type for invasive cancers with positive nodal status and repeat axillary operations**

Sub-region	SLNB at 1st Ax op		No SLNB at 1st Ax op		Total node positive invasive	Total with repeat Ax op	% repeat Ax op after SLNB
	No	%	No	%			
East Midlands	60	26	10	4	232	70	86
East of England	114	38	11	4	303	125	91
London	94	30	1	0	310	95	99
N East, Yorks & Humber	87	22	2	0	402	89	98
North West	123	34	2	1	367	125	98
South Central	37	13	1	0	287	38	97
South East Coast	57	20	1	0	284	58	98
South West	79	24	4	1	334	83	95
West Midlands	89	30	7	2	299	96	93
Northern Ireland	35	50	0	0	70	35	100
Scotland	16	12	3	2	135	19	84
Wales	50	30	1	1	168	51	98
<b>United Kingdom</b>	<b>841</b>	<b>26</b>	<b>43</b>	<b>1</b>	<b>3191</b>	<b>884</b>	<b>95</b>