



NHSBSP/ABS Audit of Screen-Detected Breast Cancers 1 April 2008 to 31 March 2009 and BCCOM Data

ABS at BASO Conference
York Racecourse
19 & 20 May 2010



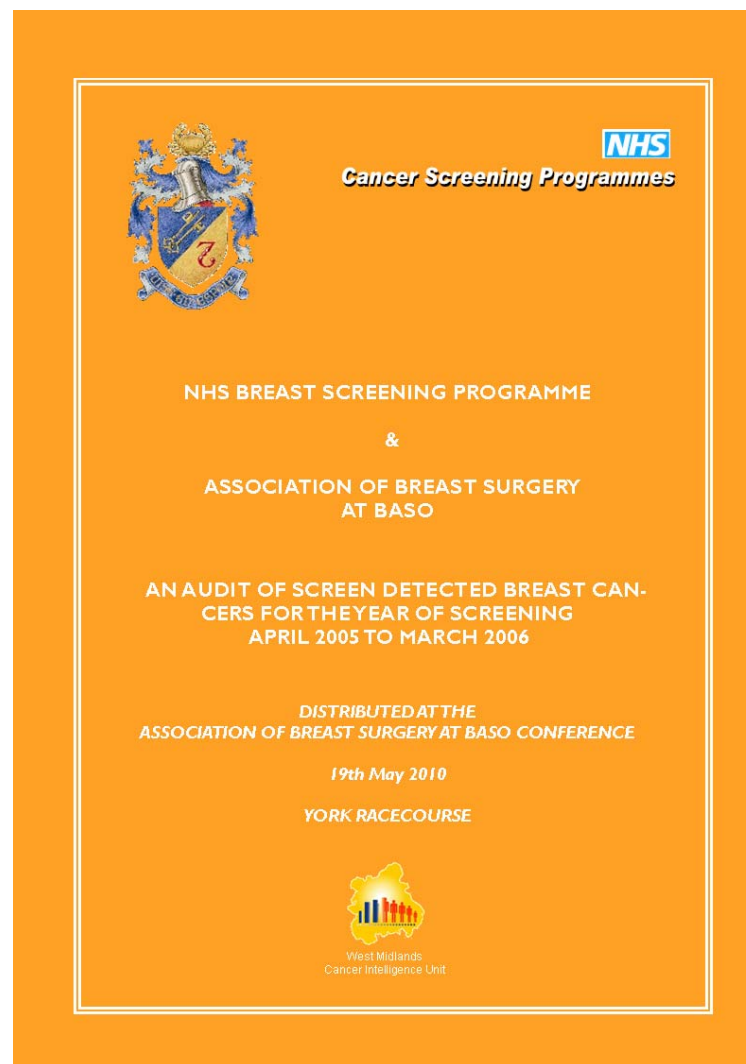
Dr Gill Lawrence
on behalf of the NHSBSP/ABS Audit
and BCCOM Steering Groups

Commentator:
Professor Michael Kerin

BREAST CANCER
BREAKTHROUGH



NHSBSP/ABS Audit Booklet





NHSBSP/ABS Audit 2008/09 Background Information

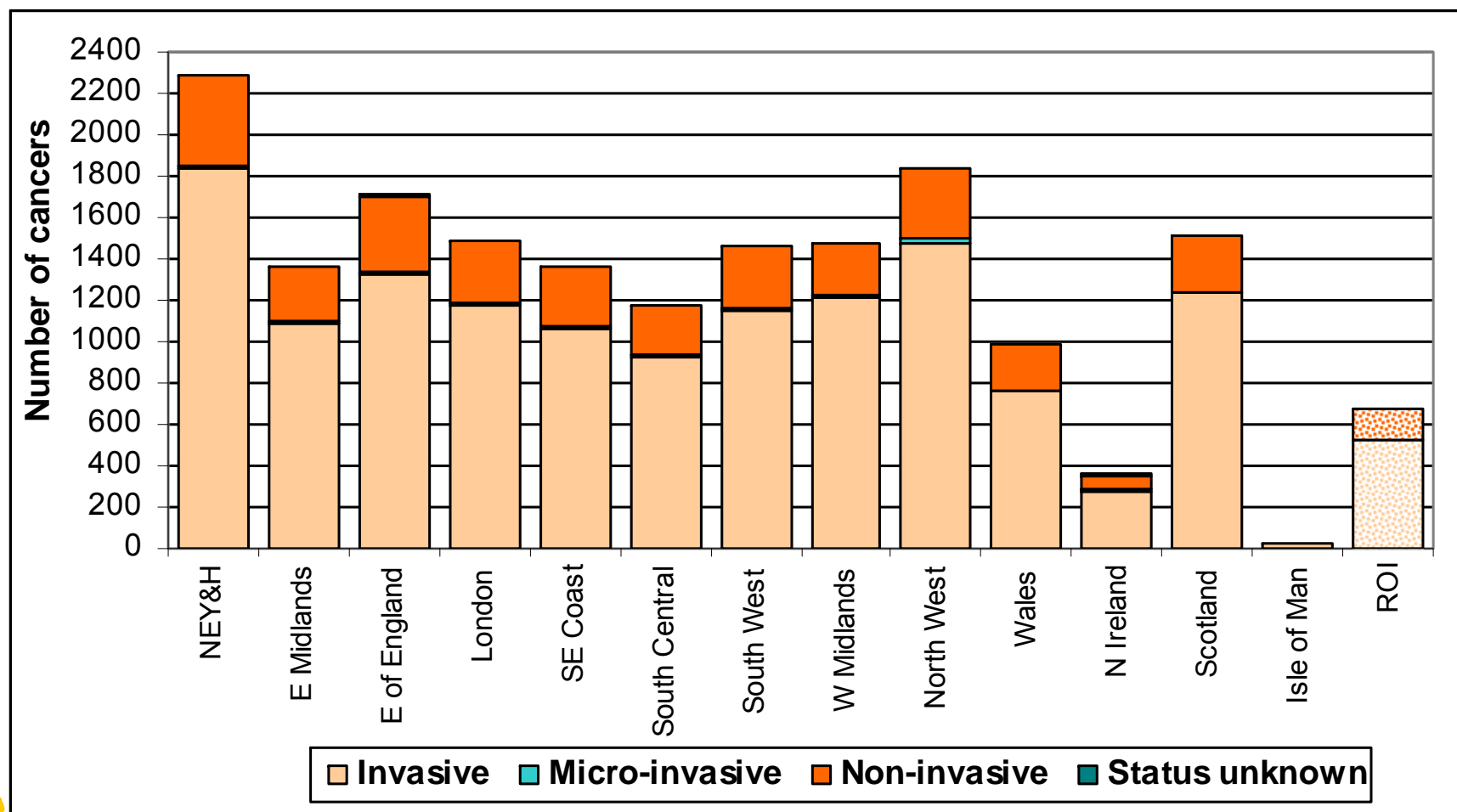


NHSBSP 2008/09

- 2,116,588 women screened
- 17,045 cancers detected
 - 13,532 (79%) invasive
 - 3,351 (20%) non-invasive
 - 140 (1%) micro-invasive
 - 22 cancers unknown invasive status
- Cancer detection rate
 - Overall 8.1 per 1,000 women screened
 - Invasive 6.4 per 1,000 women screened
 - Non-invasive 1.6 per 1,000 women screened
- Age distribution
 - 50-64 years = 67%
 - 65-70 years = 25% (13% in 2002/03)
 - 71-75 = 4%



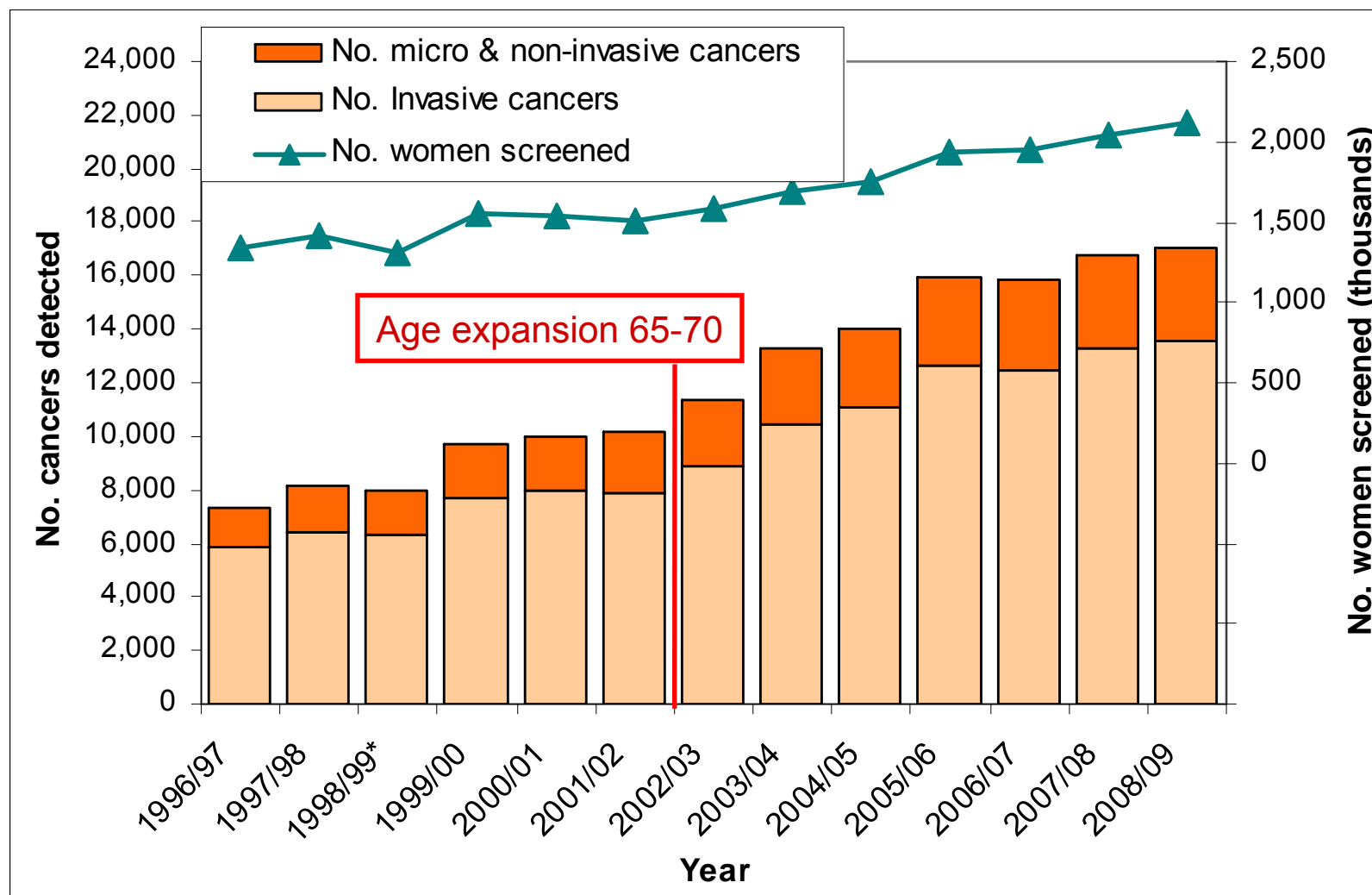
Cancers detected in each region/country in 2008/09



The Isle of Man contributed data for the first time in 2008/09



Cancers detected and women screened – changes over time

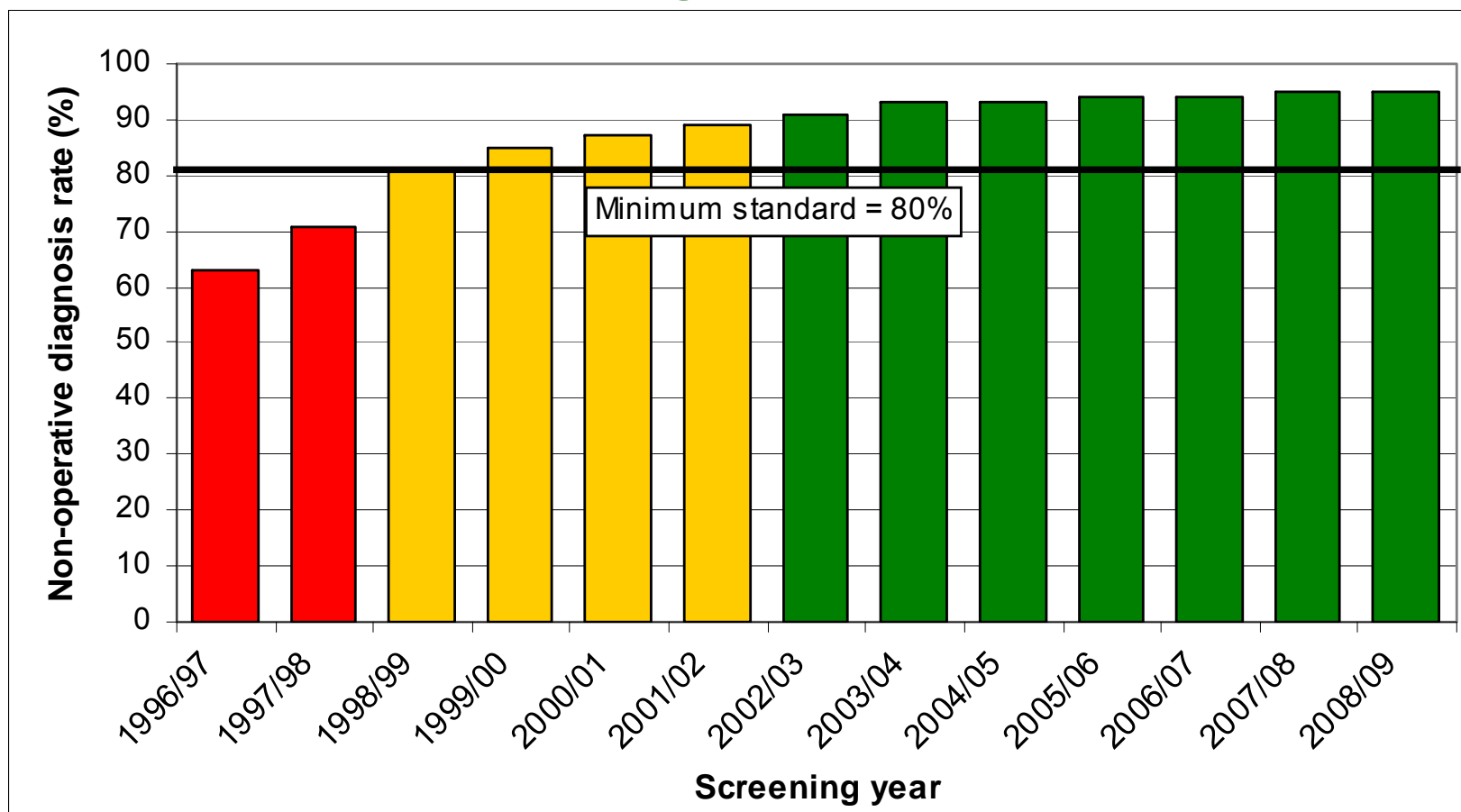




Non-operative Diagnosis



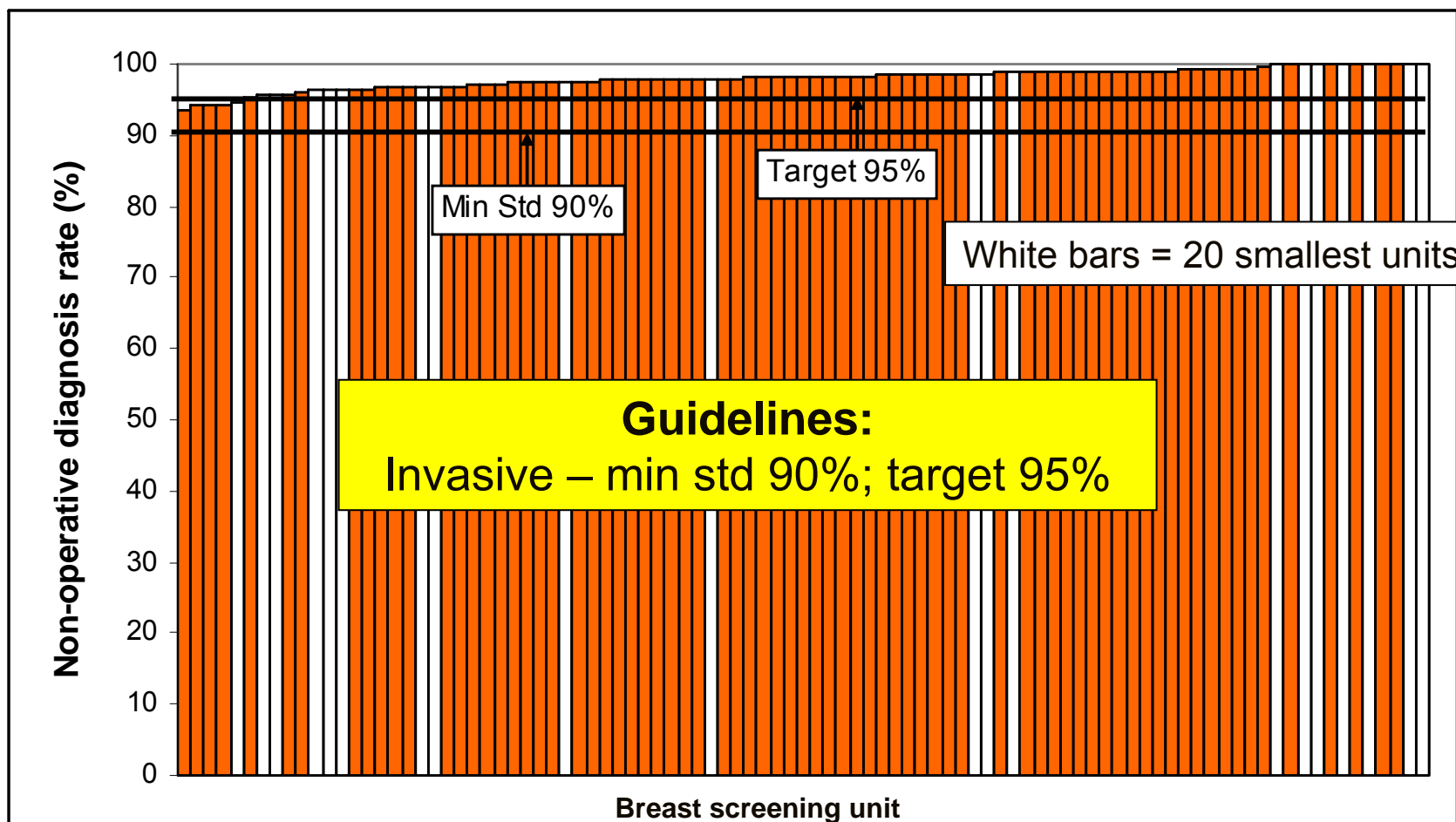
Increases in overall non-operative diagnosis with time



1996/97 B5 only = 17% Overall non-operative diagnosis = 63%
 2008/09 B5 only = 87% Overall non-operative diagnosis = 95%



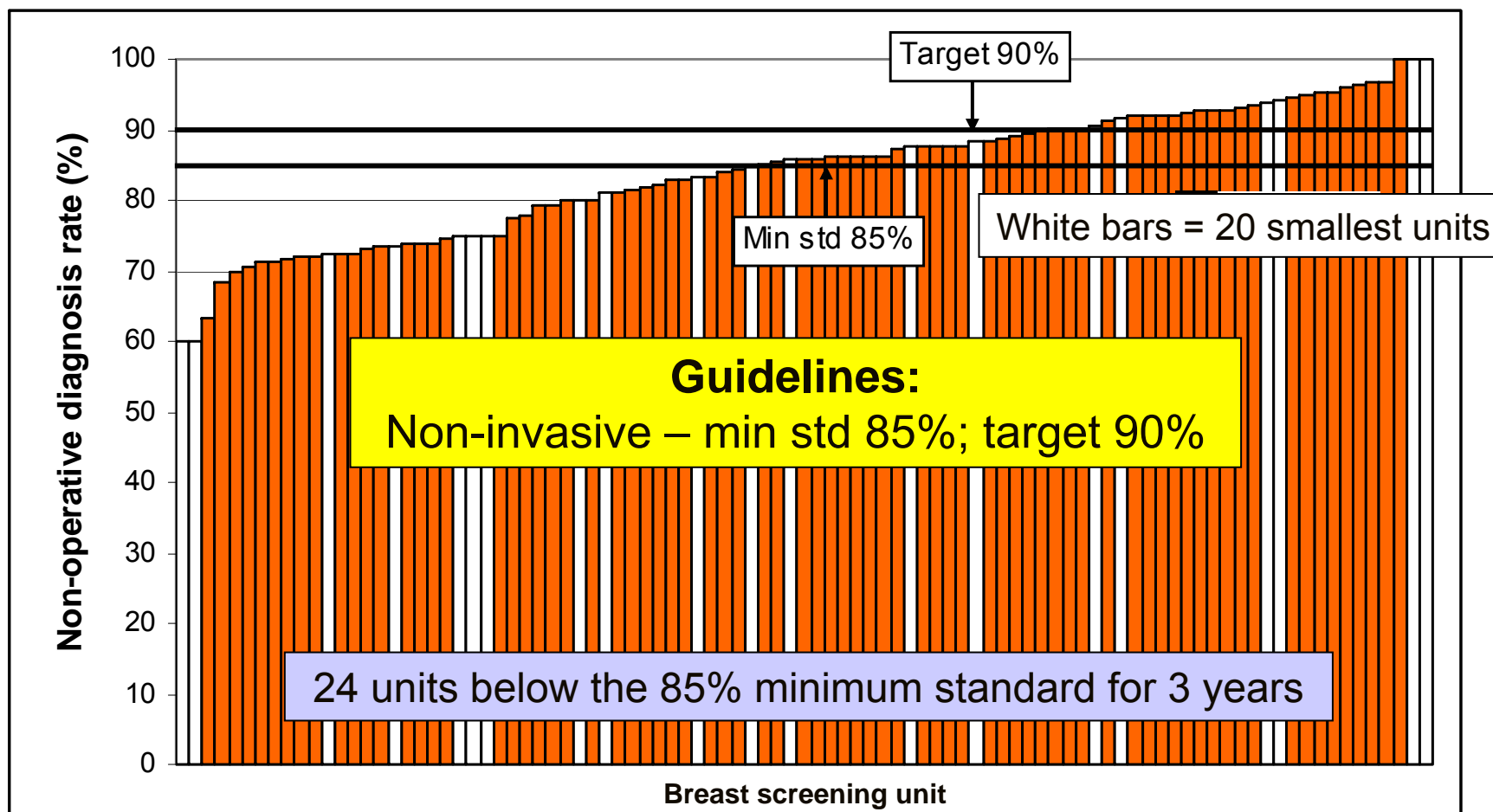
Non-operative diagnosis rates - invasive cancers



All units meet 90% minimum standard. 5 units below the 95% target



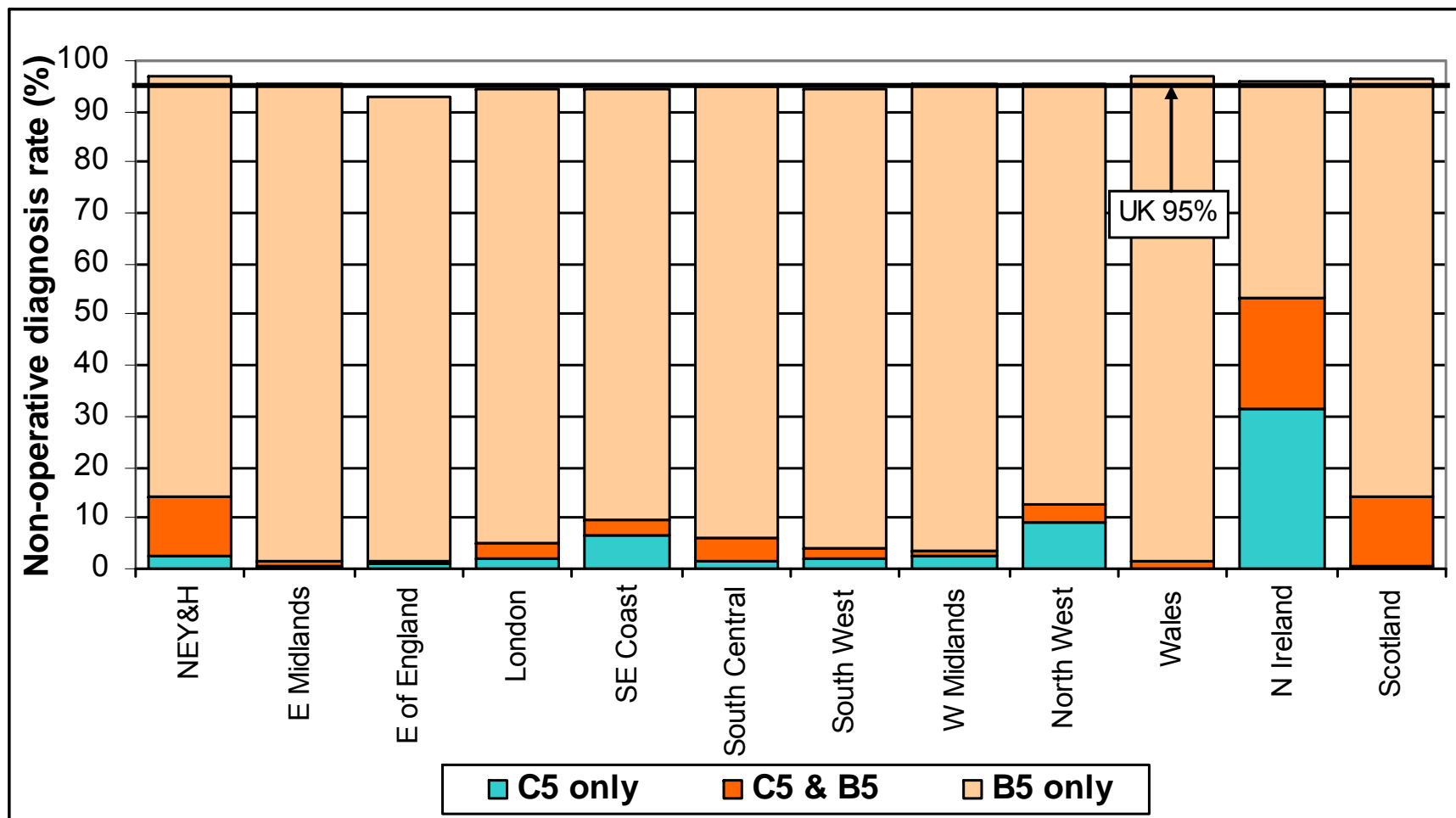
Non-operative diagnosis rates - non-invasive cancers



44 units below the 85% minimum standard; 65 units below the 90% target



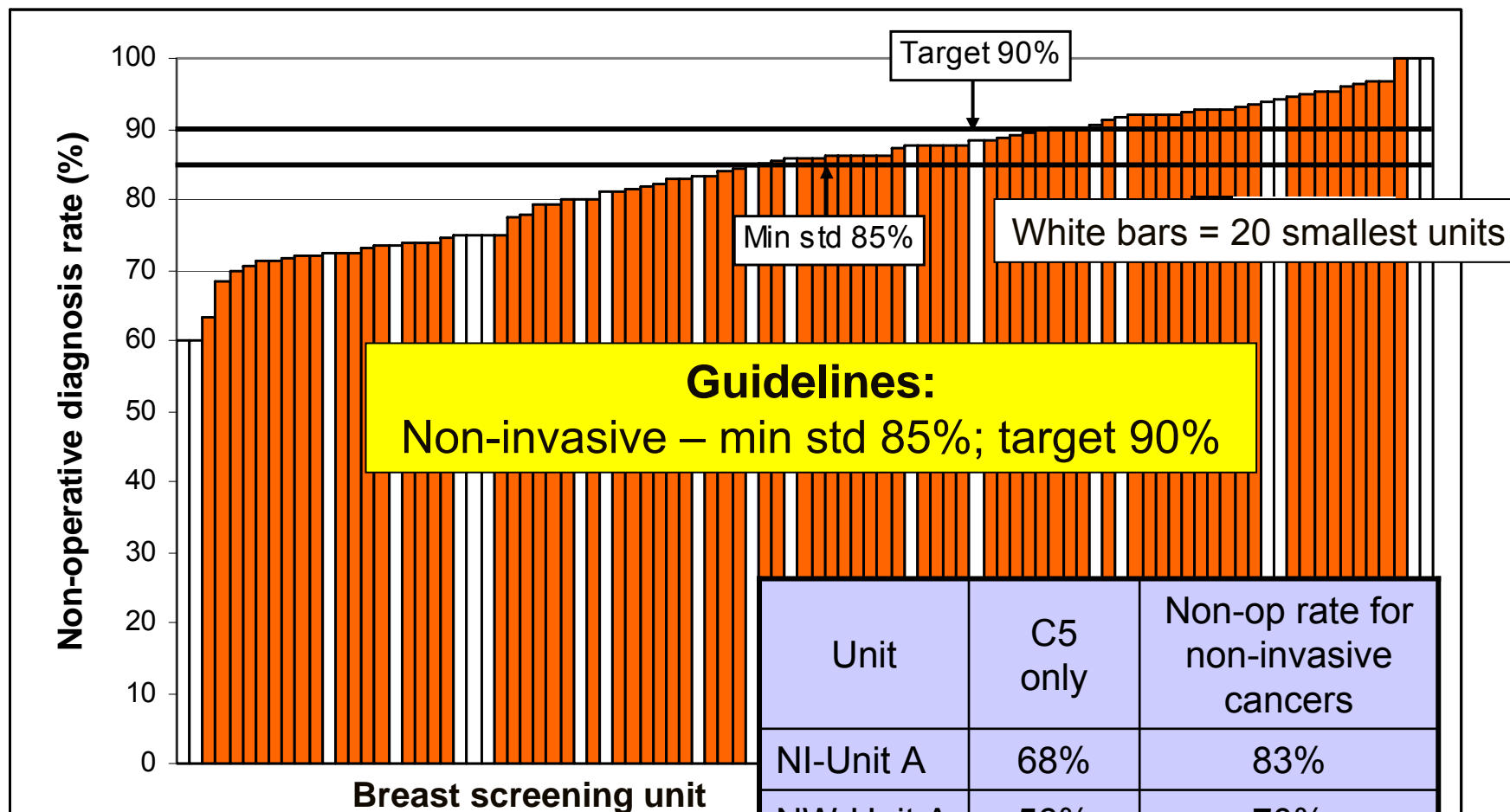
Non-operative diagnosis method



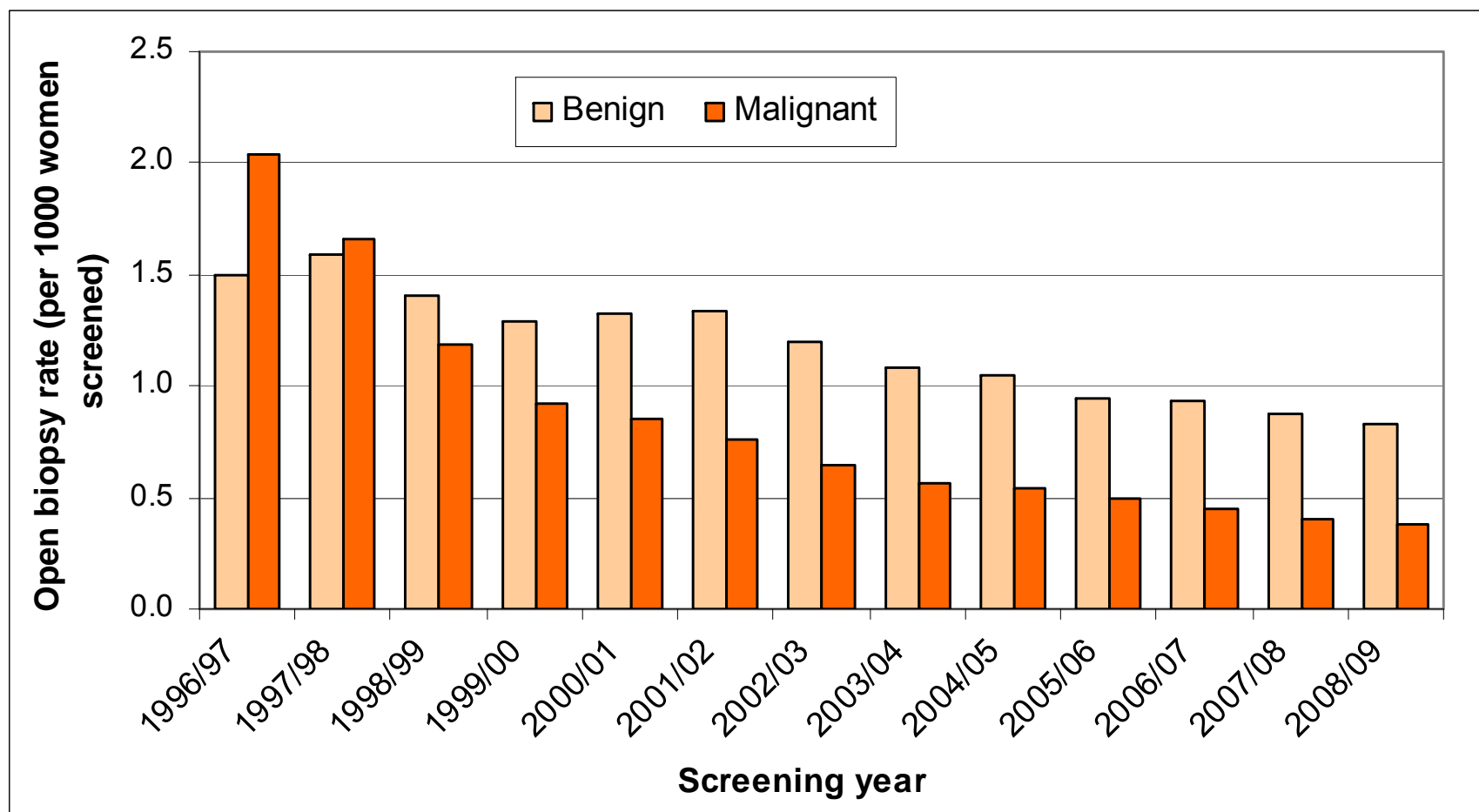
C5 only: 1 unit in N Ireland (68%) and 2 units in North West (56% and 45%)



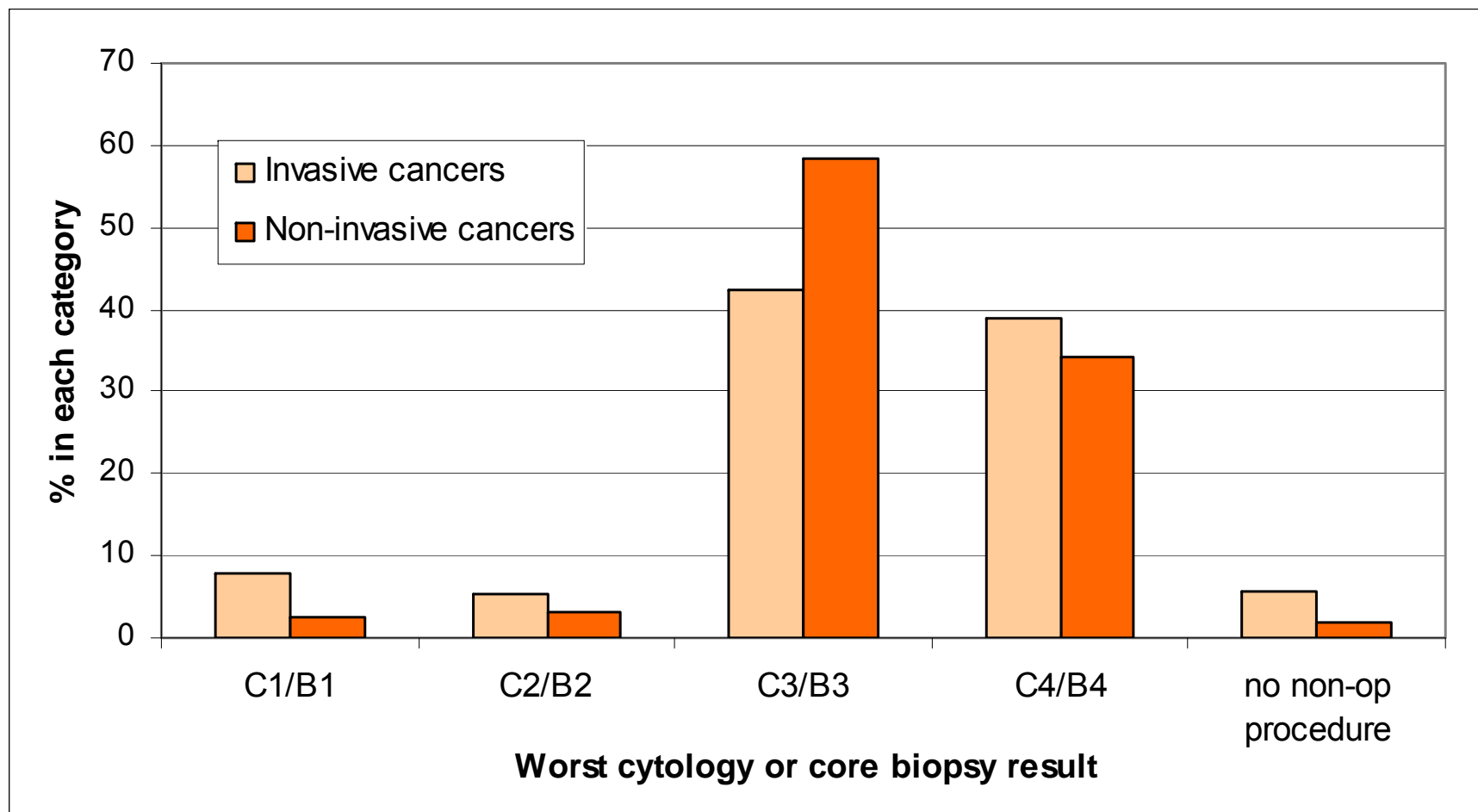
Non-operative diagnosis rates - non-invasive cancers



Benign and malignant open biopsies



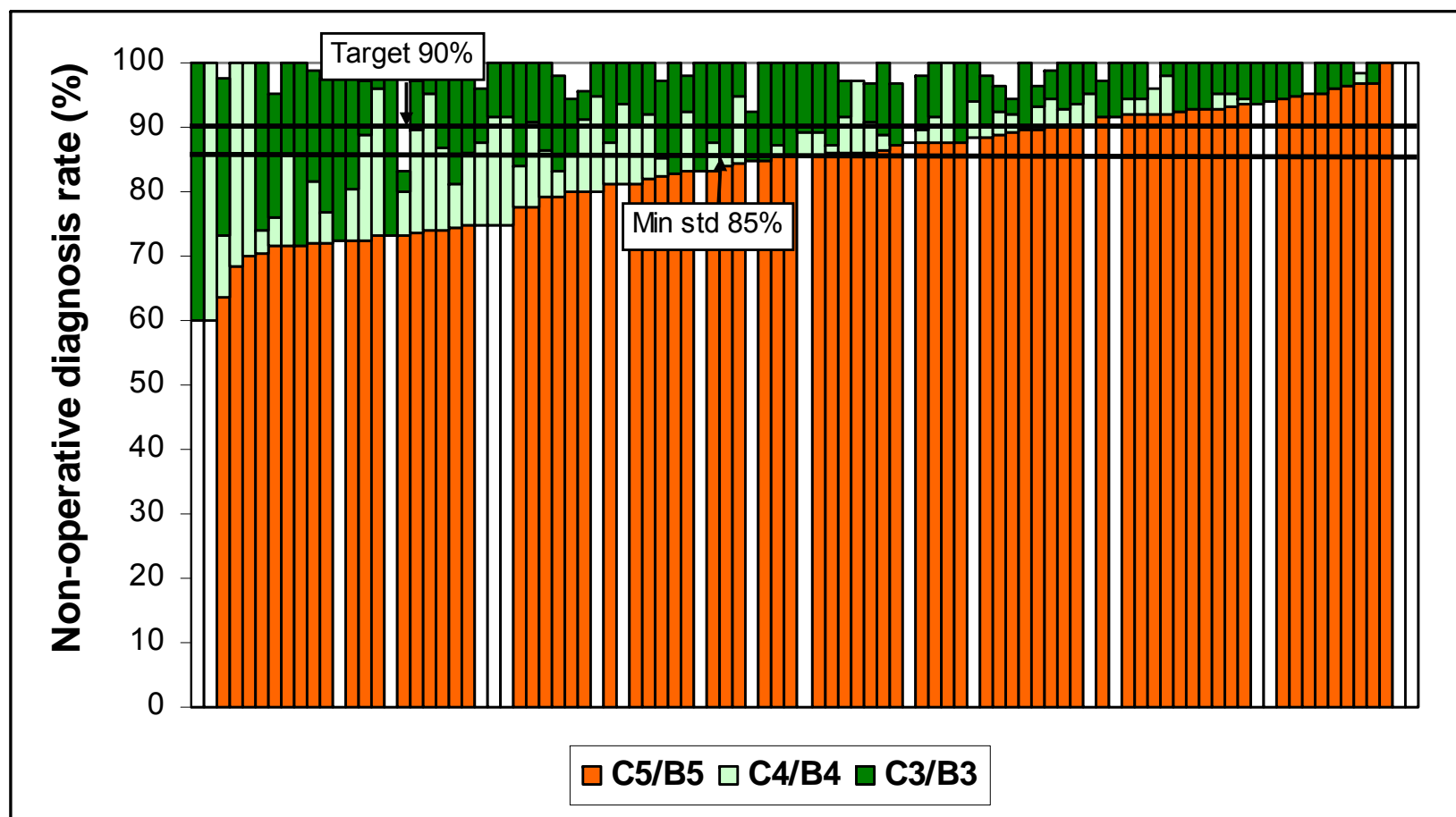
Malignant open biopsies in 2008/09



The majority of malignant open biopsies had a C3/B3 or C4/B4 non-operative cytology/biopsy result



Non-operative diagnosis rates - non-invasive cancers



What is the contribution of lobular neoplasia on core biopsy?

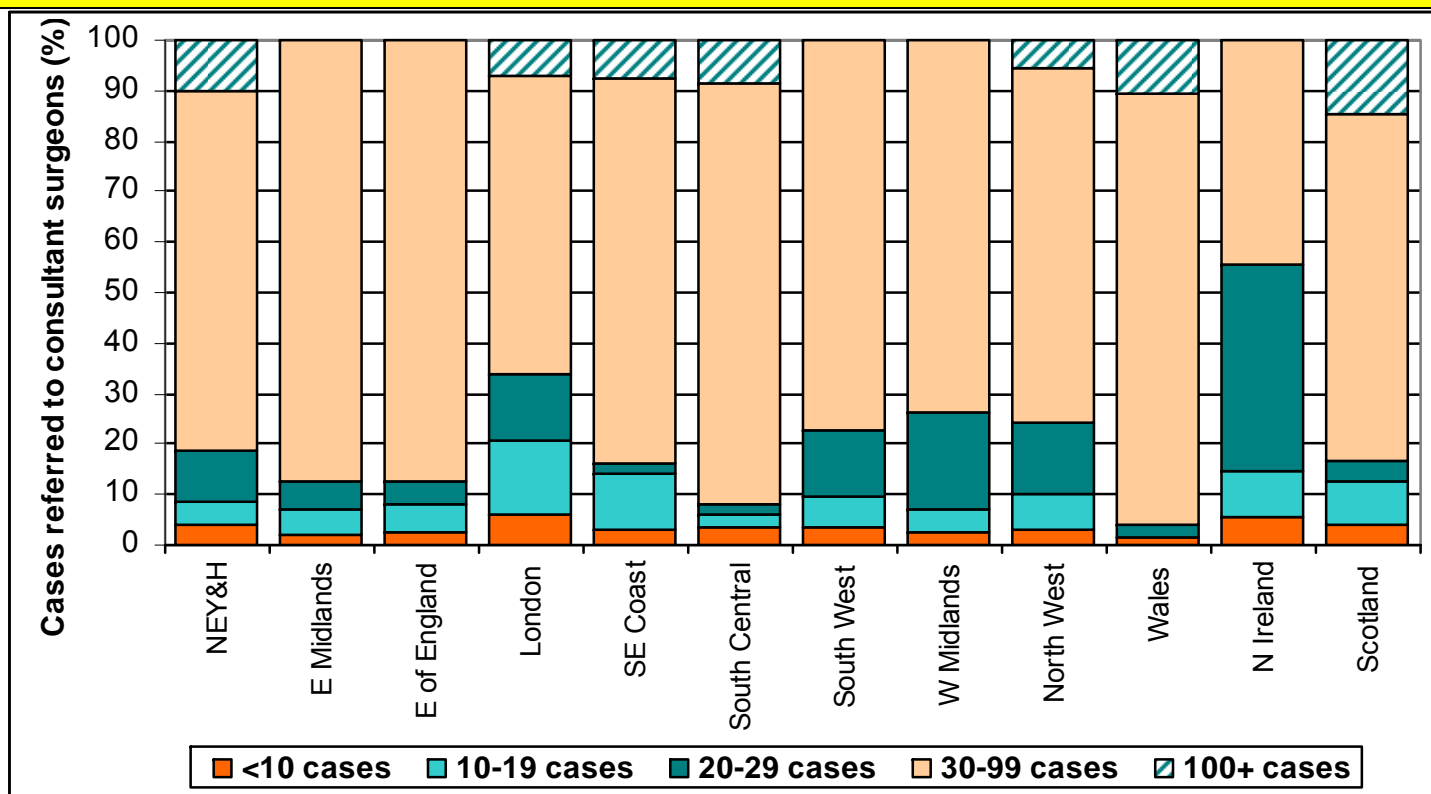


Surgery Caseload



Women treated by surgeons with differing screening caseloads 2008/09

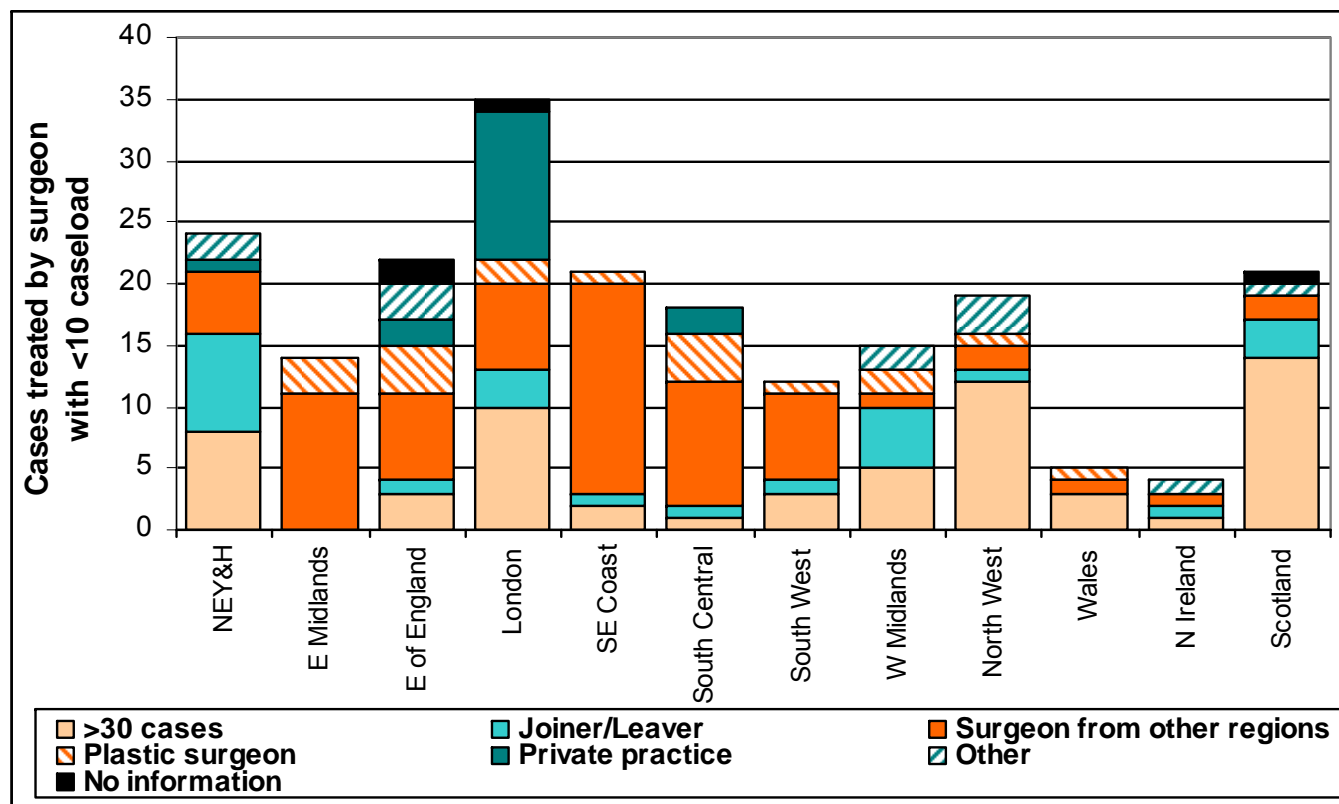
Guidelines: Each surgeon involved in the NHSBSP should maintain a surgical caseload of at least 10 screen-detected cancers per year, averaged over a 3 year period



In 2008/09, 466 women (3%) were treated by a surgeon with a screening caseload of less than 10 cases



Reasons provided by surgeons with caseloads <10 per year



Of the 149 surgeons with a screening caseload of <10 cases:
55 had 30+ symptomatic cases
 20 joined/left NHSBSP in 2008/09
 14 were in private practice (12 in London)





Surgery

Mastectomy rates

Immediate reconstruction



Invasive cancer treatment

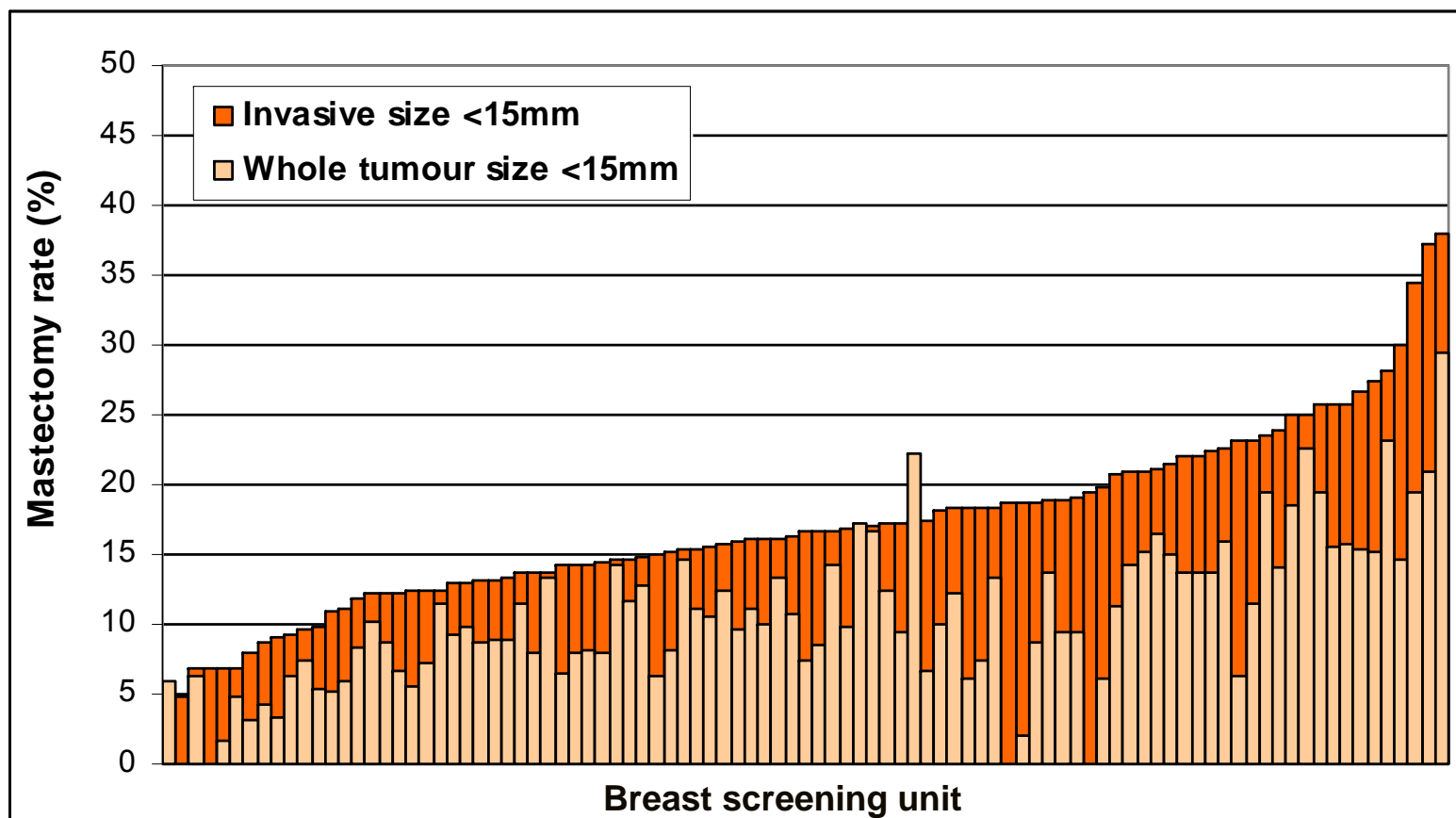
Tumour size and mastectomy rate

Size	Invasive tumour size		Whole tumour size for cancers with invasive component <15mm		Difference in Mx rate
	No.	Mx rate (%)	No.	Mx rate (%)	
<15mm	1,213	17	551	11	0
15-≤20mm	730	23	154	20	+9%
>20-≤35mm	910	40	216	34	+13%
>35-≤50mm	349	73	127	61	+50%
>50mm	219	93	134	90	+79%

The presence of *in situ* disease which extends beyond the invasive lesion accounts for a proportion of the cancers with treated with a mastectomy



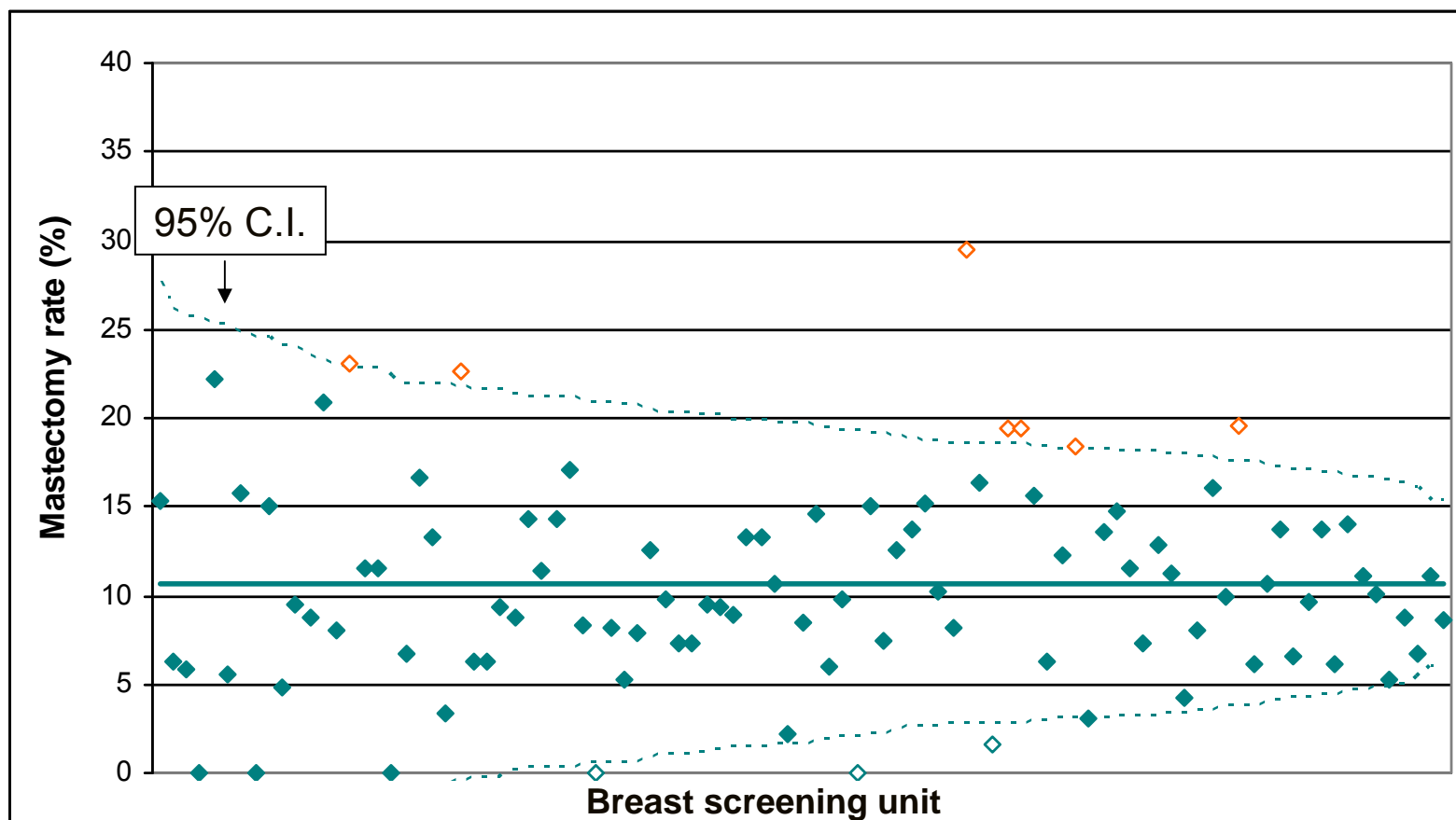
Mastectomy rates for small (<15mm) invasive cancers



Overall 17% of cancers with invasive size <15mm and 11% of cancers with whole size <15mm had a mastectomy



Mastectomy rates for small <15mm whole size invasive cancers

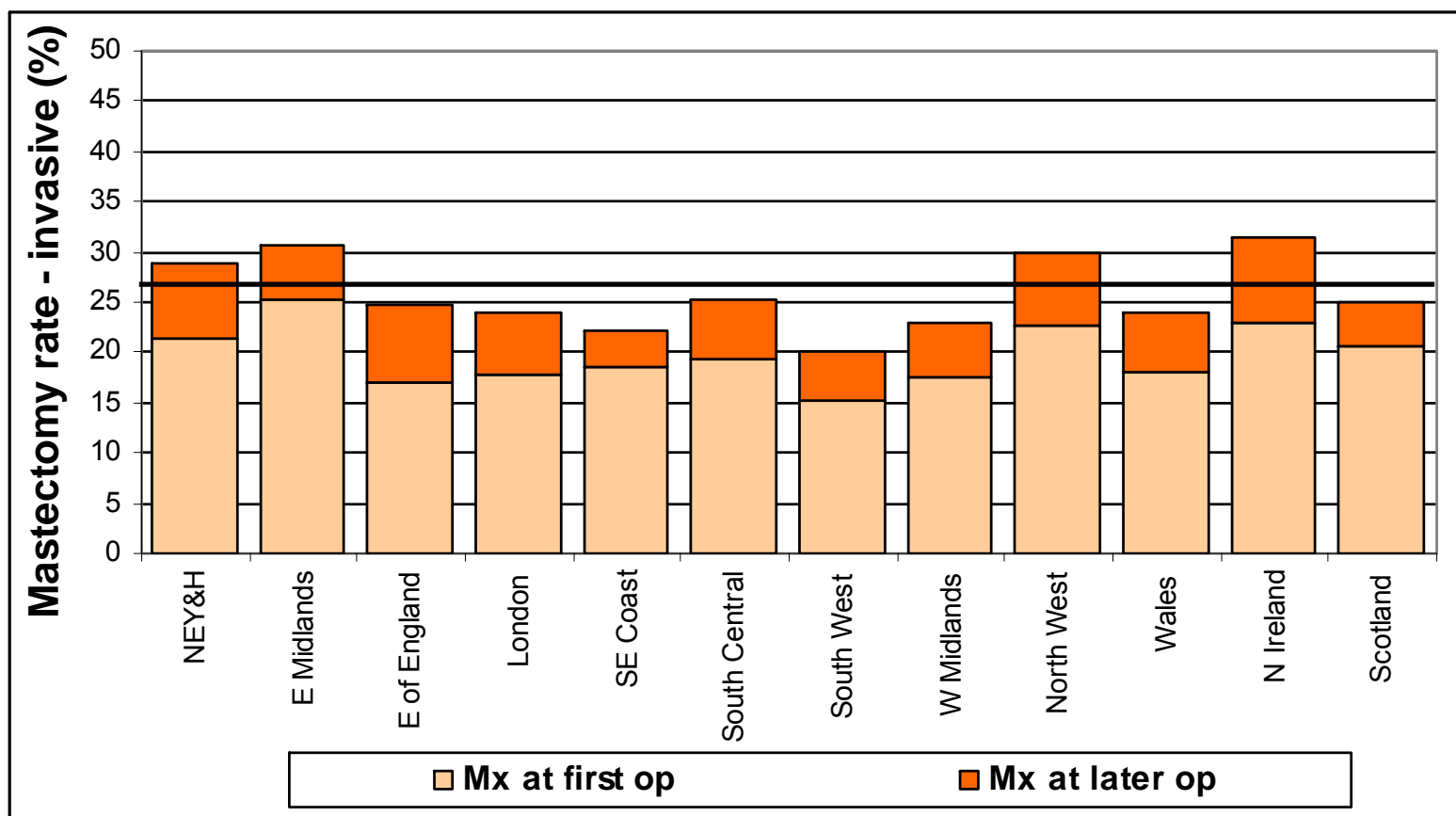


7 units lie above the upper control limit and 3 units lie below the lower control limit

2 units have been high outliers for last 3 years



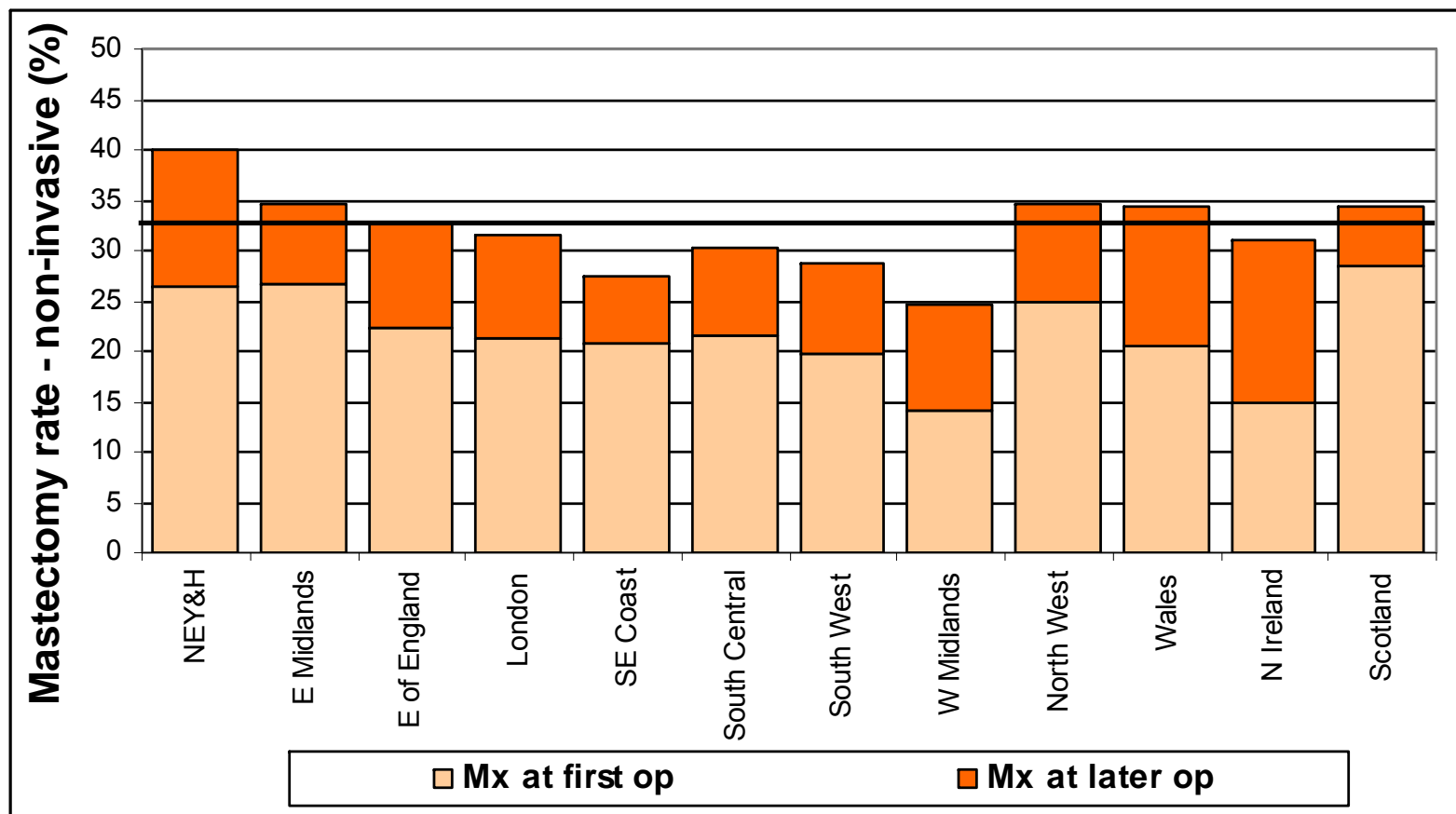
Mastectomy rates for invasive cancers with a non-operative diagnosis



Overall UK mastectomy rate = 26%
 First operation = 20% Second operation = 6%



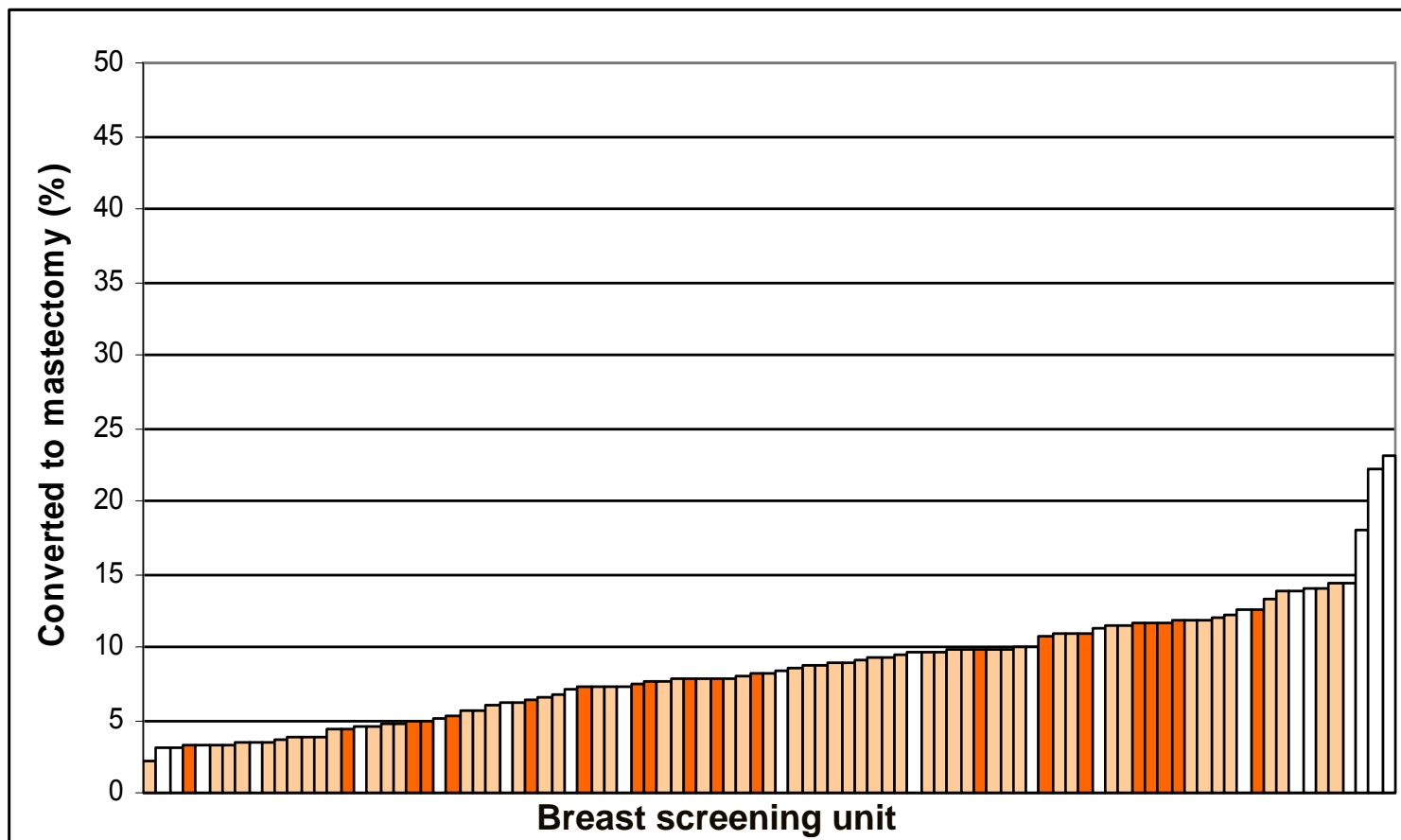
Mastectomy rates for non-invasive cancers with a non-operative diagnosis



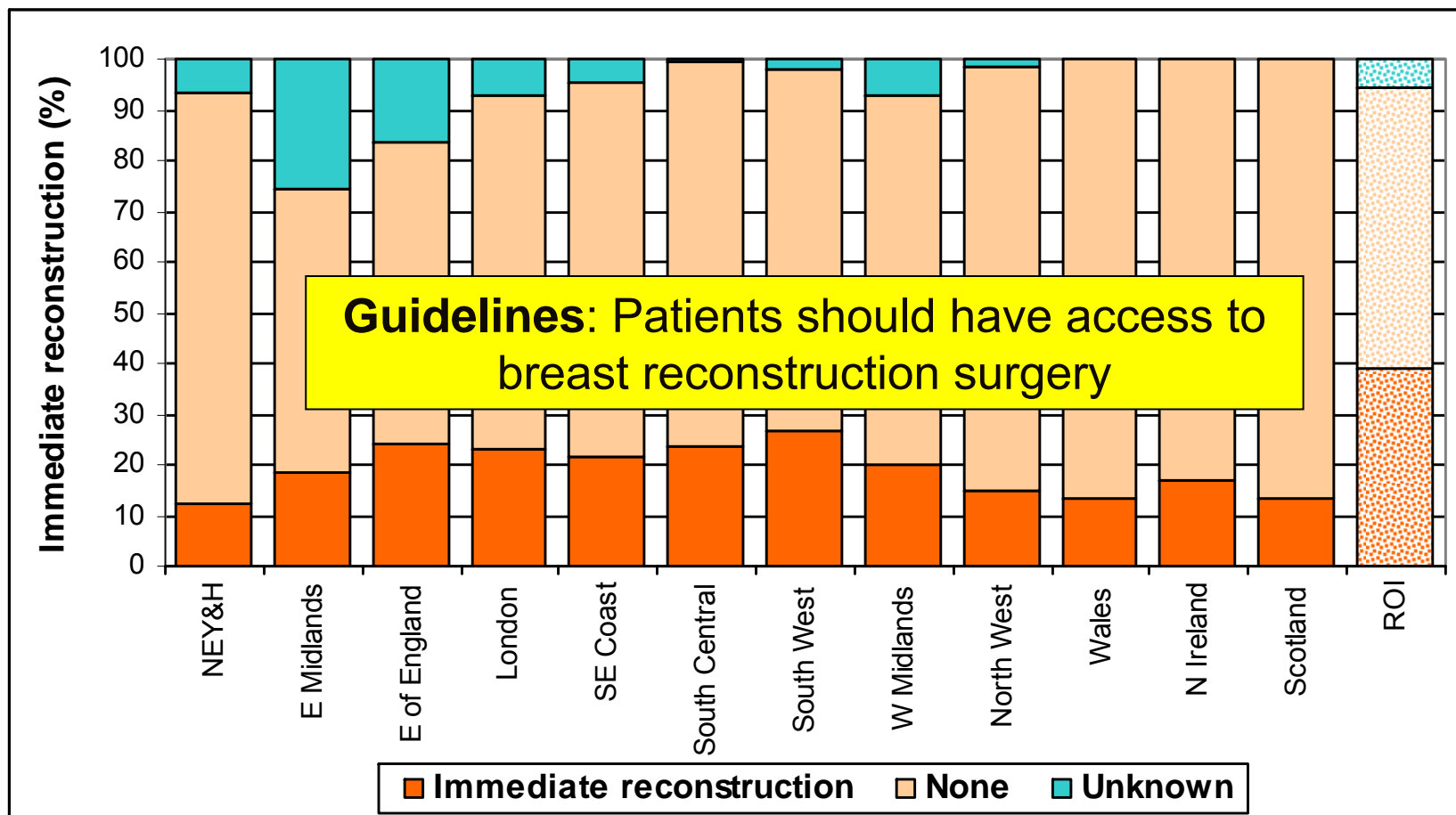
Overall UK mastectomy rate = 33%
 First operation = 23% Second operation = 10%



Cancers initially treated with BCS and then converted to mastectomy



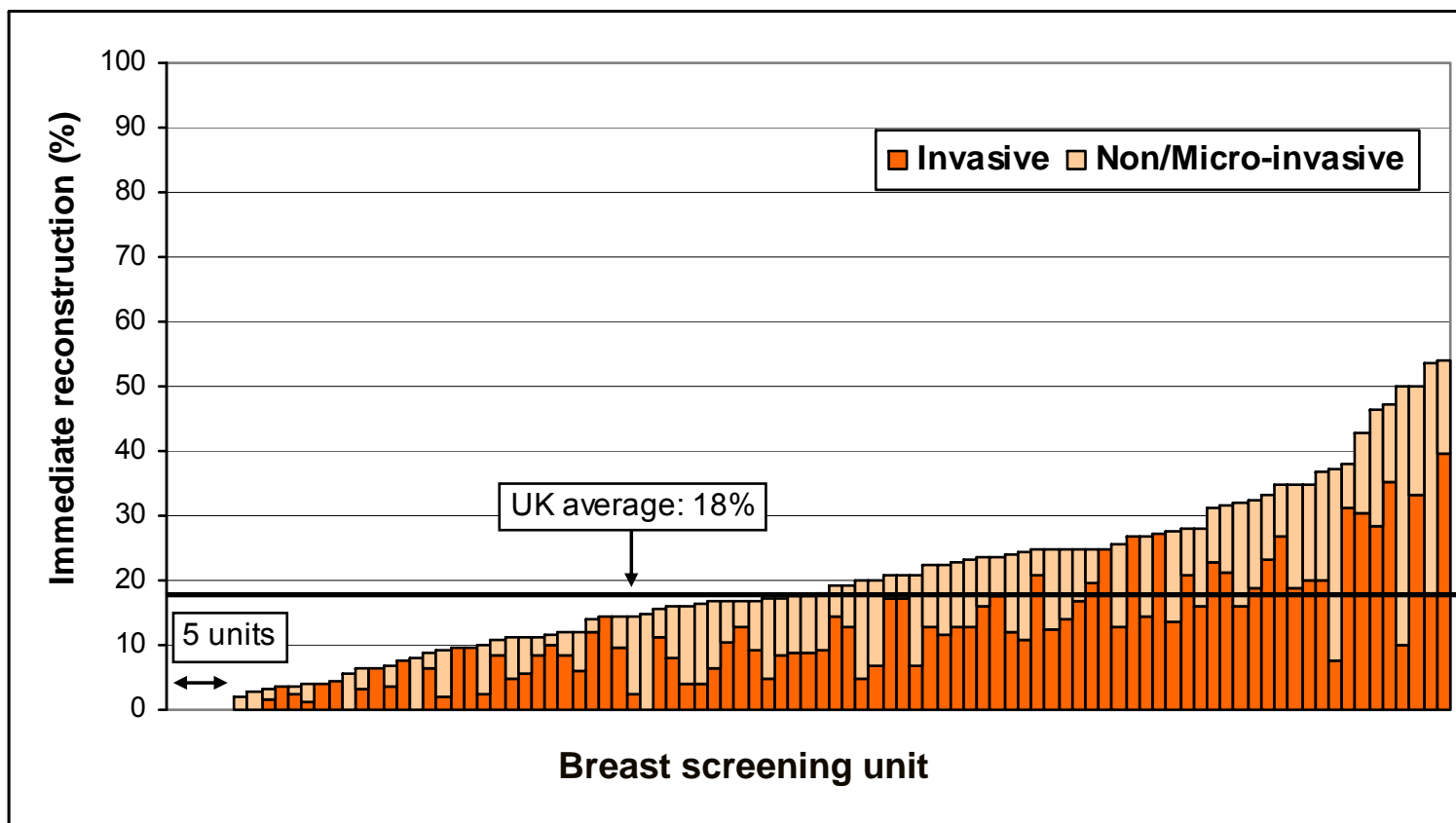
Immediate reconstruction



Overall in UK 18% of cases had immediate reconstruction recorded:
 32% of non-invasive cancers and 14% of invasive cancers
 In the Republic of Ireland 39% had immediate reconstruction recorded



Immediate reconstruction - variation between screening units



Overall in UK, 32% of non-invasive cancers and 14% of invasive cancers had immediate reconstruction recorded



Immediate reconstruction rate for high mastectomy rate outliers

Unit	Mastectomy rate (whole size <15mm) (%)	Reconstruction rate for invasive Mx cases (%)	Reconstruction rate for all Mx cases (%)
NEYH –Unit A	30	8	12
Scotland –Unit A	23	11	17
South Central –A	23	28	31
East Midlands –A	20	3	4
East Midlands –B	19	21	24
North West –A	19	2	4
NEYH –Unit B	18	0	0

Most units with high mastectomy rates for small invasive cancers do not have high immediate reconstruction rates

UK average = 18%





Surgery

Waiting times

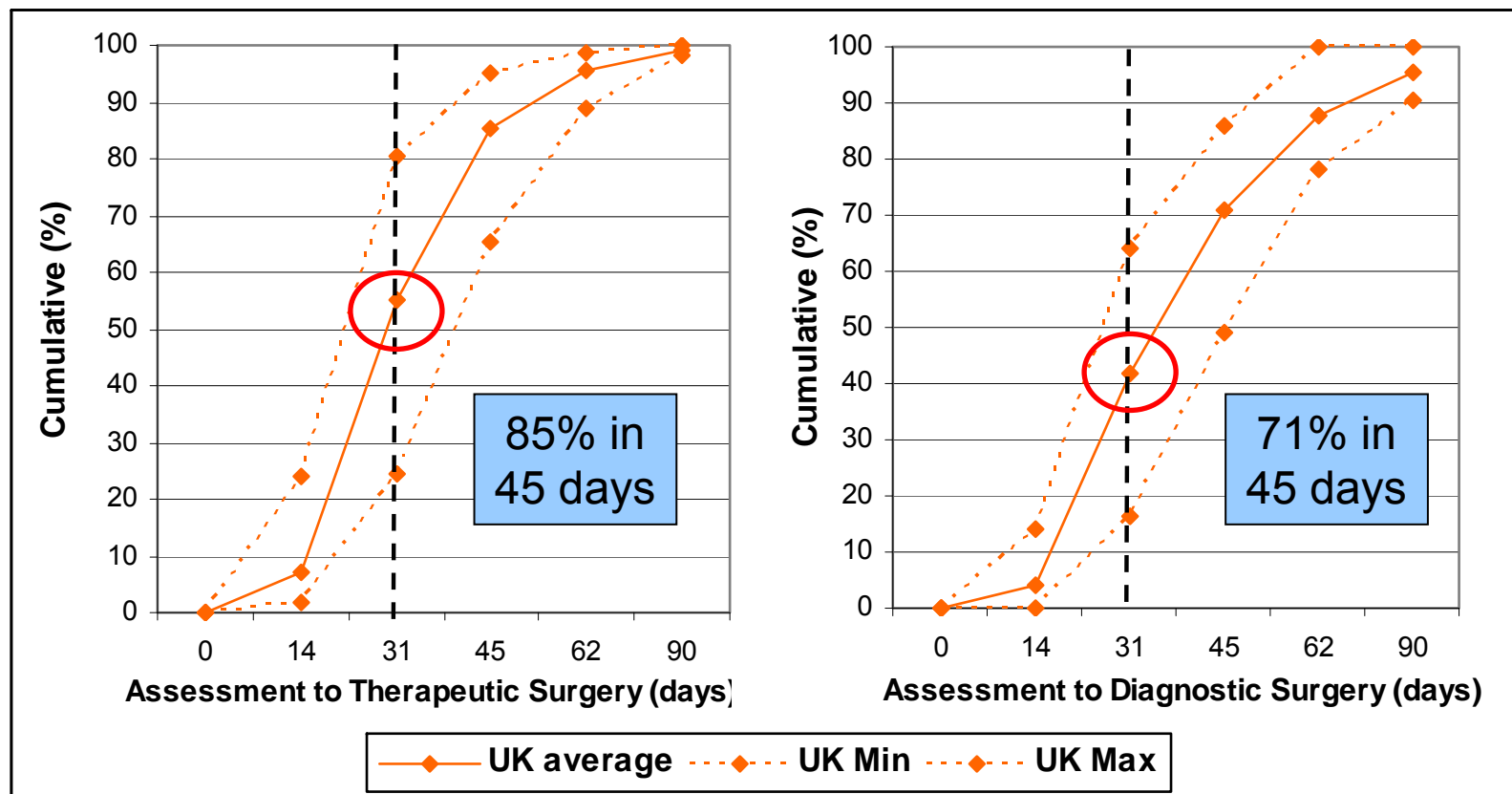


Going Forward on Cancer Waits

- Screening cases were included from **1 January 2009**
- **31 days** from 'decision to treat date' to 'date of first treatment' = **96% standard**
 - Look at 45 days from assessment to first surgery
 - Assumes no longer than 14 days between first assessment clinic and results clinic
- **62 days** from 'date of referral' to 'date of first treatment' = **90% standard**
 - 'Date of referral' will be 'date of last read' (not recorded in 2008/09)
 - 'Date of last read will lie somewhere between
 - 'date of first screen'
 - 'date of first assessment'



Time from assessment to first surgery (excluding neo-adjuvant therapy cases)



Proportion of women having surgery within 31 days of assessment:
 55% with a non-operative diagnosis (median time 29 days)
 42% without a non-operative diagnosis (median time 35 days)

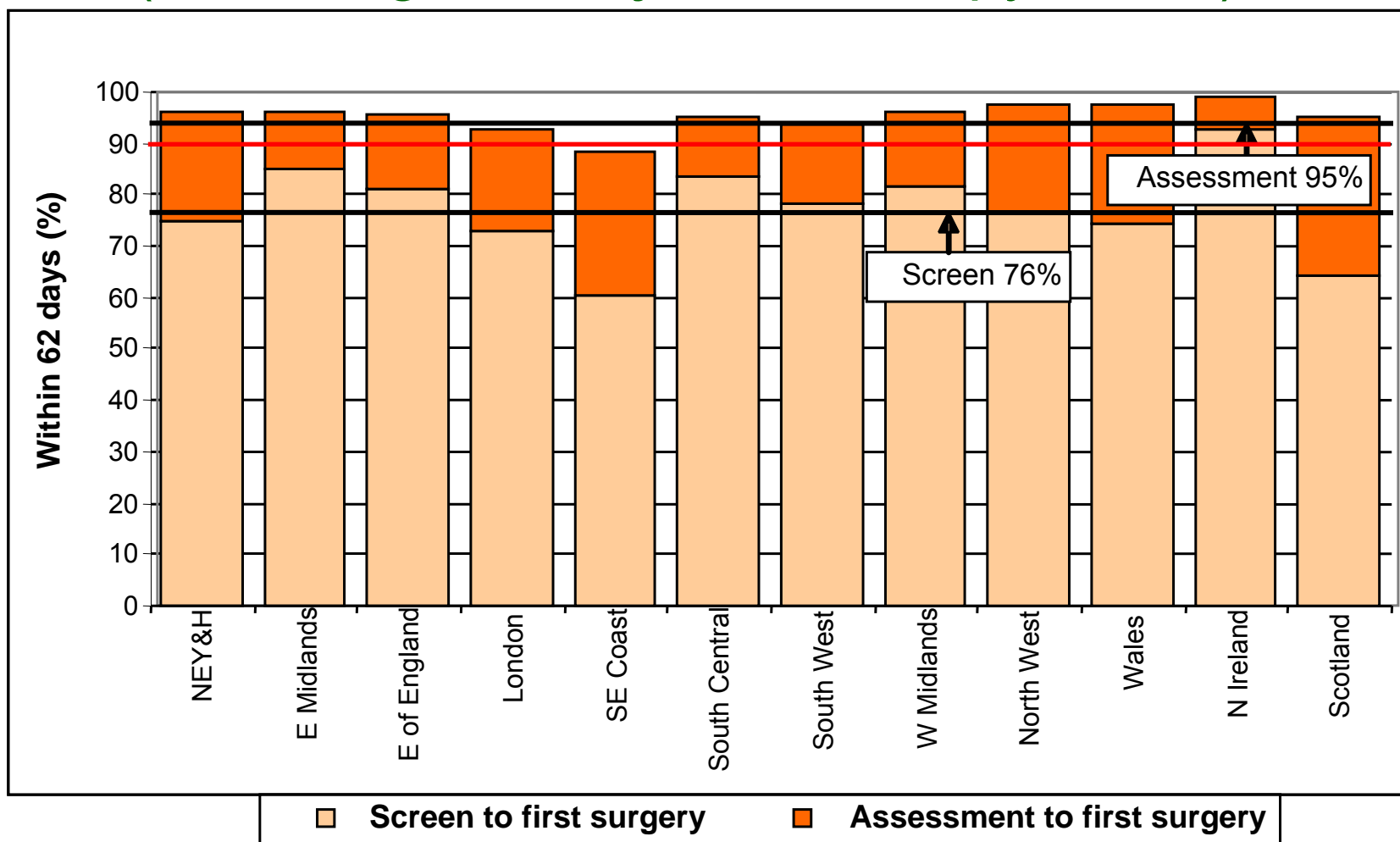


‘Delayed diagnosis’ cancers time from assessment to first surgery greater than 45 days

Type of cancer	With non-operative diagnosis		Without non-operative diagnosis		Overall distribution
	No.	%	No.	%	
All cases	2,302	15	233	29	%
Invasive	1,605	70	75	32	79
Non-invasive	669	29	153	64	20
Micro-invasive	26	1	4	2	2



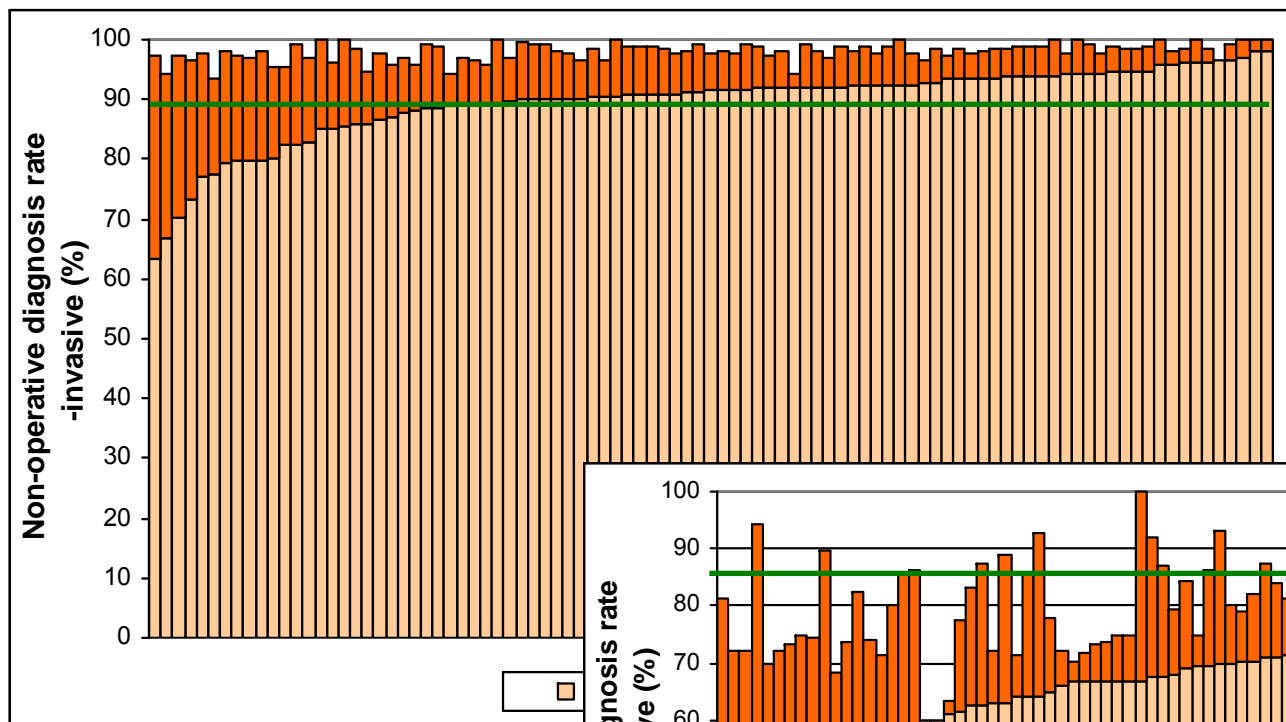
Time from referral to first surgery (excluding neo-adjuvant therapy cases)



Only N Ireland and ?E Midlands could meet the 90% 62 day standard

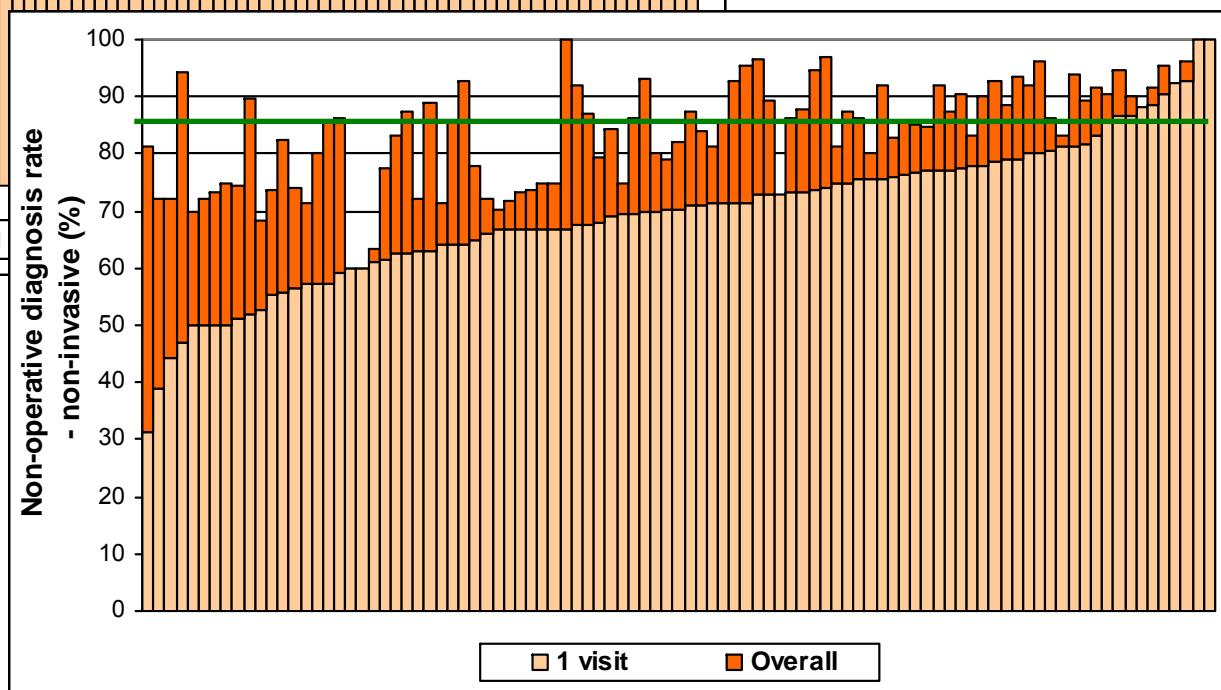


How many assessment clinic visits?



Invasive cancers

Non-invasive cancers



1 visit Overall





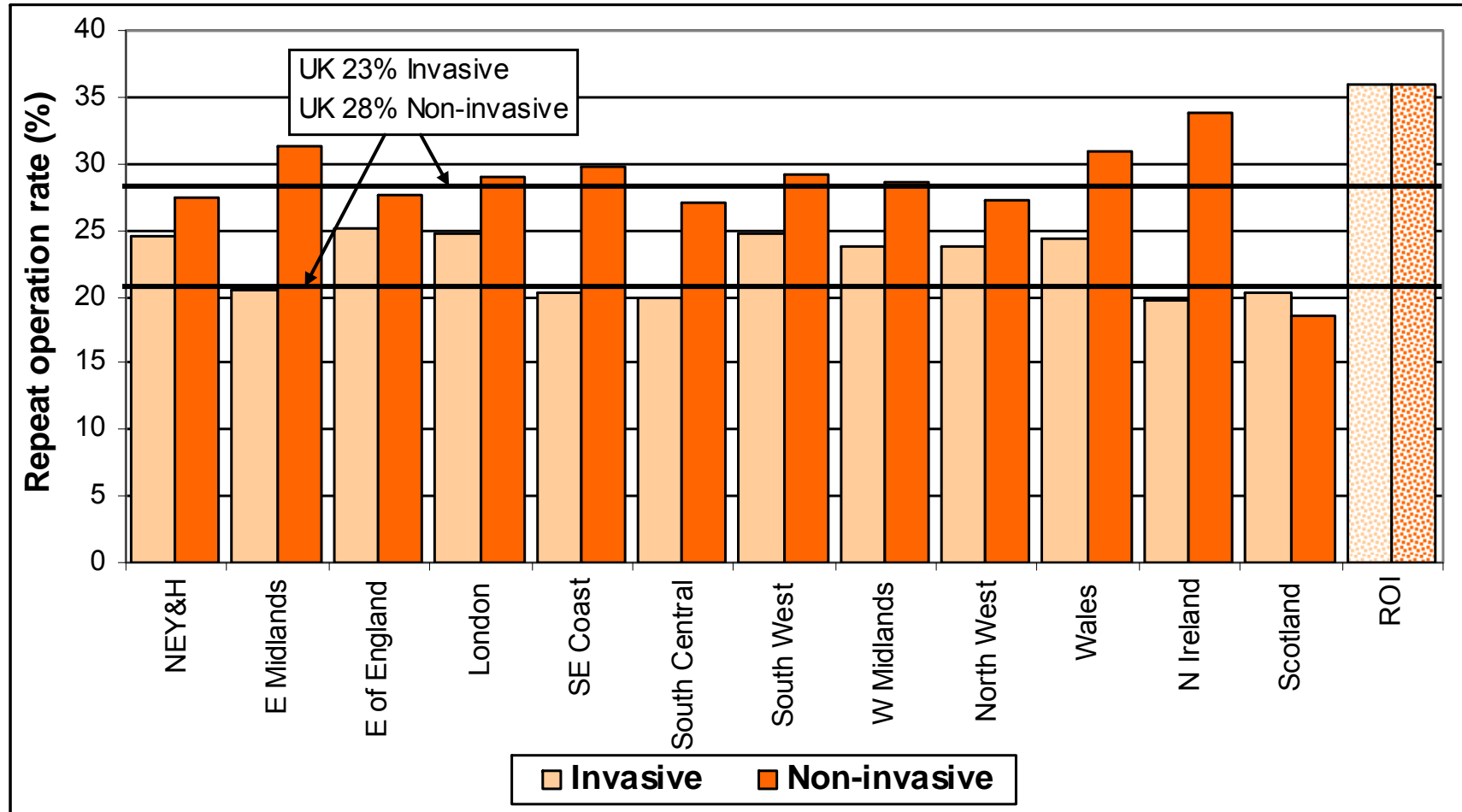
Surgery

Repeat operations



Repeat operation rates Cancer Screening Programmes

(all surgically treated cases)



The repeat operation rate for the 802 surgically treated cancers without a non-operative diagnosis was 56%



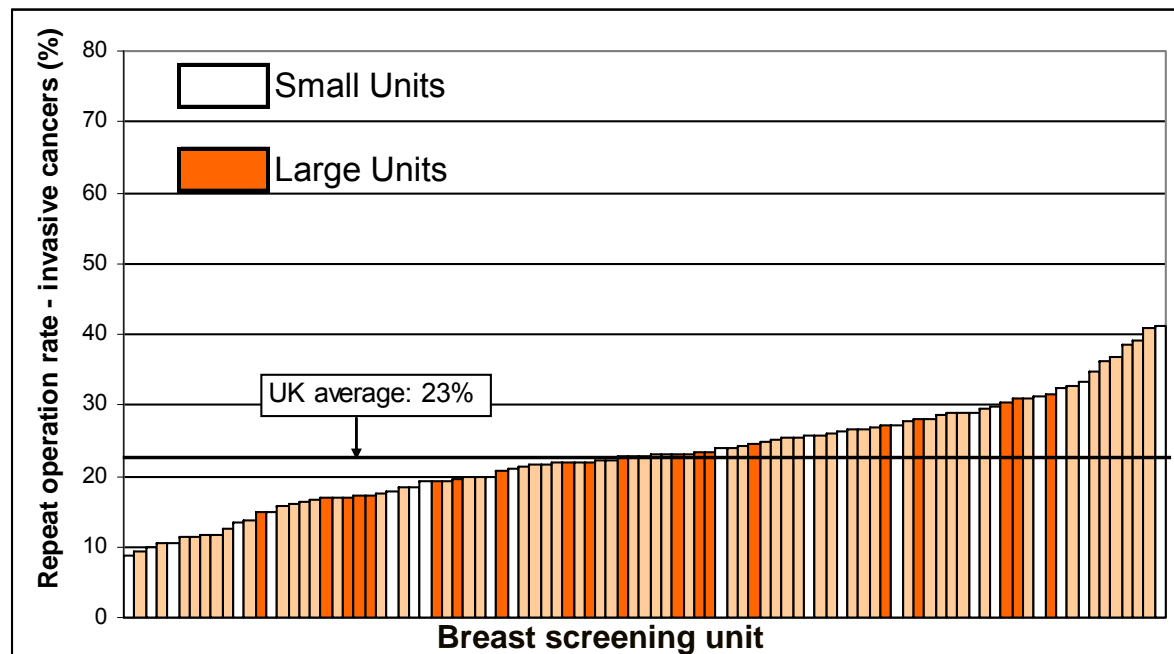
Cancers without a non-operative diagnosis

	Invasive	Micro/non-invasive
Overall	33%	66%
No further surgery	15%	84%
Further surgery	47%	52%
Grade 1 (20%)	48%	
Low cytonuclear grade (10%)		25%

	Whole tumour size <15mm	Non-invasive tumour size >15mm
Invasive - no further surgery	48%	
Invasive - further surgery	33%	
Non-invasive - no further surgery		15%
Non-invasive - further surgery		46%

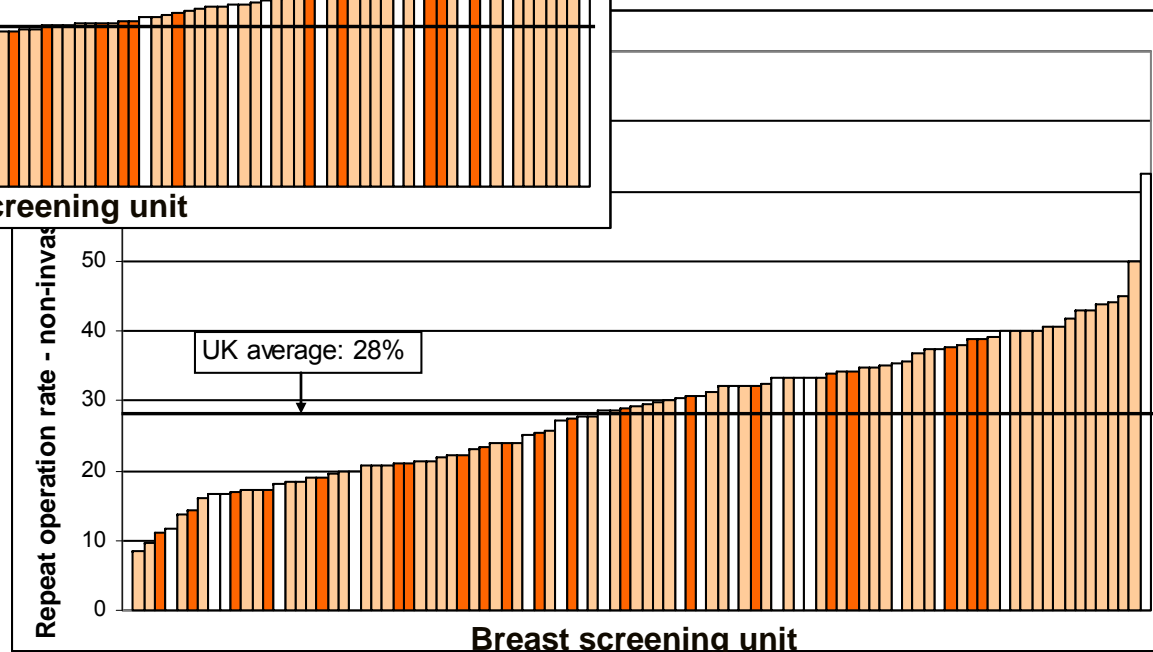


Repeat operation rates

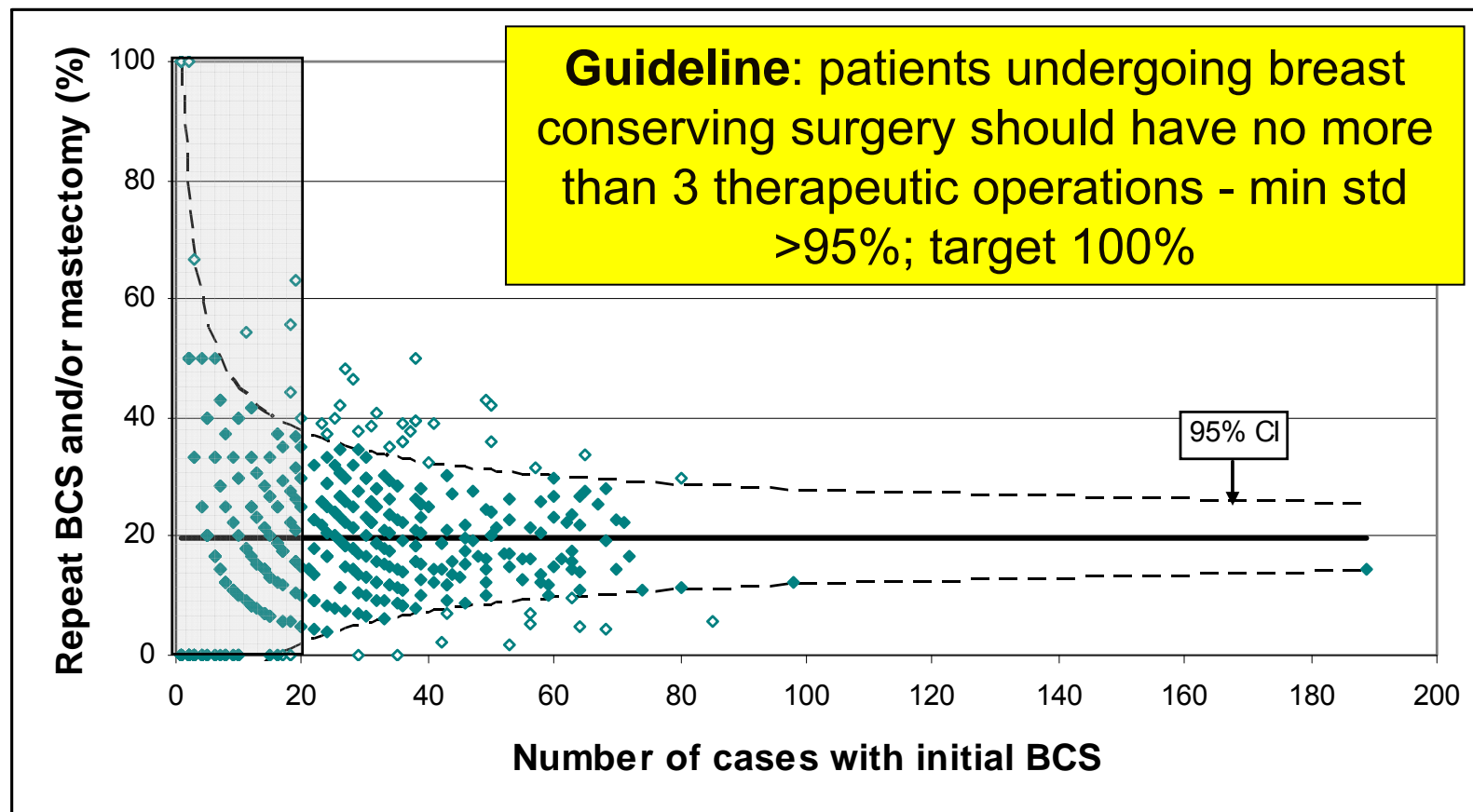


Invasive cancers
All cancers = 23%

Non-invasive cancers
All cancers = 28%



Repeat operations - surgical variation



257 surgeons had more than 20 cases with BCS as the first operation
 25 surgeons lie above and 11 below the control limits
 56 surgeons did 3+ therapeutic operations

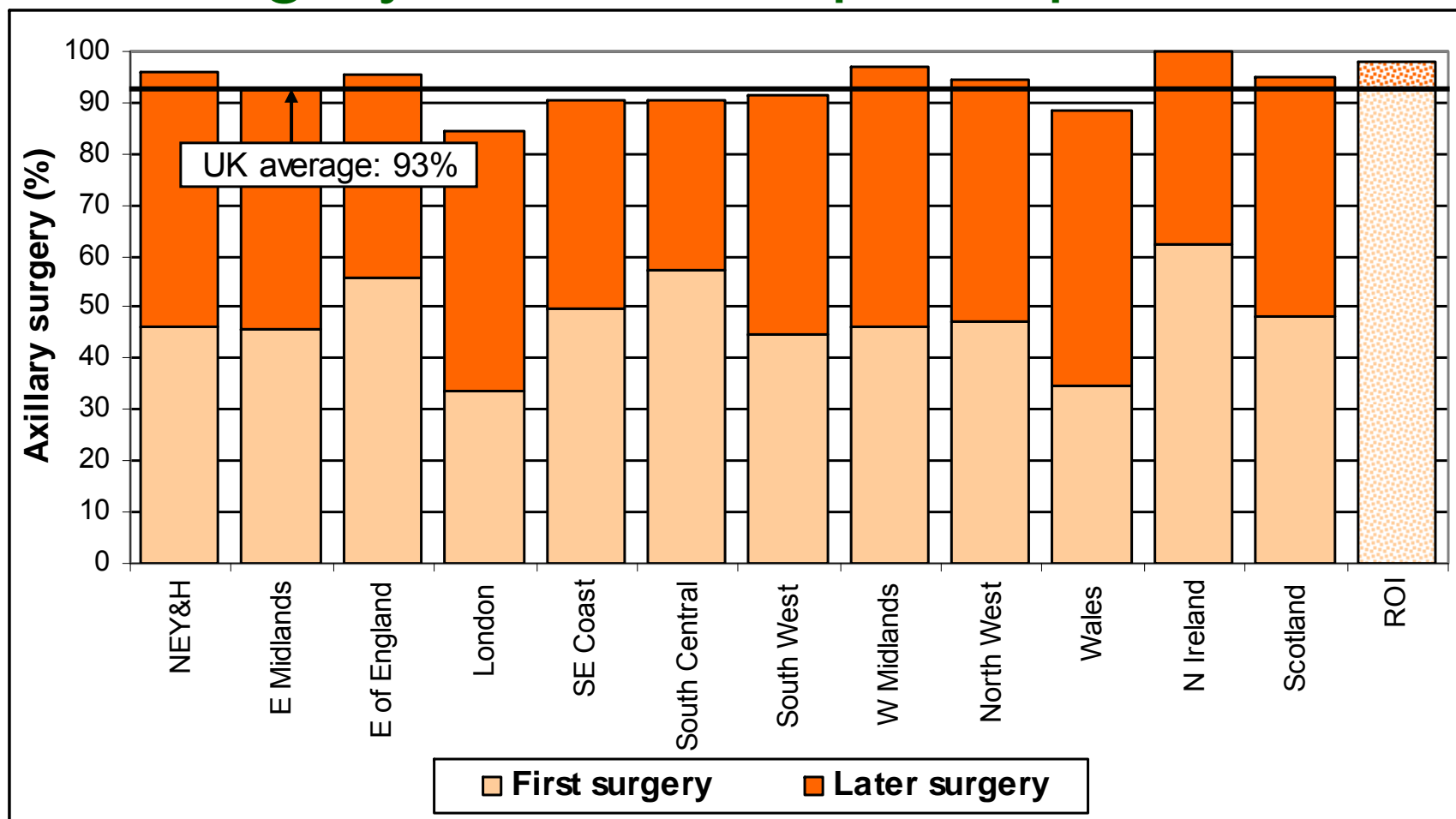


Types of repeat axillary operation

Non-operative diagnosis result	No. with axillary surgery at 1st operation (%)	No. with axillary surgery at later operation (%)	No. with no axillary operation (%)
B5b invasive	11541 (99)	31 (0)	123 (1)
C5 only	521 (98)	7 (1)	5 (1)
B5a confirmed non-invasive or micro-invasive	832 (29)	173 (6)	1846 (65)
B5a found to be invasive at surgery	350 (47)	344 (46)	53 (7)



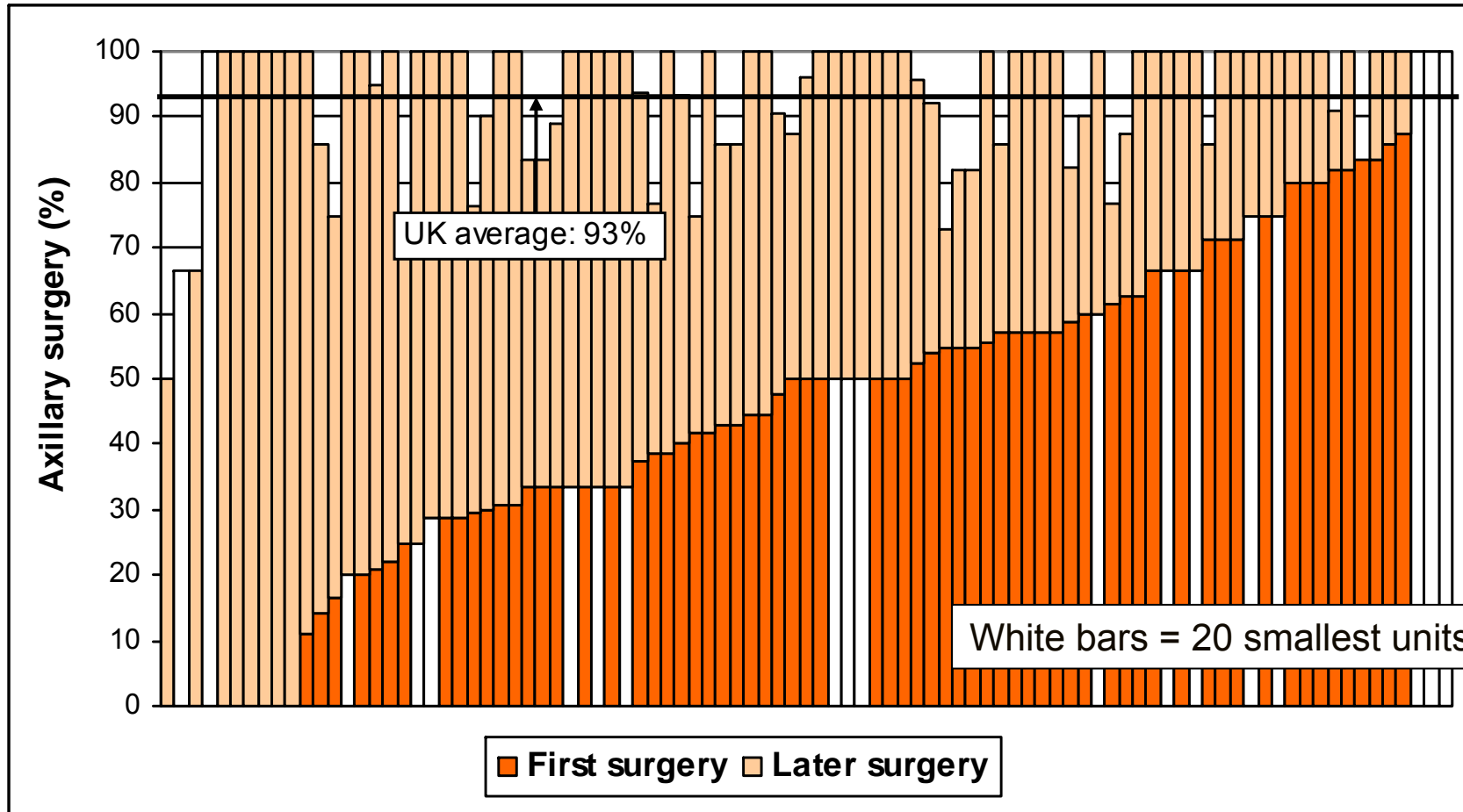
B5a (invasive) cancers having axillary surgery at first or repeat operations



47% of B5a (invasive) cancers had axillary surgery at the first operation and 46% at a repeat operation



B5a (invasive) cancers having axillary surgery at first or repeat operations

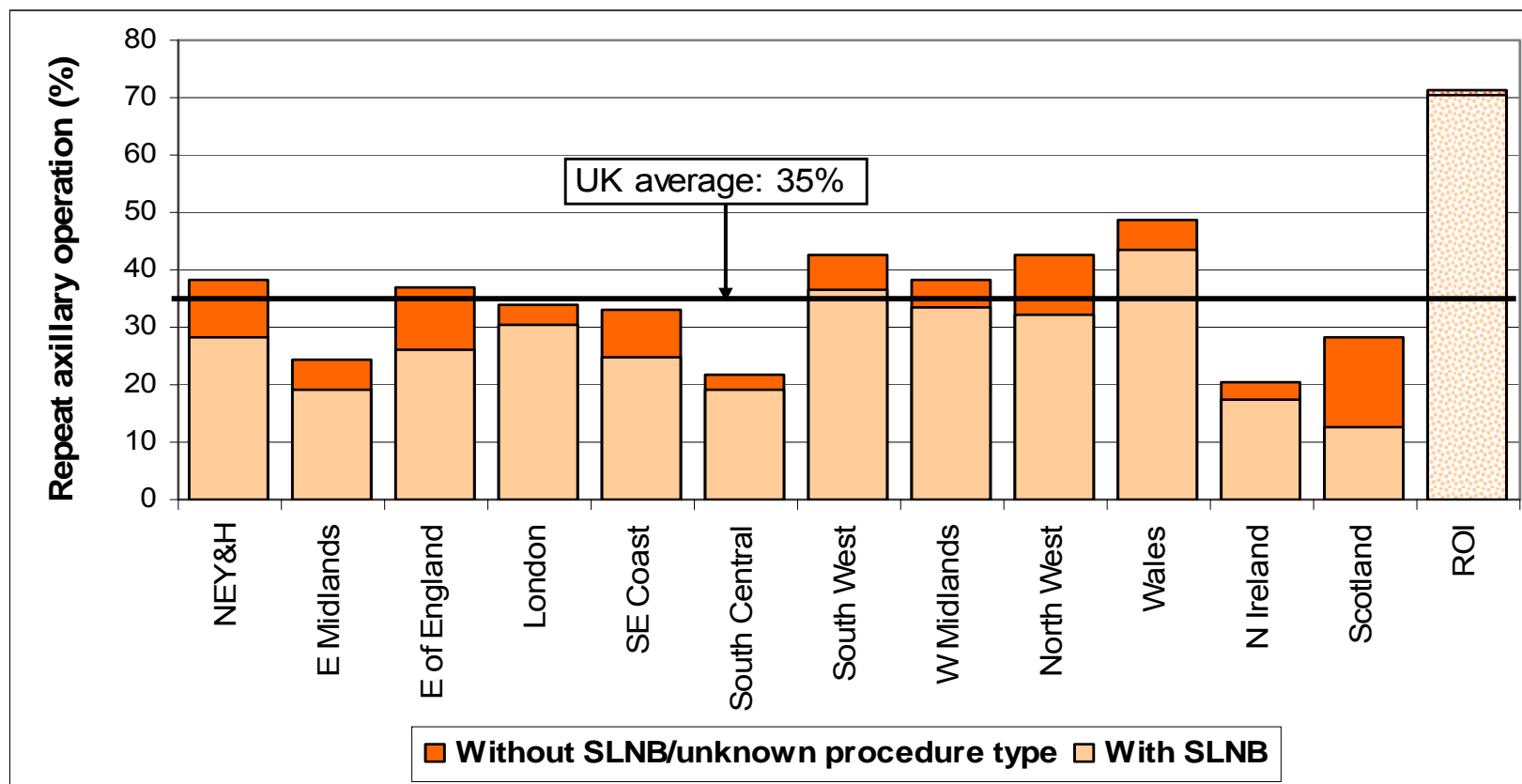


47% of B5a (invasive) cancers had axillary surgery at the first operation and 46% at a repeat operation



Repeat axillary operations

– invasive cancers with positive nodal status having BCS as 1st operation



78% of repeat operations on the axilla were carried out after a +ve SLNB

In the UK 1% of node negative cases had a repeat operation



Adjuvant and Neo-adjuvant Therapy



Questions 8 and 9 to the Audience

Is there a clinical or medical
oncologist present at your

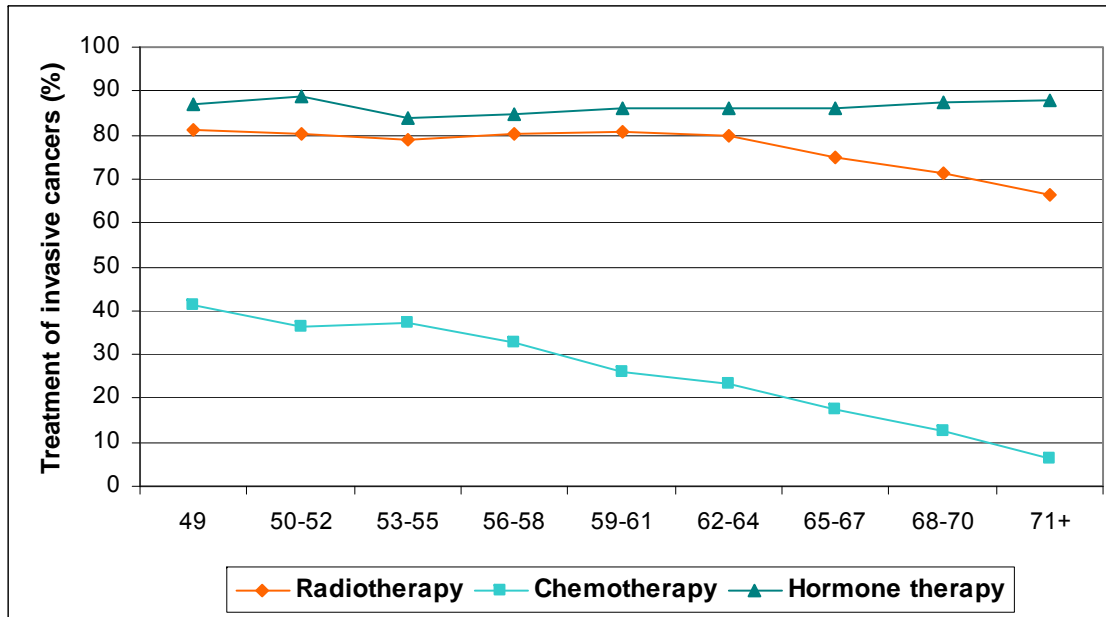
a) diagnostic MDT

b) post-surgery MDT

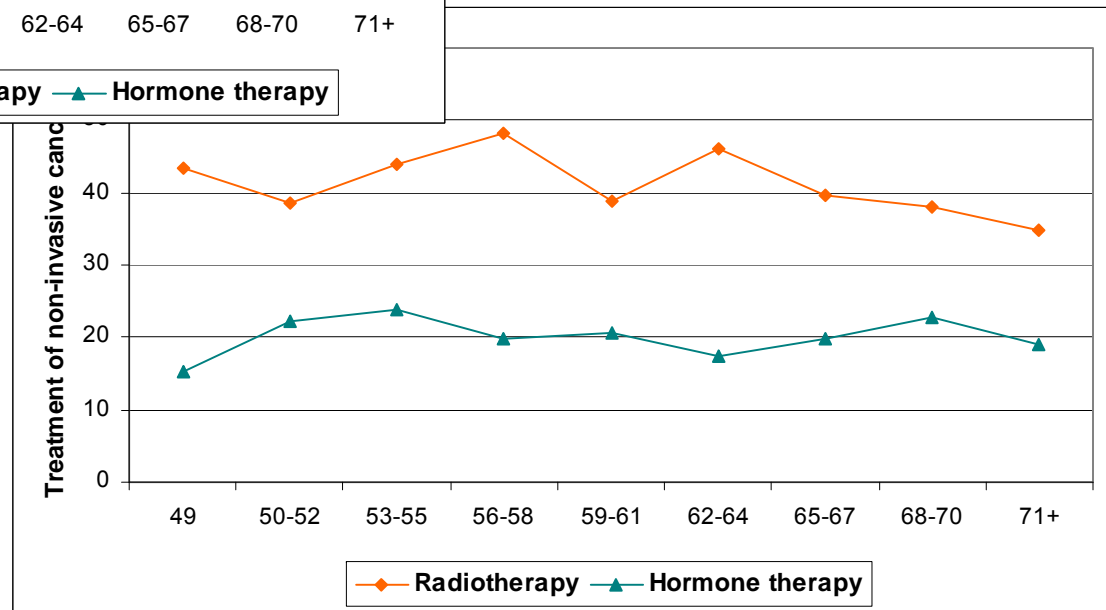
Yes/No



Variation in adjuvant treatment with age at diagnosis



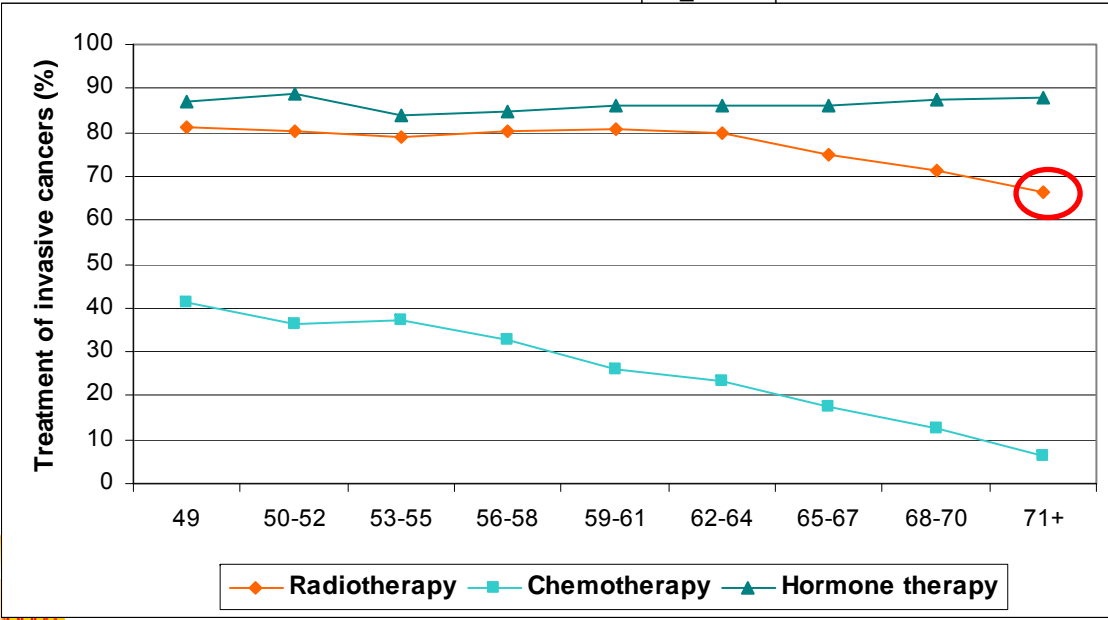
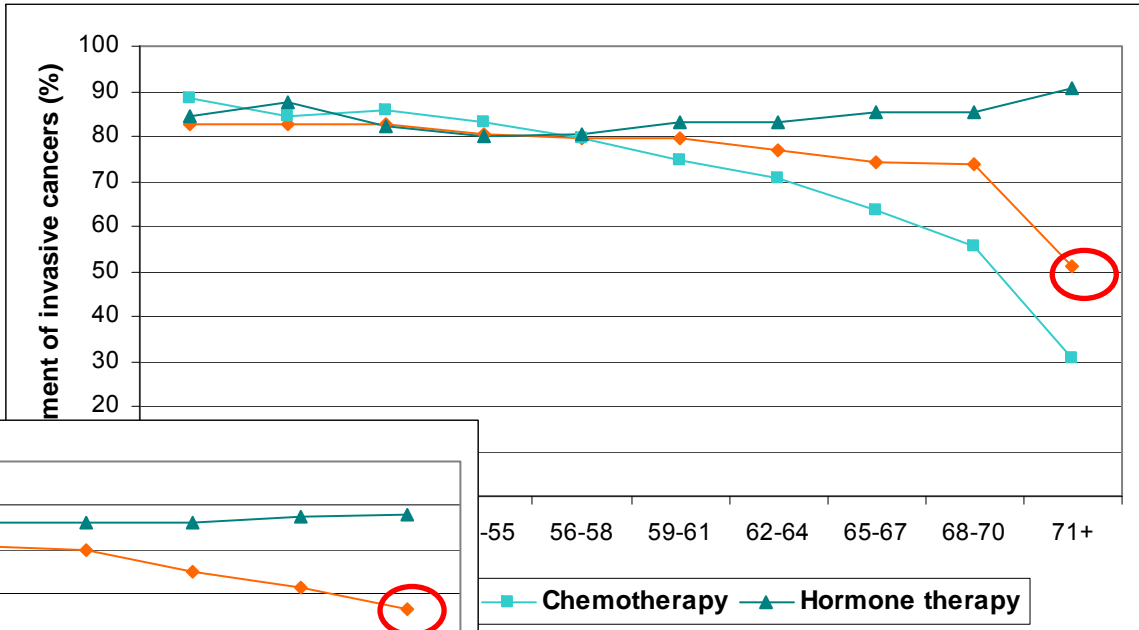
Non-invasive cancers



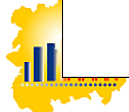
Variation in adjuvant treatment with age at diagnosis

Symptomatic
invasive cancers

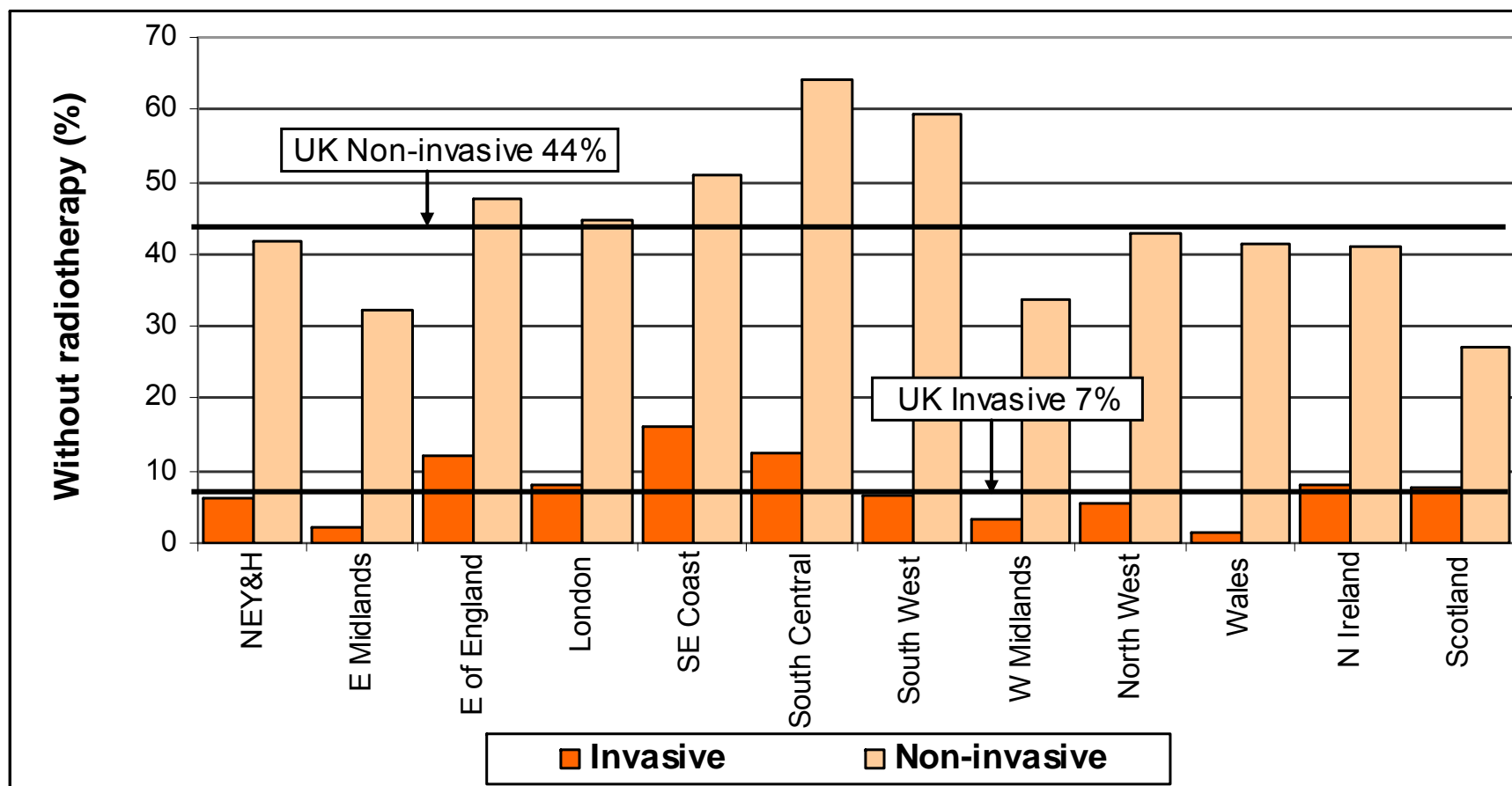
Breast cancers diagnosed in 2006 (all UK) (excluding cases with unknown treatment)



Screen-detected
invasive cancers



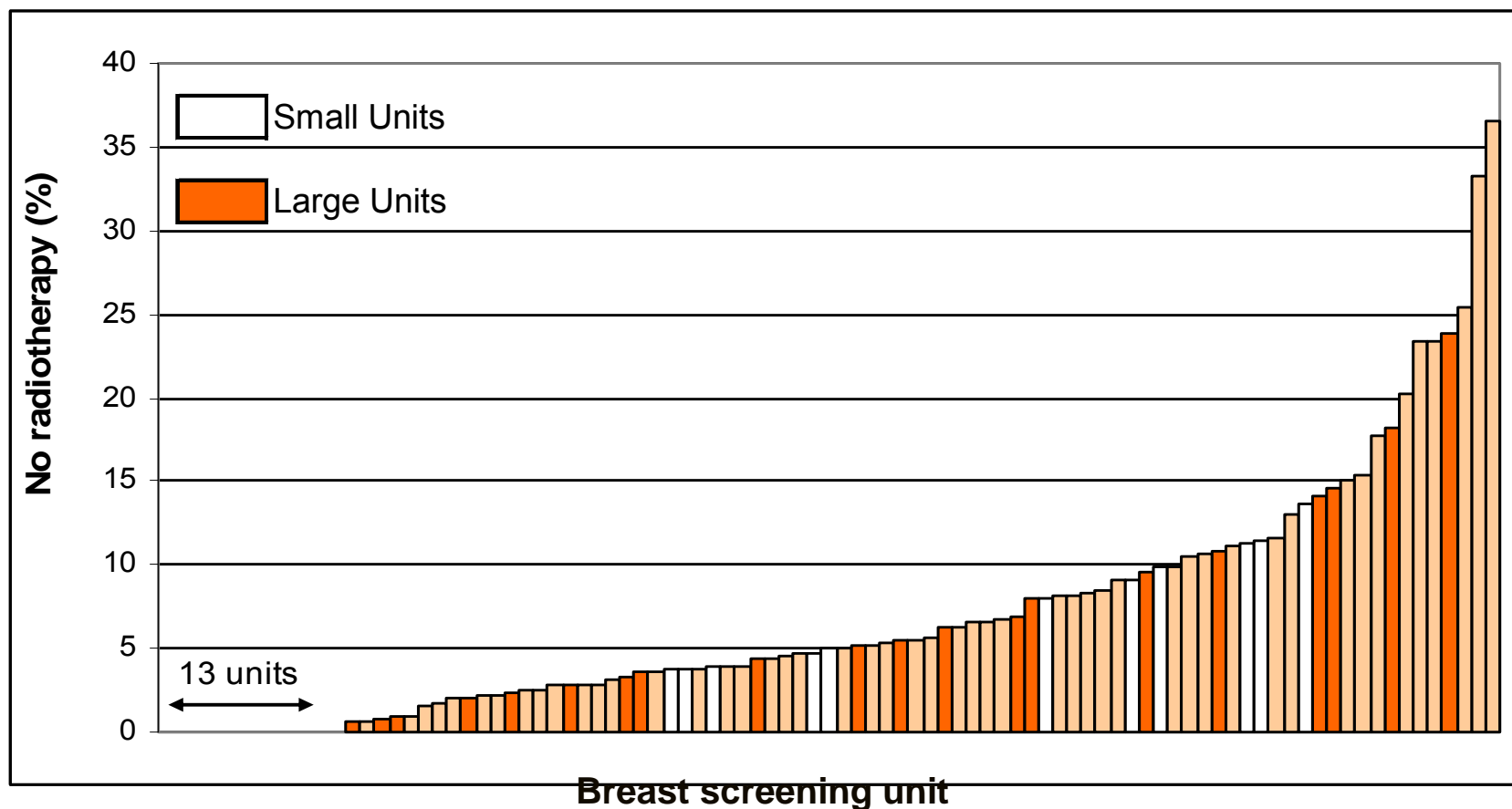
Cancers treated with BCS and no RT recorded



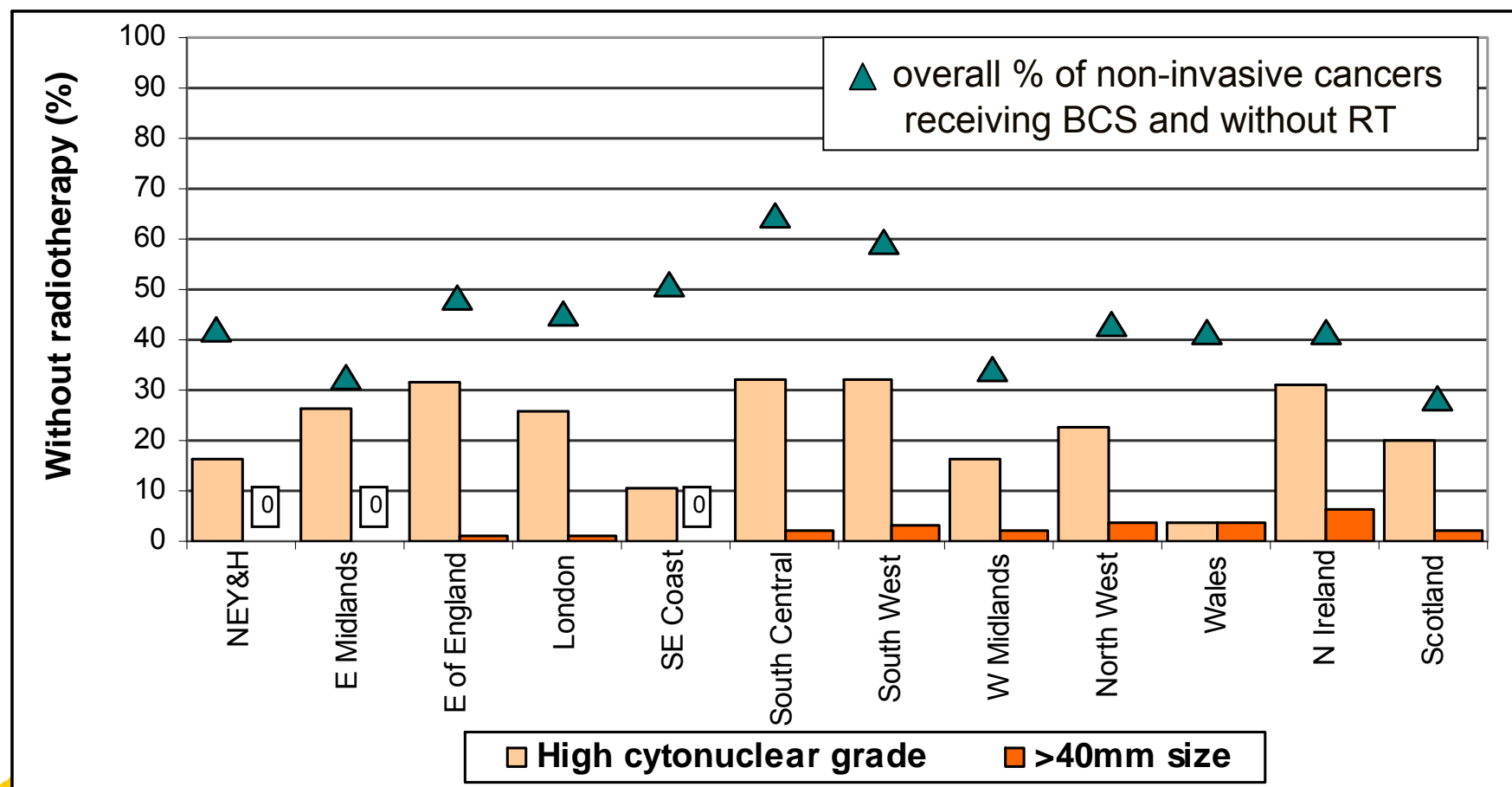
13% of invasive cancers without RT were larger than 20mm, 12% were Grade III and 11% were node positive



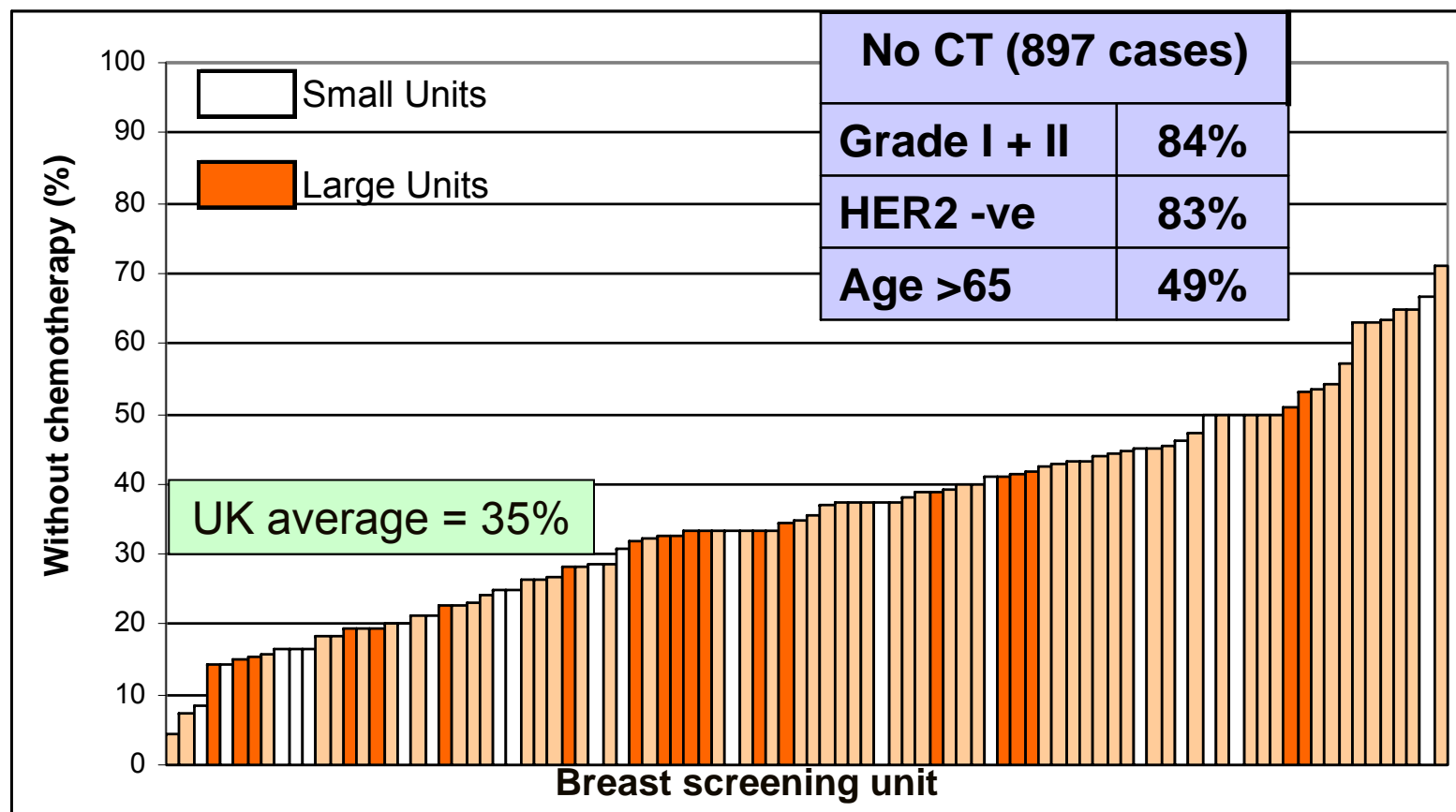
Invasive BCS with no RT recorded - variation between screening units 2007/08



Non-invasive cancers treated with BCS with no RT recorded

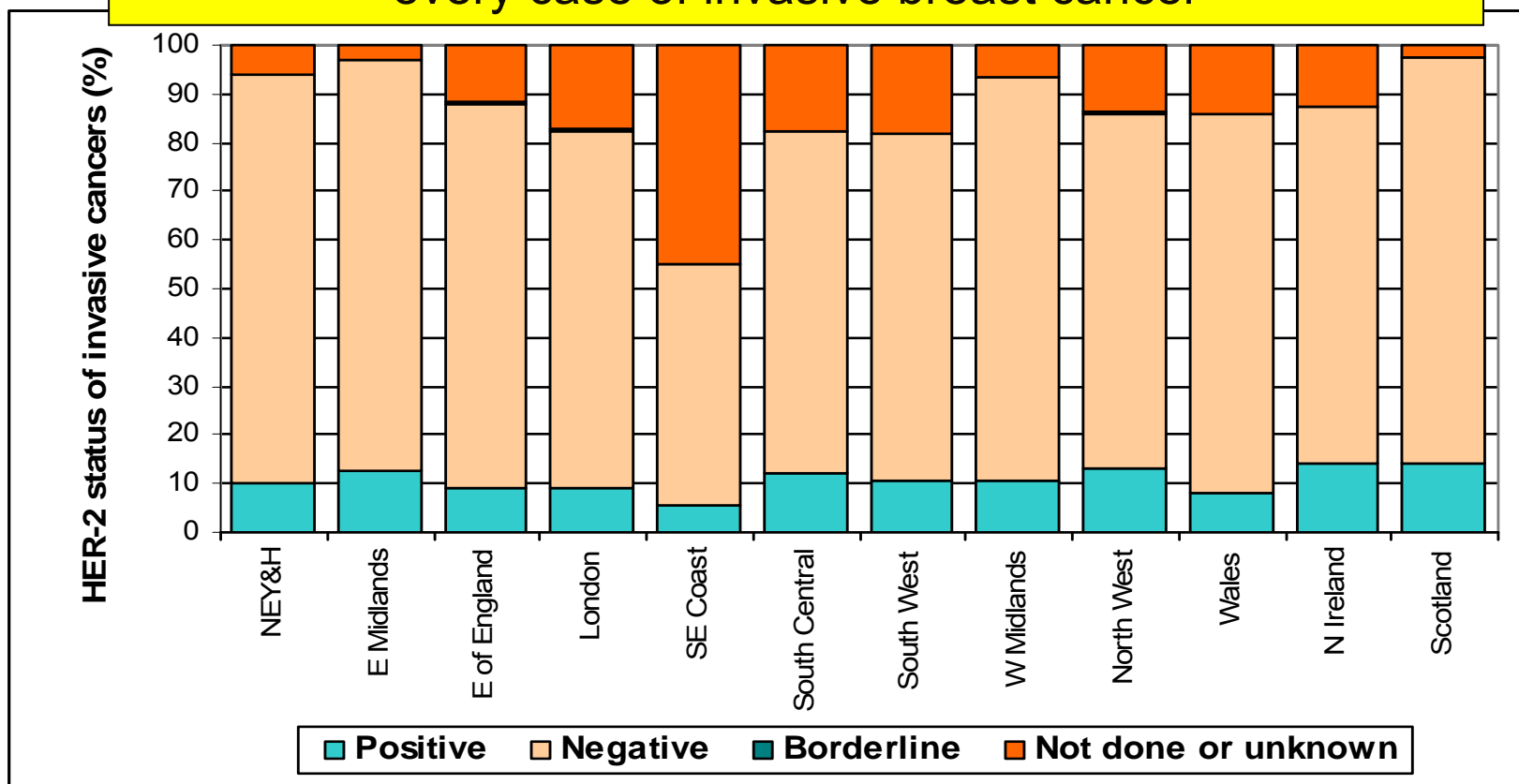


“Women with node positive invasive cancers should normally receive chemotherapy (CT)”



HER-2 status of screen-detected invasive cancers in 2006/07

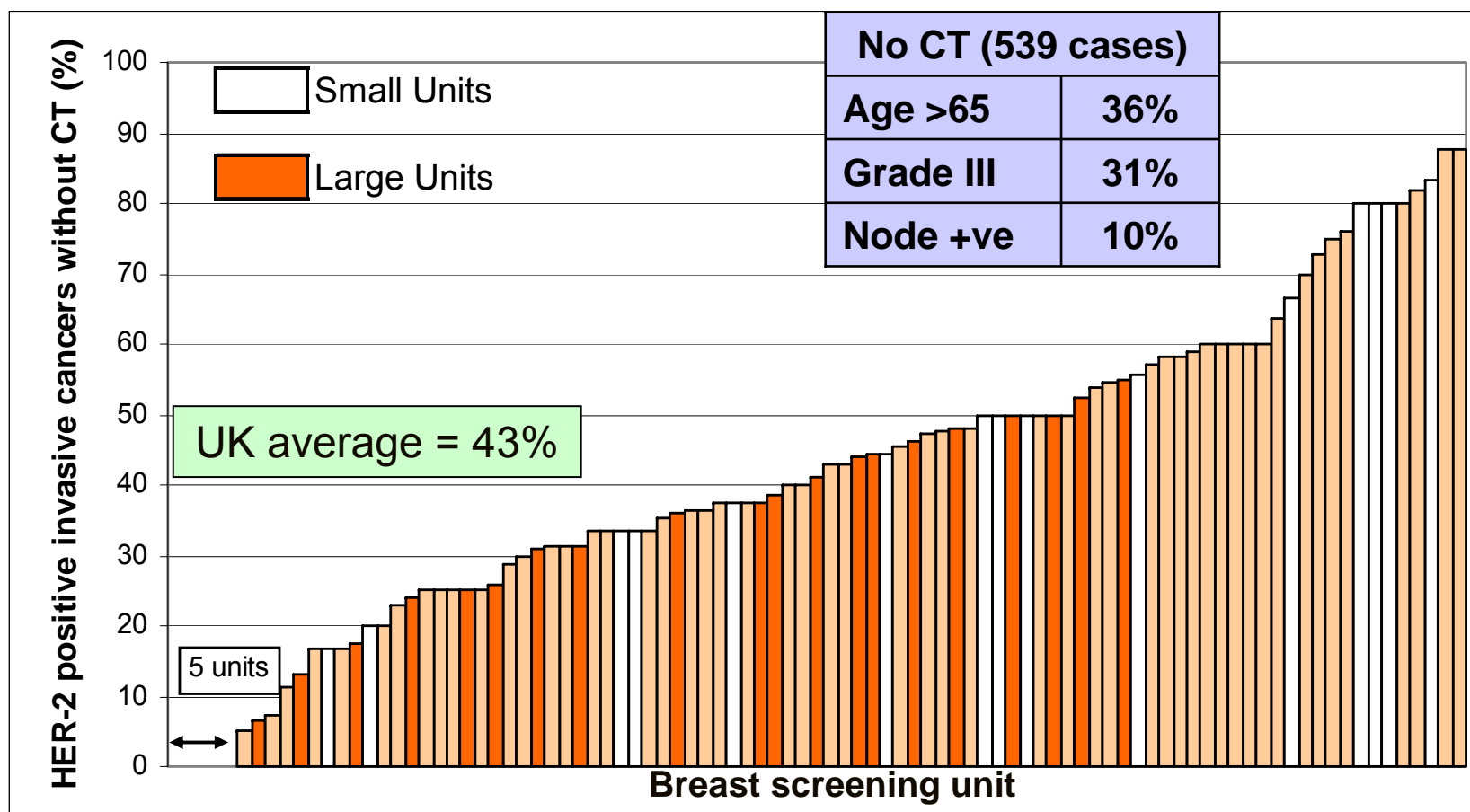
Guidelines: The HER-2 status should be determined in every case of invasive breast cancer



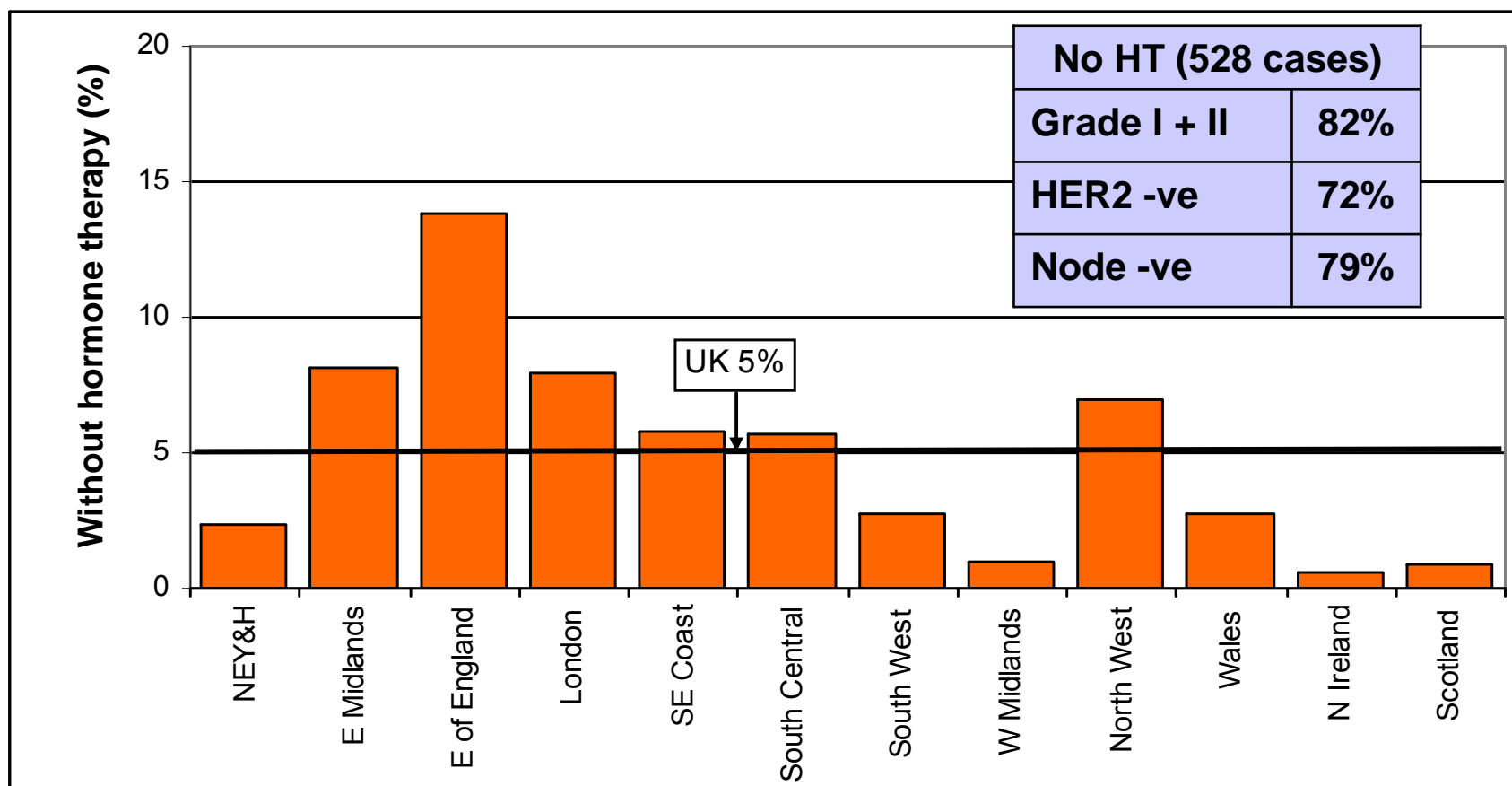
In UK, 12% of invasive cases were HER-2 positive



HER-2 +ve cases with no CT recorded – variation between units 2007/08



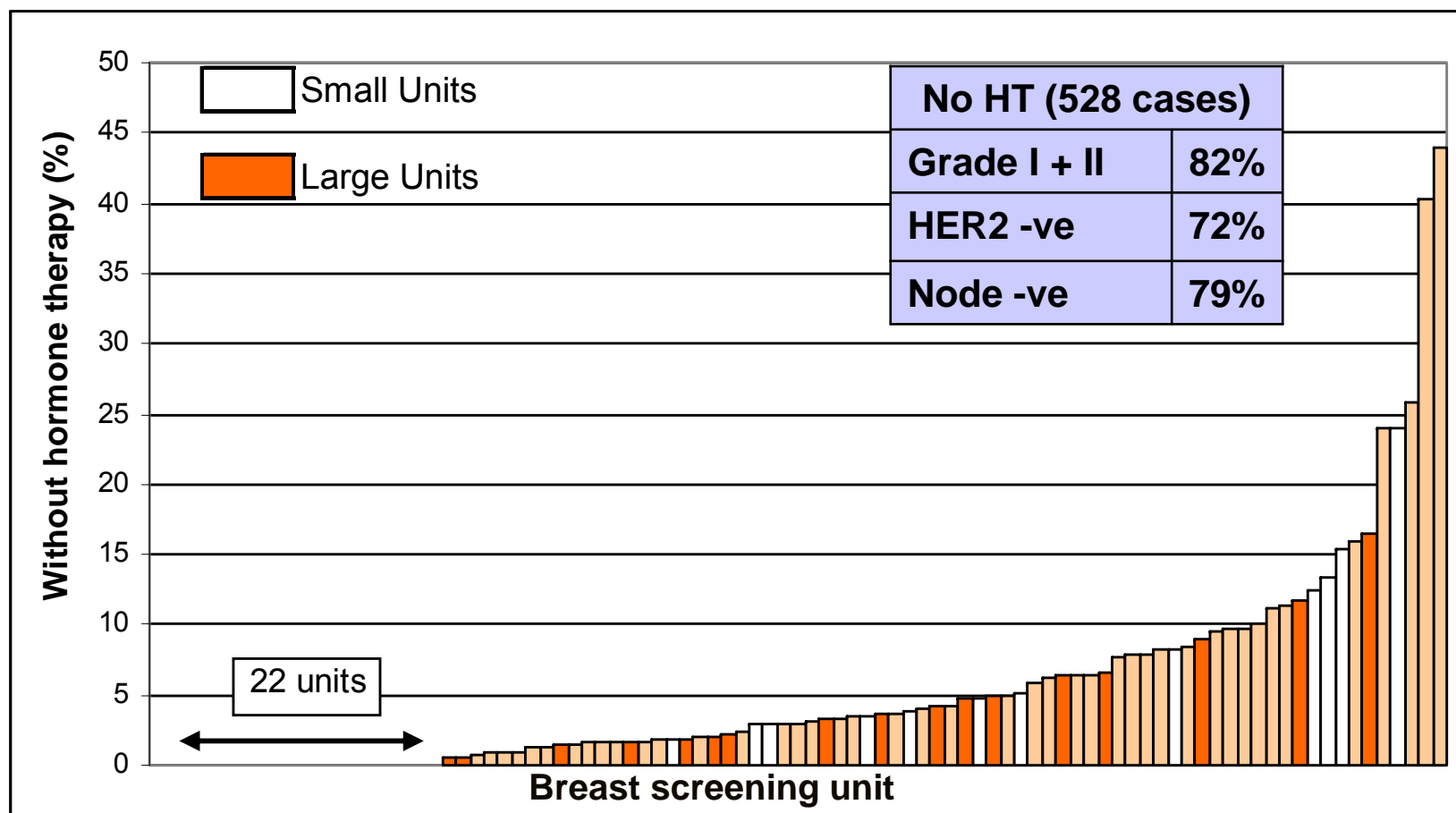
“Hormonal therapy is beneficial to women with ER positive invasive cancers”



In UK, 5% of ER positive invasive cancers did not receive hormone therapy



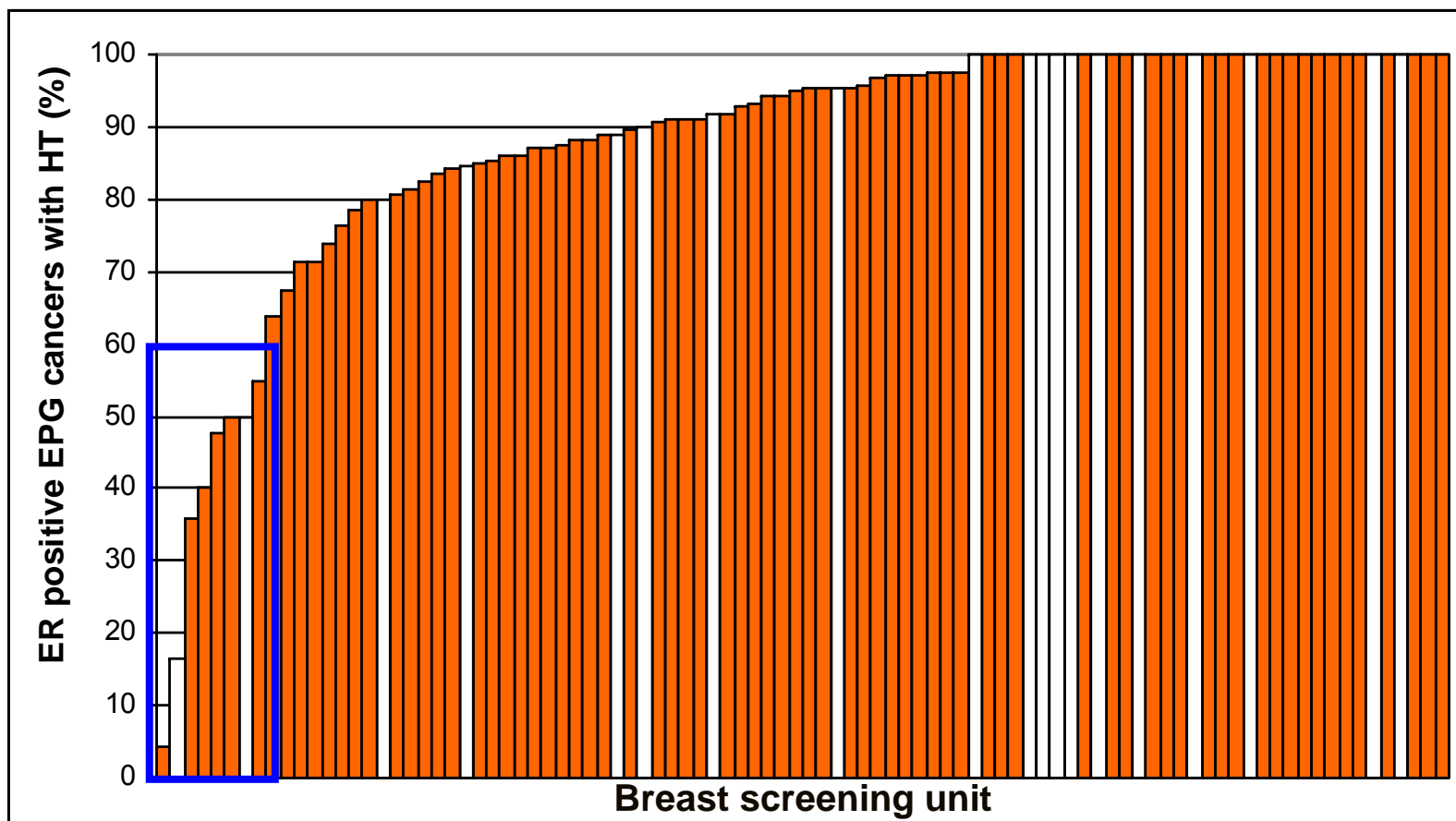
“Hormonal therapy is beneficial to women with ER positive invasive cancers”



In UK, 5% of ER positive invasive cancers did not receive hormone therapy



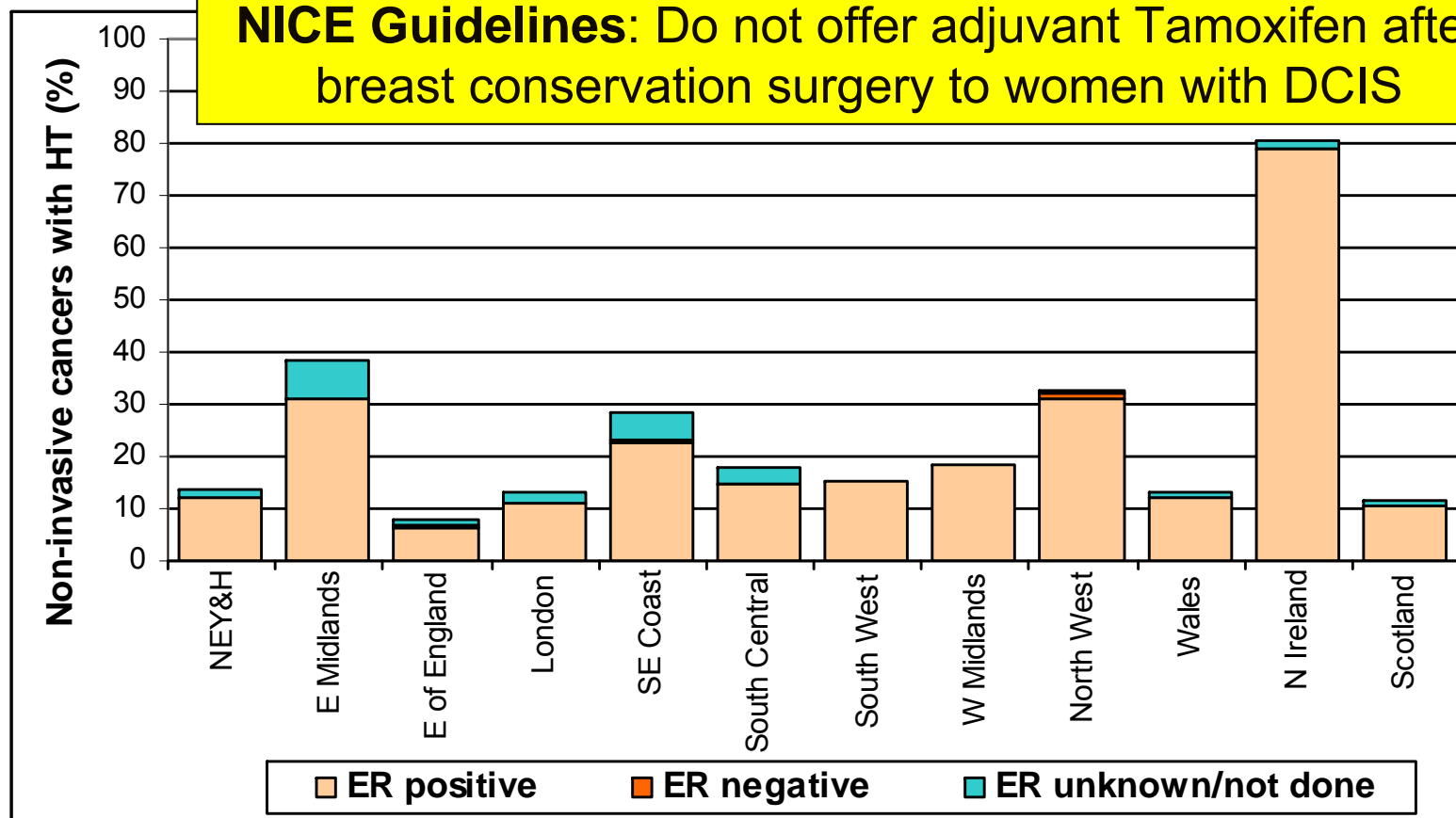
Hormone therapy for invasive ER +ve EPG cancers - variation between units 2007/08



Of 8 units with <60% hormone therapy
 2/8 East Midlands, 3/11 East of England, 1/10 South Central and 2/12 North West

ER positive and ER negative/PgR positive non-invasive cancers

NICE Guidelines: Do not offer adjuvant Tamoxifen after breast conservation surgery to women with DCIS



In UK, 45% of ER positive non-invasive cancers and 64 non-invasive cancers with -ve or unknown ER status received hormone therapy



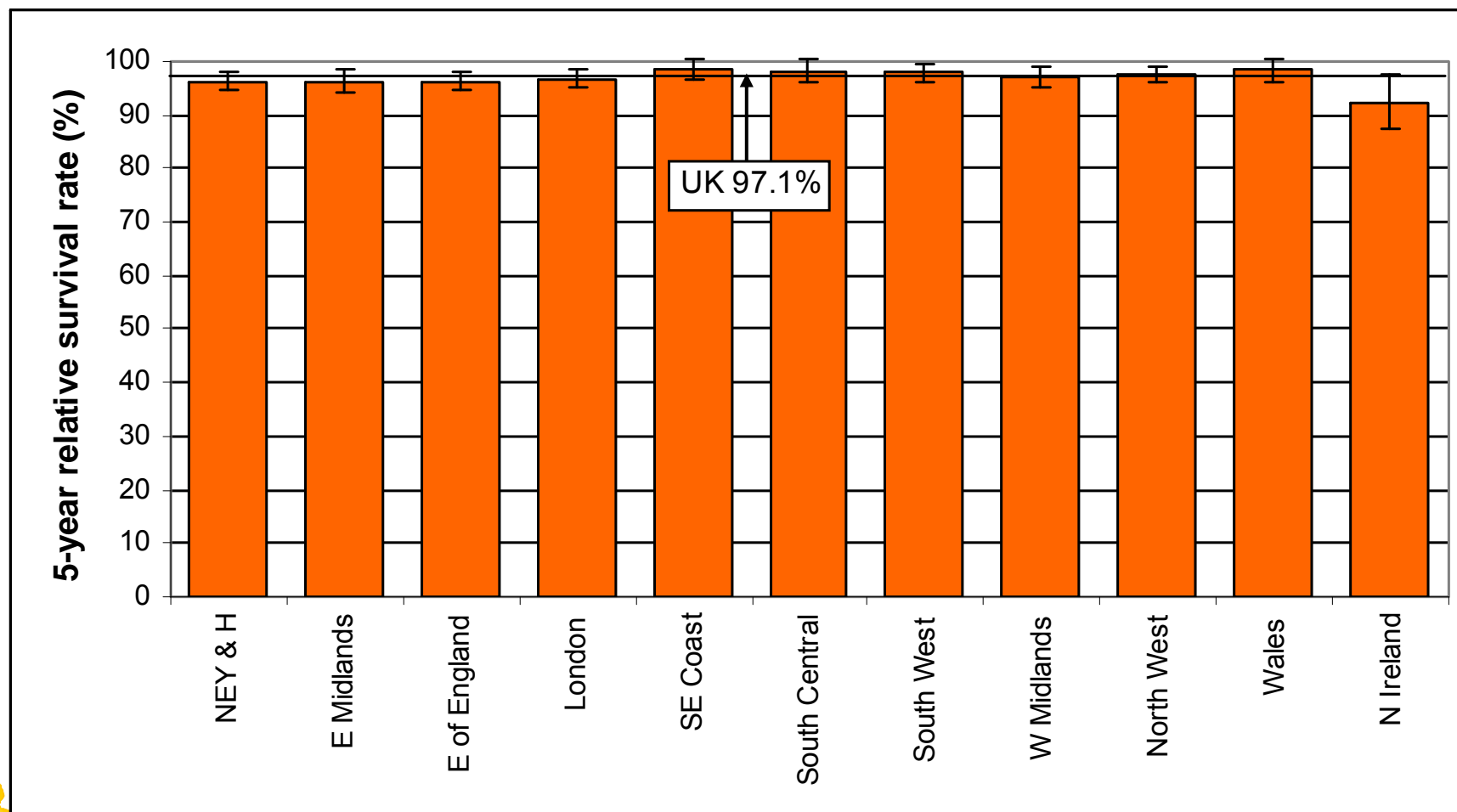


Survival

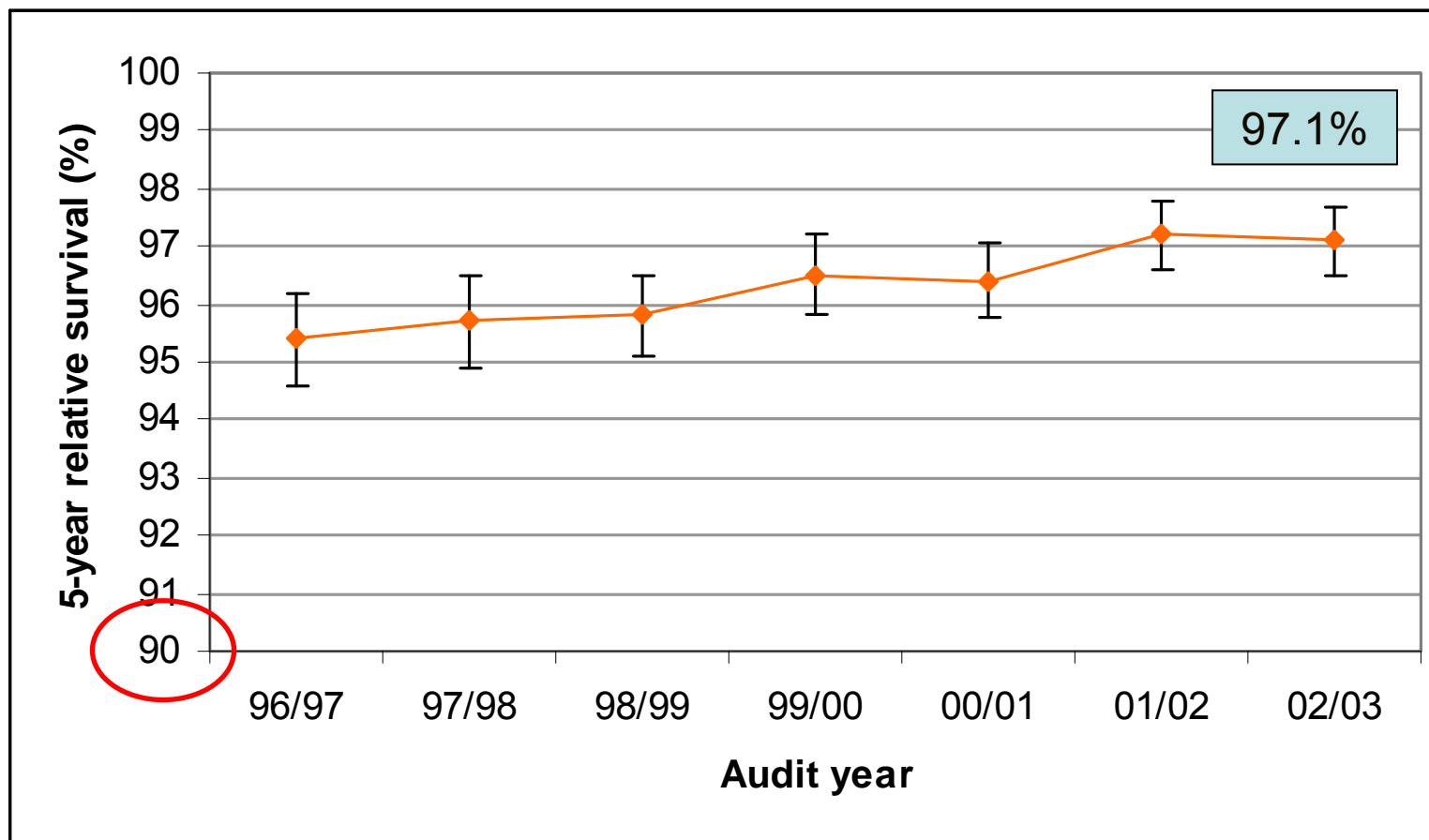


5-year relative survival

- screen-detected cases in 2002/03



5-year relative survival



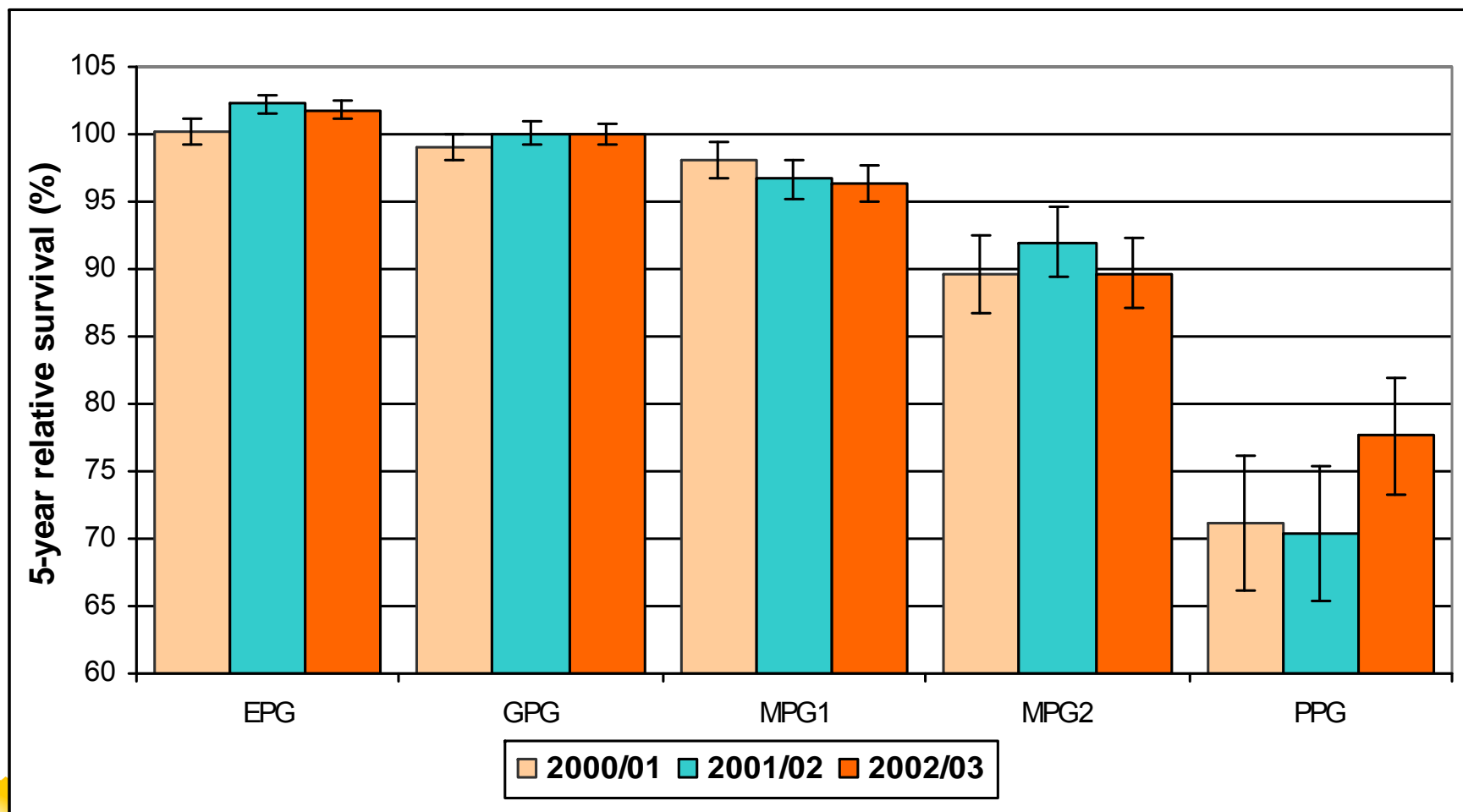
Patients with invasive screen-detected breast cancer

5-year relative survival for patients with non-invasive or micro-invasive breast cancers is 101%



5-year relative survival by NPI group

- screen-detected cases in 2002/03



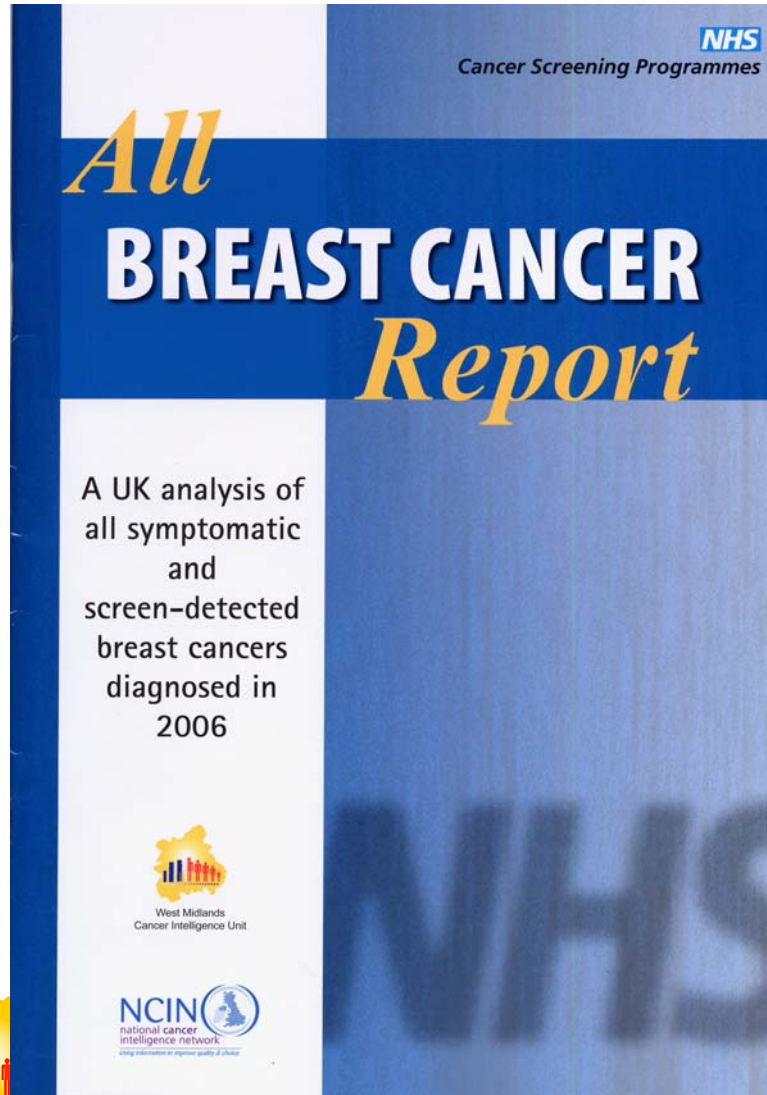


BCCOM

Data quality improvement



Available to download from
NHS Cancer Screening and
WMCIU websites



Region/Celtic country	Total cases	Pop ⁿ covered (m)
Eastern	4,731	5.66
North West	5,260	6.58
Northern & Yorkshire	5,460	6.76
Oxford	2,138	2.86
South West	6,839	7.02
Thames	8,305	11.84
Trent	4,168	4.99
West Midlands	4,581	5.38
England	41,482	51.09
Northern Ireland	1,019	1.76
Scotland	4,392	5.14
Wales	2,559	2.98
UK	49,452	60.98

England or UK data?

Data item	England	Northern Ireland	Scotland	Wales
Morphology	✓	✓	✓	✓
Invasive size, invasive grade, nodal status and Nottingham Prognostic Index for invasive cancers	✓			
Receptor status	✓			
Surgery	✓	✓	✓	✓
Number of operations	✓			
Final therapeutic operation type	✓	✓	✓	✓
Sentinel lymph node biopsy	✓			
Immediate reconstruction	✓			
Radiotherapy	✓*	✓	✓	
Chemotherapy	✓*	✓	✓	
Survival	✓			

All Breast Cancers Report 2006
 Cancer registry merged dataset + BCCOM dataset
 + NHSBSP/ABS audit dataset + HES data



Data completeness England

Data item	Number of cases	% England	
Surgical treatment	33,717	81	←
Surgical treatment (invasive cancers)	29,663	72	←
Morphology	33,545	81	←
*Invasive tumour size	25,350	85	←
*Invasive tumour grade	28,462	96	←
*Nodal status (invasive cancers)	20,798	70	←
*NPI (invasive cancers)	19,832	67	←
*Oestrogen receptor status (invasive cancers)	14,330	48	←
*Progesterone receptor status (invasive cancers)	10,954	37	←
*HER2 status (invasive cancers)	10,487	35	←
*Number of operations	31,145	92	←
Final therapeutic operation	38,198	92	←
Sentinel lymph node biopsy	18,155	44	←
Immediate reconstruction	3,751	9	←
*Radiotherapy (invasive cancers)	19,217	65	←
*Chemotherapy (invasive cancers)	20,391	69	←
*Hormone therapy (invasive cancers)	17,103	58	←



Data collection by UK registries

Survey results

Data item not collected by one or more registries	Cancer Registry											HES
	Eastern	North West	Northern & Yorkshire	Northern Ireland	Oxford	Scotland	South West	Thames	Trent	Wales	West Midlands	
National Cancer Registration Dataset items												
Invasive tumour size									2008	X		
Vascular/lymphatic invasion	X	2009				X		X	X			
Excision margins	X	2009				X		X	X	2009		
Nodes examined									X	X		
Nodes positive		2009							X	2008		
NPI score (invasive tumours)		X	2008				2006	X	X	2008		
Surgery		X							X			✓
Radiotherapy										2008		
Hormone therapy										X		
Royal College of Pathologists Breast Cancer Dataset items												
Cytonuclear grade		X		X		X			X	X		
Whole tumour size (invasive tumours)	X	X		X	X	X	X	X	X	2008		
Sentinel lymph node procedure	2009	X	X			X	2007	X	X	2007		✓
ER status	2010	X			X		X	X	X	X		
HER2 status	2010	X	X		X	X	X	X	X	X		
Other data items in BCCOM dataset												
Breast surgeon				2006		X						✓
VNPI score	X	X	X	X	X	X	X	X	X	X		
PR status	X	X			X	X	X	X	X	X		
Pre-operative diagnosis	X	X				X	X	X	X	2010		

X = data item not collected for 2006 cases, no firm plans to collect

date = start date for collection implemented or planned

Green = data item collected and provided for 2006 cases

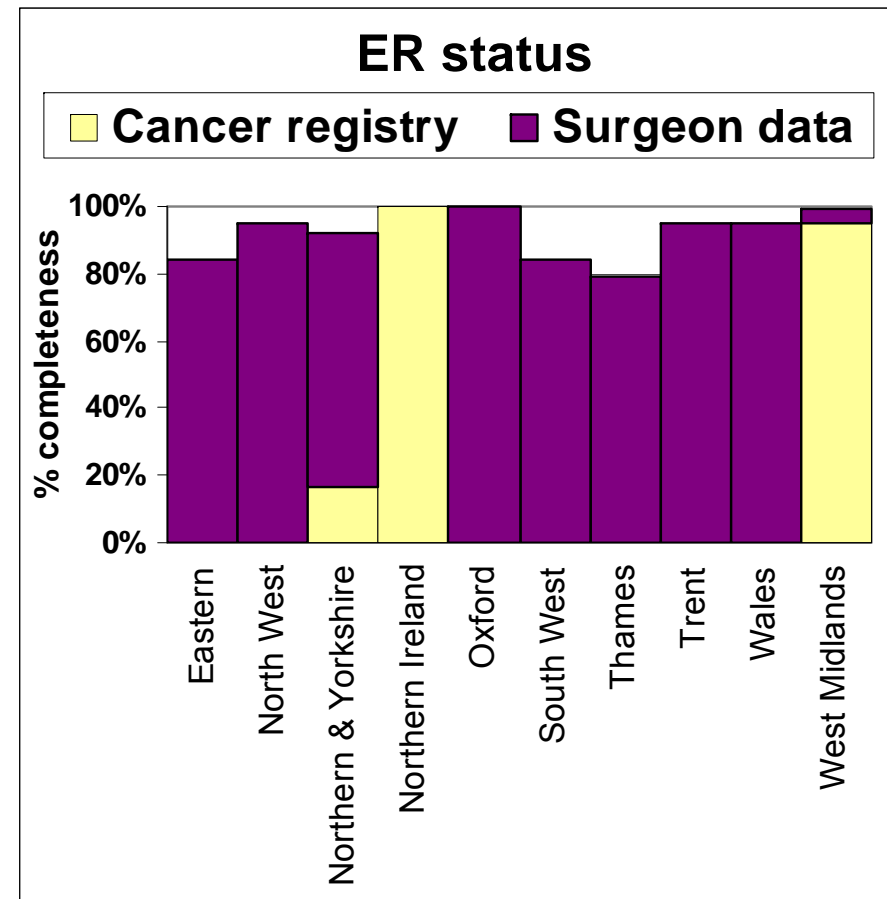
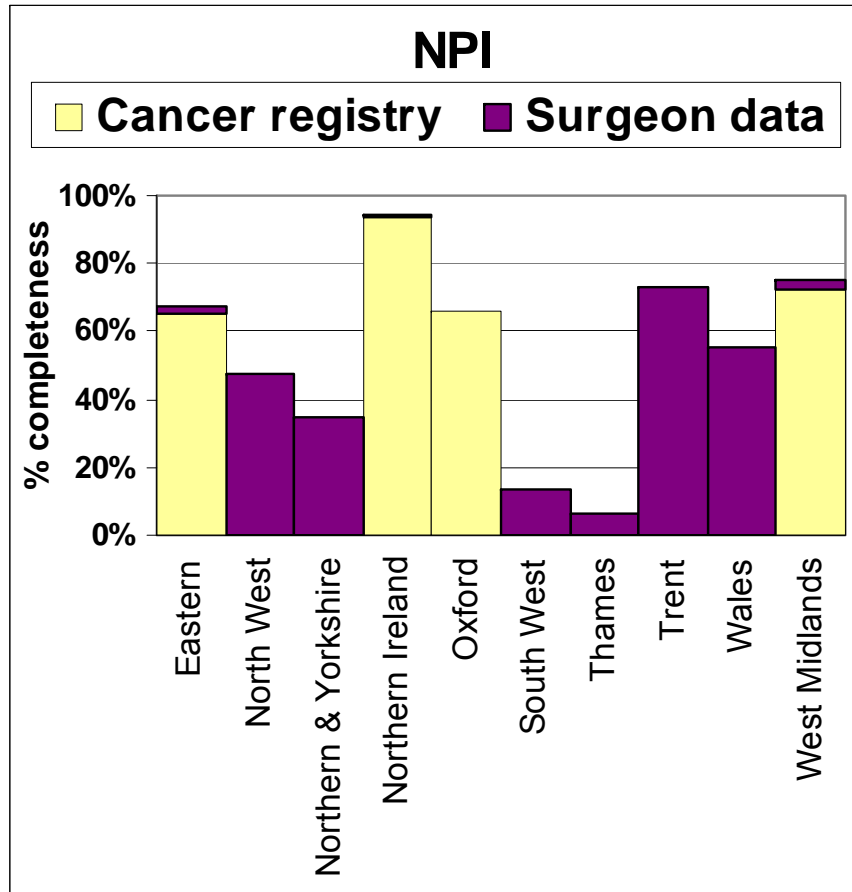


Question 11 to the Audience

BCCOM data



Comparison of BCCOM data and cancer registration data



Conclusions

- HES data can be used to supplement and improve the data on surgical treatment and chemotherapy collected by cancer registries
- Surgeons have access to many of the data items currently not well recorded by some cancer registries
 - These registries should improve data completeness by liaising with surgeons to access their data sources
- Some registries currently have no plans to record
 - invasive tumour size, vascular invasion, excision margin status, NPI score, ER status and HER 2 status
- These data items are crucial for the evaluation of patient outcomes and adherence to clinical guidelines

We can't wait until the new NCDS delivers these data items for cases diagnosed in 2014



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Thankyou



Breast Screening QARCs
Screening Units
BCCOM Steering Group
Cancer Registries
Breast Surgeons

