

Monitoring Diagnosis and Treatment of Screen-Detected Breast Cancer in the NHSBSP

Julietta Patnick

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Monitoring Screening: Principles

- Maintenance of minimum standards, continual striving for excellence
- Data items to drop out of clinical record: no special items
- Extensive reporting back to individual units with regional and national comparisons
- Performance indicators can be interrogated
- All women included, all units must submit complete records
 - 6 month time elapse before data requested

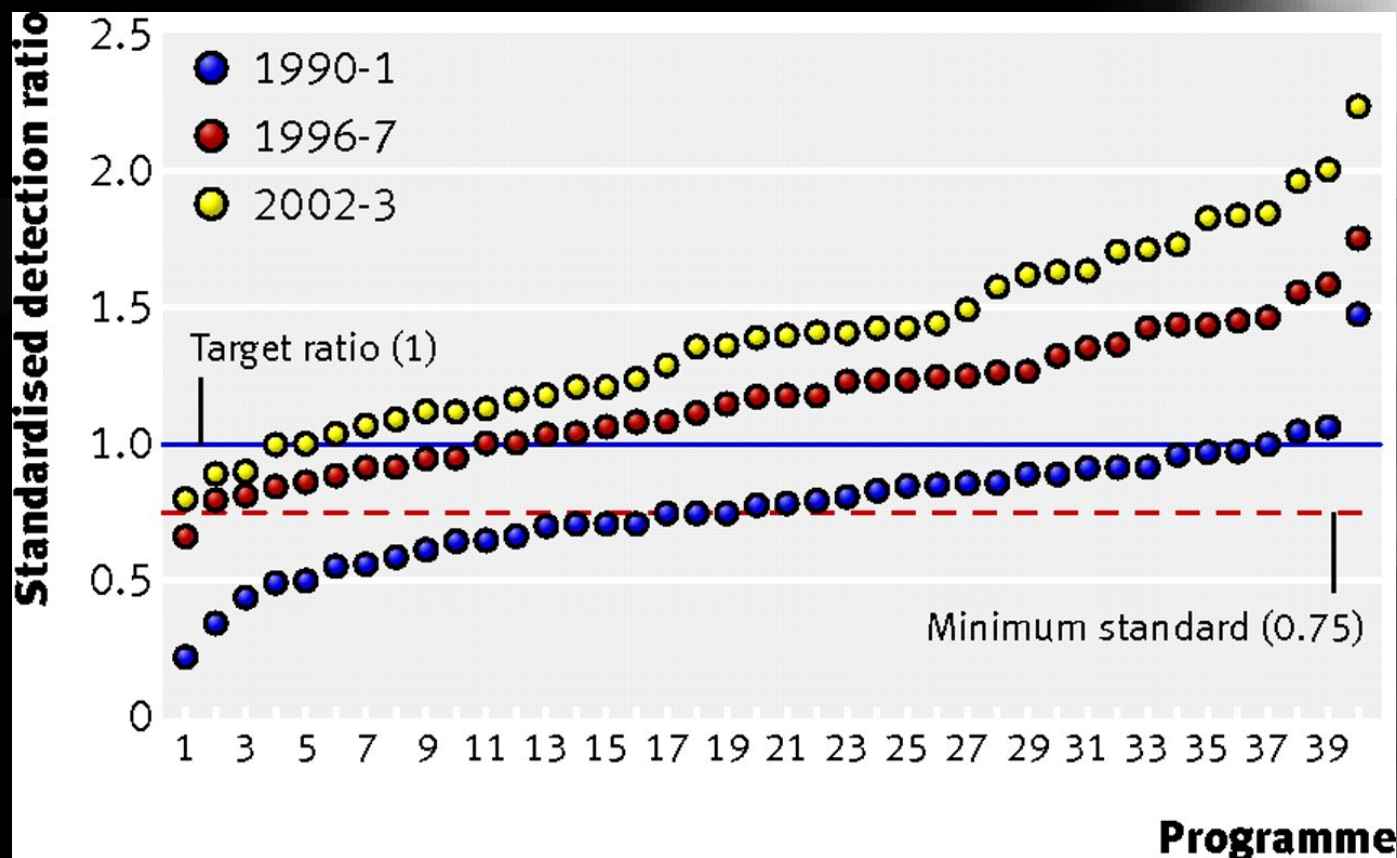
Monitoring Diagnosis

- **Standardised Detection Ratio** (observed cancers/expected cancers)
- **Cancer Detection Rate** (invasive/in situ)
- **Small Invasive Cancer Rate** (<15 mm)
- **Image Quality**
- **Radiation Dose**
- **Repeat Film Rate**
- **Assessment Rate**
- **Non-operative Diagnosis Rate**
- **Benign Biopsy Rate**
- **Interval Cancer Rate** (long term outcome)

Examples of initial standards set for the prevalent (first) round of screening for women aged 50-64

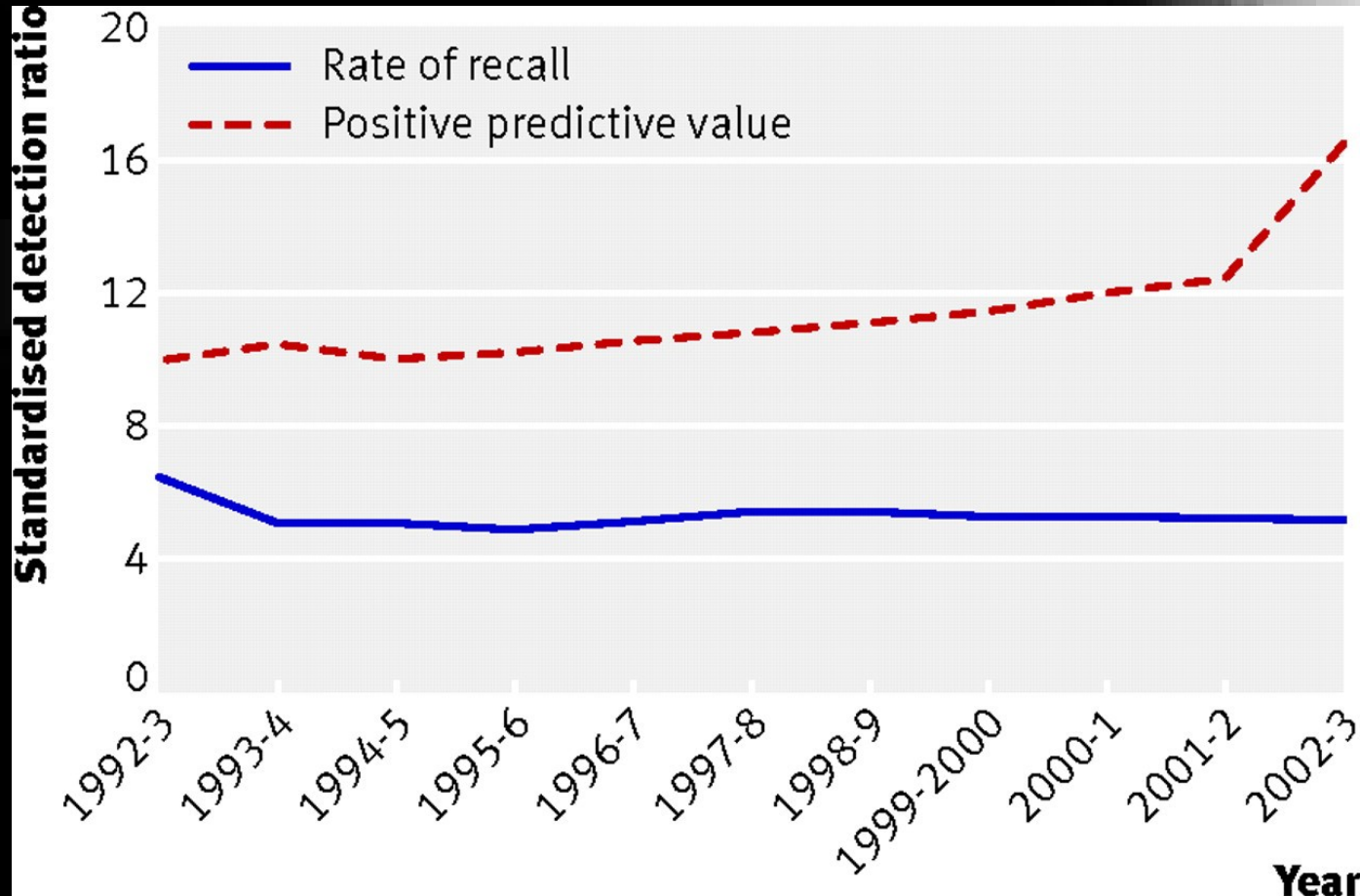
Objective	Measurement	Minimum acceptable standard	Target standard
Maximise the number of cancers detected	No of cancers detected in women invited and screened	>3.5 in 1000	>5 in 1000
Minimise the number of women referred unnecessarily for further tests	No of women referred for assessment	<10% of women screened	<7% of women screened

Prevalent screen standardised detection ratio for the 40 largest screening units in England ranked in ascending order for 1990-1, 1996-7, and 2002-3



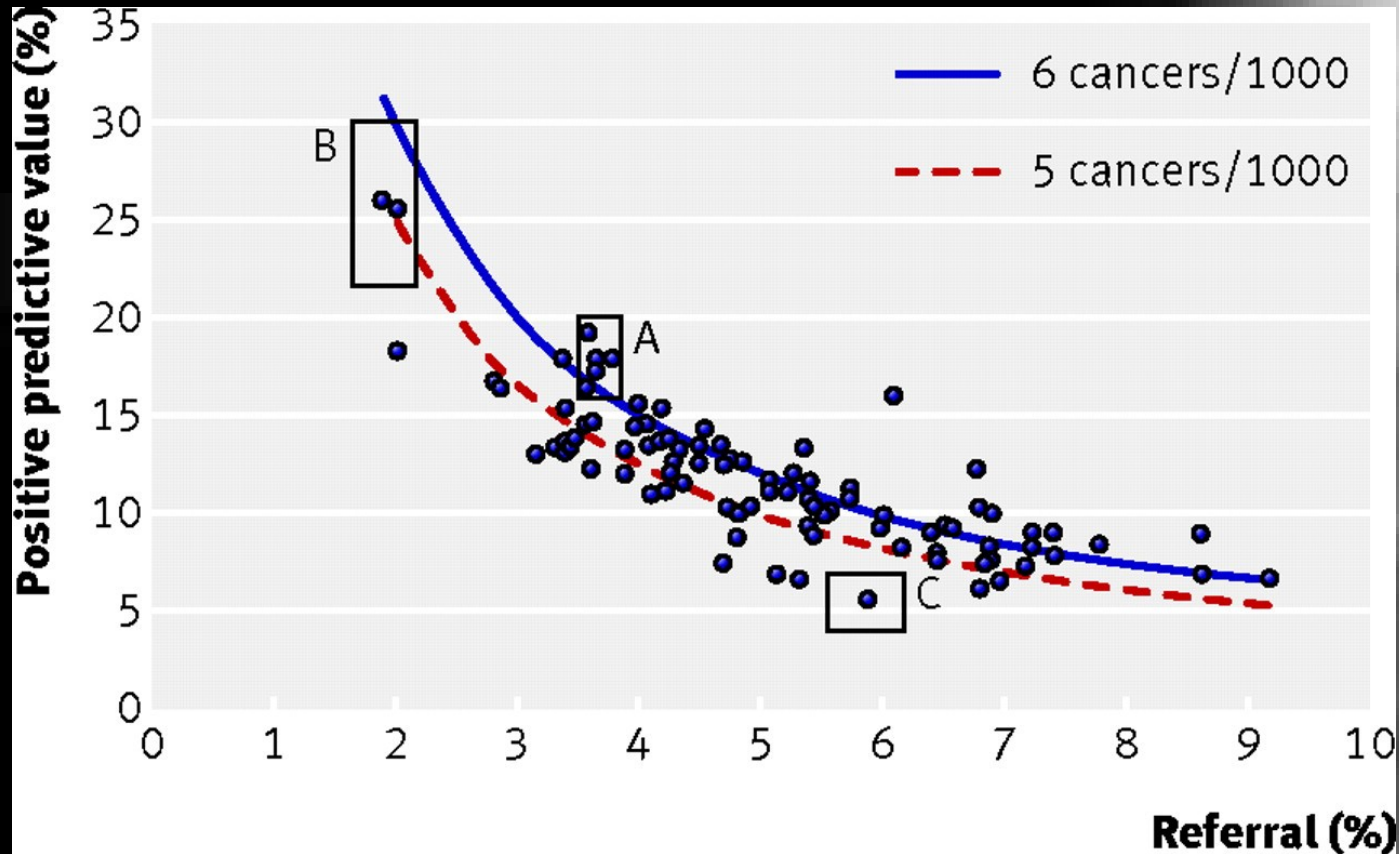
Gray, Patnick, Blanks *BMJ* 2008;336:480-483

Rate of recall for assessment at incident screening and positive predictive value of recall



Gray, Patnick, Blanks *BMJ* 2008;336:480-483

Positive predictive value of recall versus recall for assessment for all 95 UK screening units 1999-2000 (women aged 50-64). Boxes A-C highlight three example units plus 90% confidence intervals, with box A showing a unit with optimal qualities of high positive predictive value and cancer detection rates but low referral rate



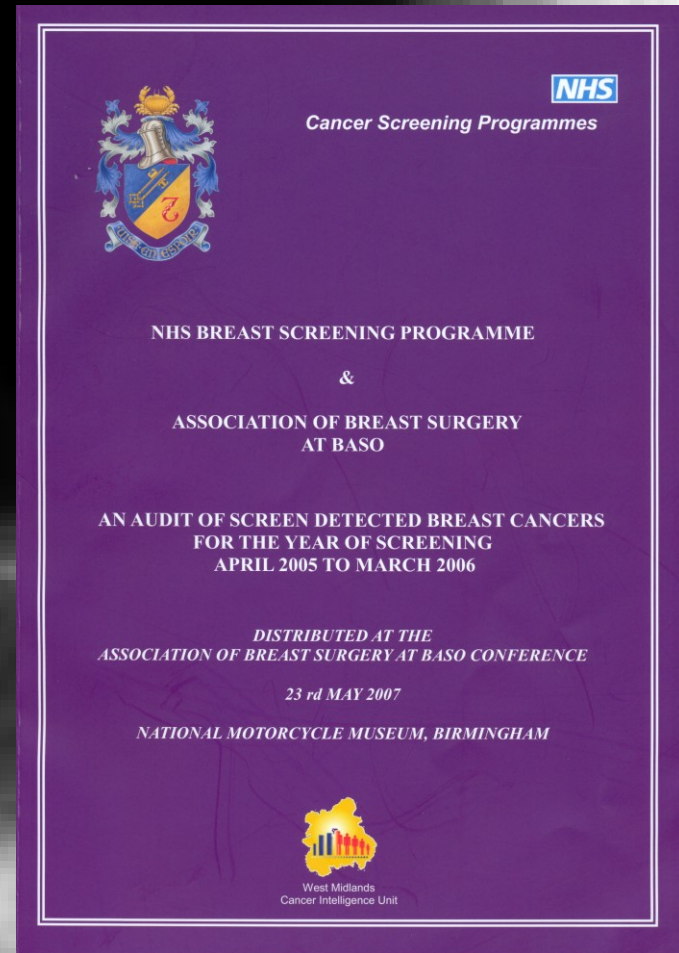
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Effect of different protocols on standardised detection ratio (SDR) for small invasive breast cancers (<15 mm)

Protocol	SDR	Rate ratio (95%CI)
One view/single reading	0.68	1.00
One view/double reading (recall if one reader suggests)	0.93	1.37 (1.15 to 1.62)
Two views/single reading	0.97	1.43 (1.15 to 1.77)
One view/double reading (consensus)	1.00	1.47 (1.21 to 1.78)
Two views/double reading (recall if one reader suggests)	1.05	1.54 (1.26 to 1.87)
Two views/double reading (consensus)	1.12	1.64 (1.31 to 2.06)
One view/double reading with arbitration)	1.18	1.73 (1.40 to 2.13)
Two views/double reading with arbitration	1.28	1.88 (1.49 to 2.37)

Monitoring Treatment: Principles

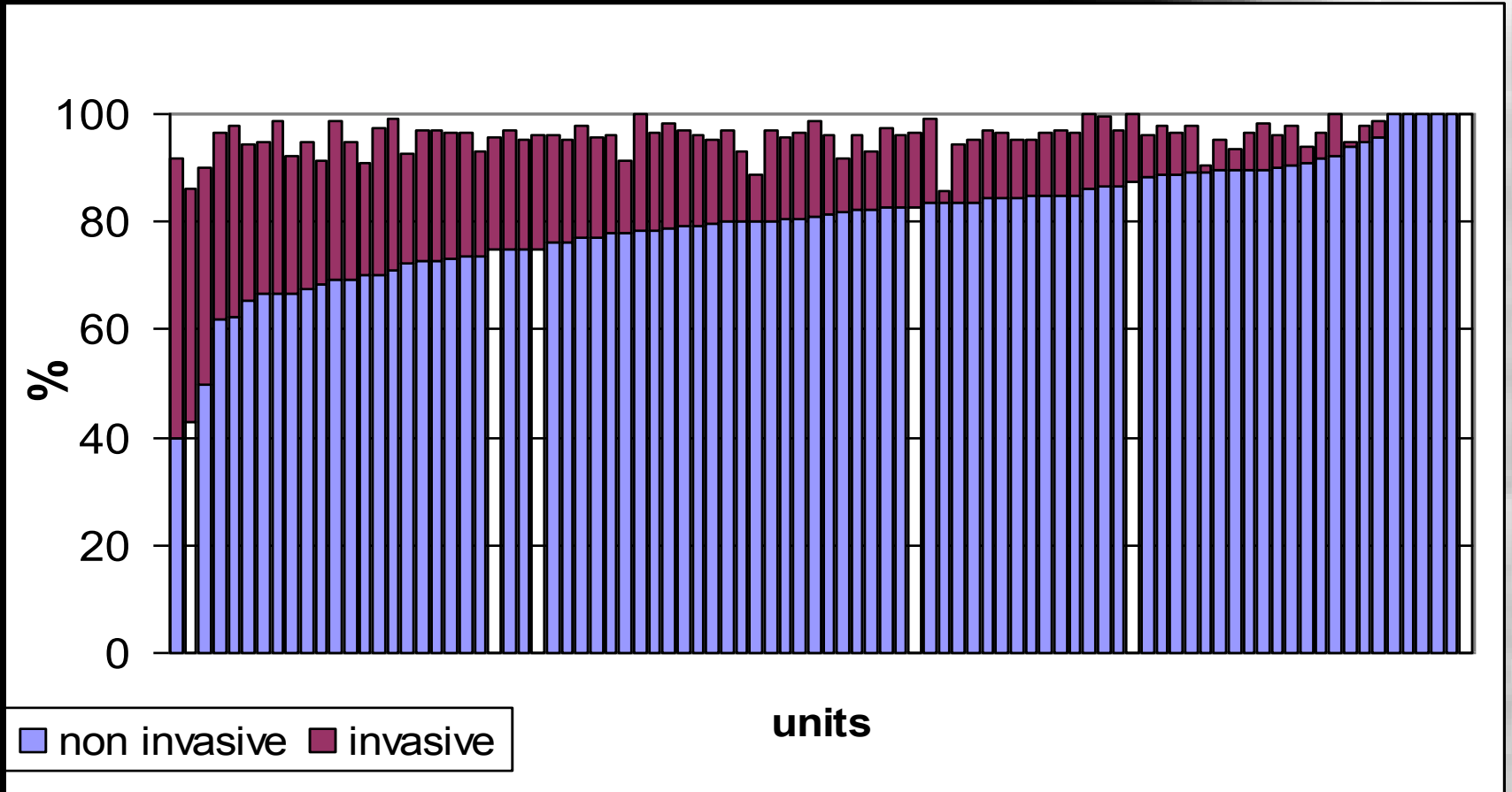
- Outside screening programme, so must get cooperation of others
- No new data items, use clinical record
- Extensive reporting back to individual units with regional and national comparisons



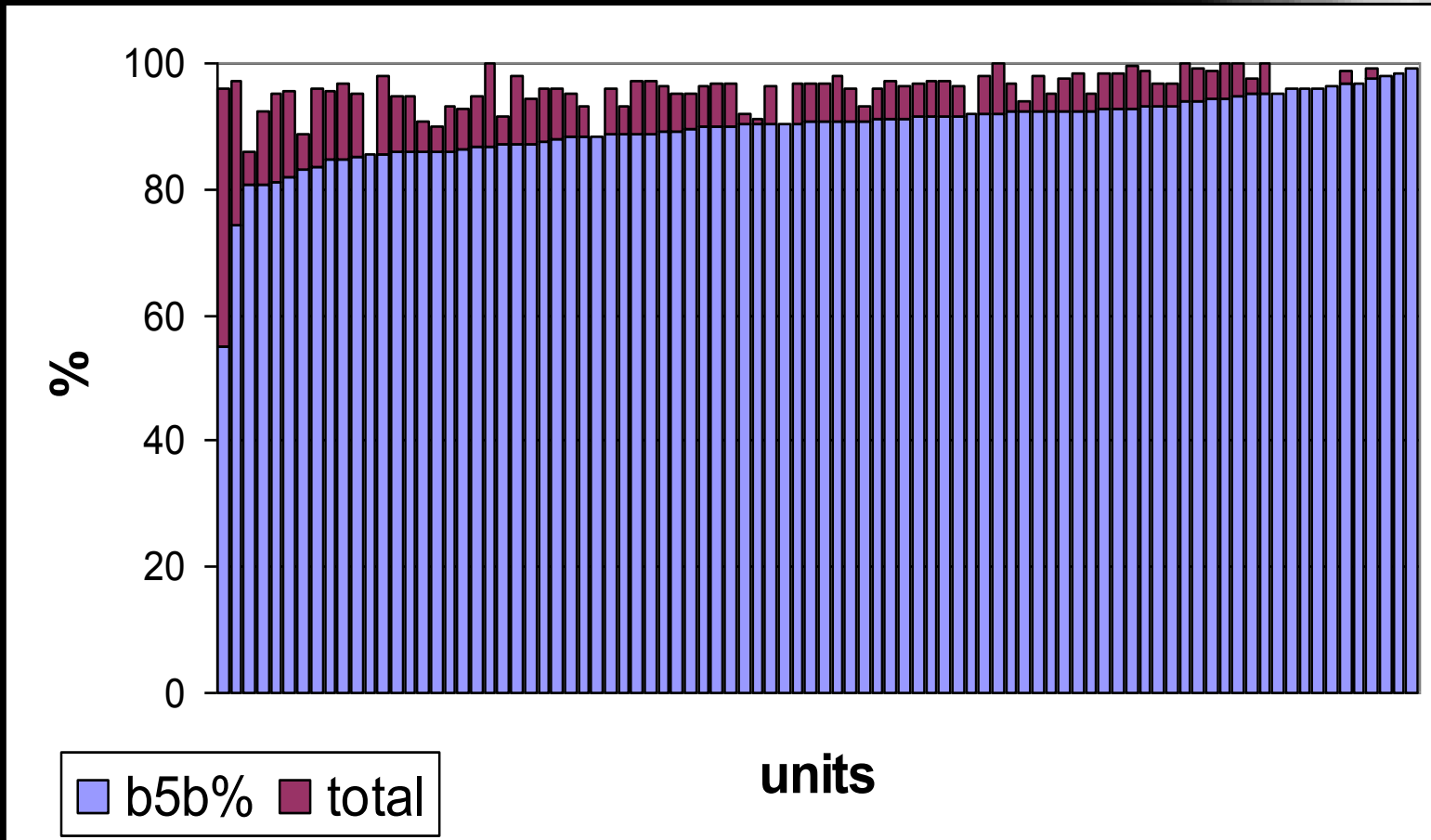
Monitoring Treatment: Data Items

- **Cancers** (invasive vs in situ)
- **Non-operative diagnosis** (accuracy)
- **Surgical treatment** (conservation vs mastectomy)
- **Lymph nodes** (status, number, procedure etc)
- **Waiting times**
- **Surgical caseload**
- **Number of operations**
- **Adjuvant therapy**
- **Survival**

National Analysis of Individual Unit Data: Non-Operative Diagnosis



National Analysis of Individual Unit Data: Non-Operative Diagnosis



Rates of non-operative diagnosis for screening programme (minimum standard 70%, target standard \geq 90%)

Year	Women with non-operative diagnosis (%)	Regions meeting minimum standard (%)	No (%) regions meeting target
1997/8	71	68	0
1998/9	81	100	1 (7)
1999/2000	85	100	1 (10)
2000-1	87	100	2 (15)
2001-2	89	100	6 (45)

Blanks RG, Wallis MG, Moss SM. J Med Screen 1998

Conclusions

- Detailed monitoring of diagnosis and treatment is possible
- Feedback and “added value” to those submitting data is vital
- Cooperation and goodwill is essential for collection of treatment data in particular
- Total quality management becomes a way of life



Cancer Screening Programmes

Thanks for listening

www.cancerscreening.nhs.uk



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