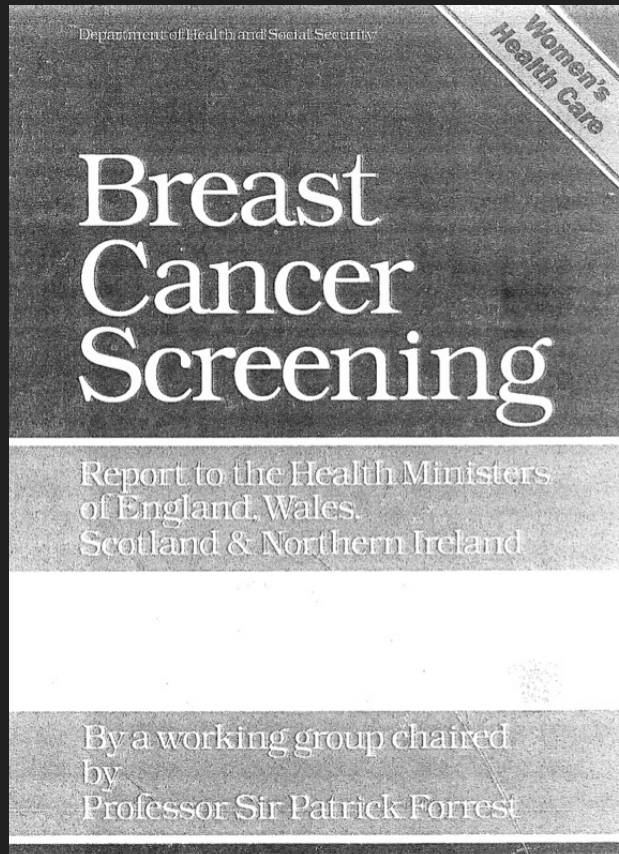


# Personalised screening data: Experiences from the UK

Dr Fleur Kilburn-Toppin, Consultant Radiologist MA MB BCHir FRCR  
Addenbrooke's Hospital, Cambridge UK



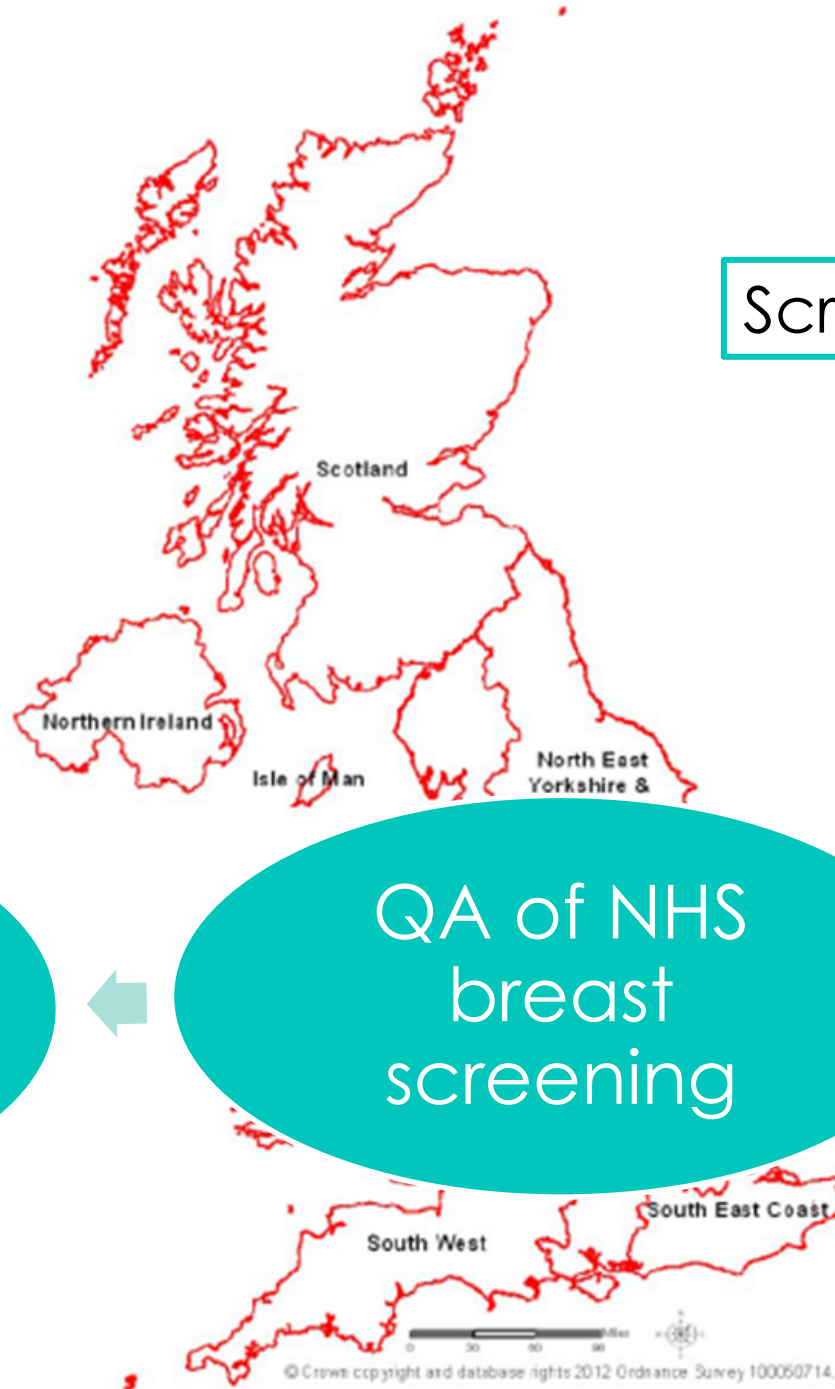
# Screening in the UK- NHS BSP





# Public Health England

Screening QA Service (SQAS)

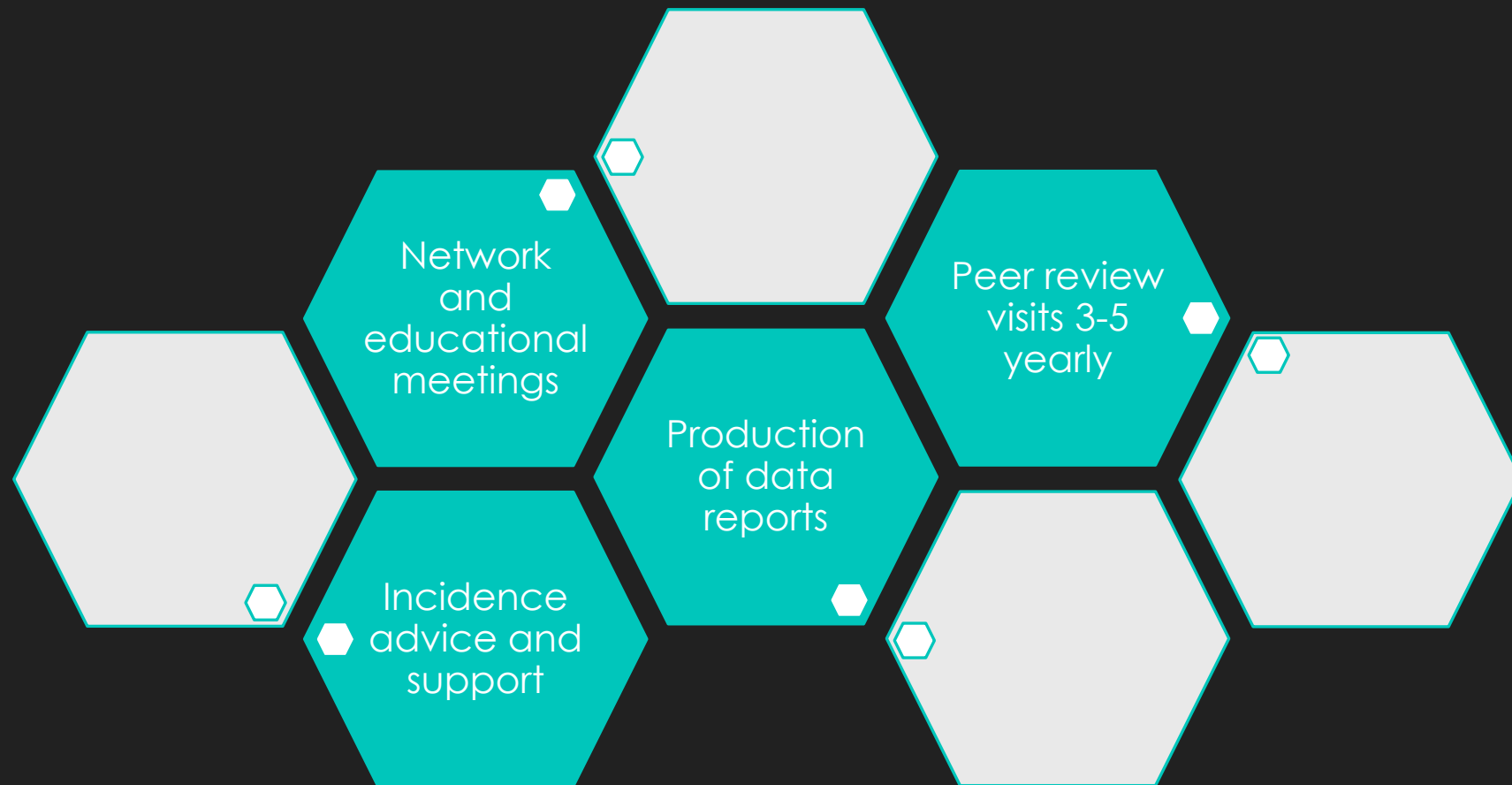


Quality  
improvement  
activities

QA of NHS  
breast  
screening

Assessment  
process

# SQAS





# Using standards to improve quality

QUALITY ASSURANCE GUIDELINES  
FOR BREAST CANCER  
SCREENING RADIOLOGY

Second edition

NHSBSP Publication No 59  
March 2011



**NHS Breast Screening Programme**  
Consolidated standards

April 2017

Public Health England leads the NHS Screening Programmes

Standards	Acceptable	Achievable
Coverage	70%	80%
Uptake	70%	80%
36 month screening length	90%	100%
Non-operative diagnosis rate	>90%	>95%
Interval cancer rate	1	1.4

Outcomes: rates of interval cancers
<0.65/1000 diagnosed <12 months
<1.40/1000 diagnosed between 12 and < 24 months
<1.40/1000 diagnosed between 24 and < 36 months

# Interval cancers

- A cancer diagnosed between a previous (normal) screening episode and the next screen
- An inevitable aspect of screening
- Review the previous screening mammograms and give information to the woman (if she wishes)
- If consensus view mammographic changes should have been picked up, services should follow duty of candour



Public Health  
England



## **NHS Breast Screening Programme** Reporting, classification and monitoring of interval cancers and cancers following previous assessment

August 2017

Public Health England leads the NHS Screening Programmes



## **Regulation 20: Duty of candour**

Information for all providers: NHS bodies,  
adult social care, primary medical and  
dental care, and independent healthcare

March 2015

Category	Radiological	Action warranted	DOA/ DOC
1	Normal or benign mammographic features	No reason to recall	Disclosure of audit
2	Seen with hindsight, difficult to perceive, not clearly malignant	May provide learning Not all readers would recall	Disclosure of audit
3	Appearance clearly suggests malignancy	<ul style="list-style-type: none"> <li>• Trust process</li> <li>• Formal Apology</li> <li>• Notifiable safety incidence</li> <li>• Review by CQC at inspection</li> </ul>	



# NHS Breast Screening Programme



Cancer Screening Programmes

invite women to screening

record details of imaging, recall to assessment,  
cancers diagnosed and interval cancers

notify women and GPs of results

Manage the high risk screening  
programme

Produce the K62 return



## Breast Screening Programme

Quality Statement for 2016-17

Published 31 January 2018

This document is designed to accompany the main publication document and includes contextual information, the methods used to compile the statistics and other background information readers may find useful.

# Quality of the data is of paramount importance



# Assessing high quality in breast cancer screening

Patricia A. Carney, PhD  
Edward A. Sickles, MD  
Barbara S. Monsees, MD  
Lawrence W. Bassett, MD  
R. James Brenner, MD

## Identifying Minimally Acceptable Interpretive Performance Criteria for Screening Mammography<sup>1</sup>

Radiology

Measure*	Low Performance Range	Percentage of BCSC Radiologists in Low Performance Range
Sensitivity	<75	18.0
Specificity	<88 Or >95	47.7
Recall rate	<5 Or >12	49.1
PPV <sub>1</sub>	<3 Or >8	38.4
PPV <sub>2</sub>	<20 Or >40	34.0
CDR	<2.5 Per 1000	28.4

\* CDR = cancer detection rate, PPV<sub>1</sub> = proportion of all women with positive screening examinations who are given a diagnosis of breast cancer, PPV<sub>2</sub> = proportion of all women with positive screening examinations who are given a recommendation for biopsy at the end of the imaging work-up.

Sensitivity

Specificity



## Cancer detection rate

- proportion of cases reported which the reader recommended be recalled to assessment and were diagnosed with cancer

## Recall Rate

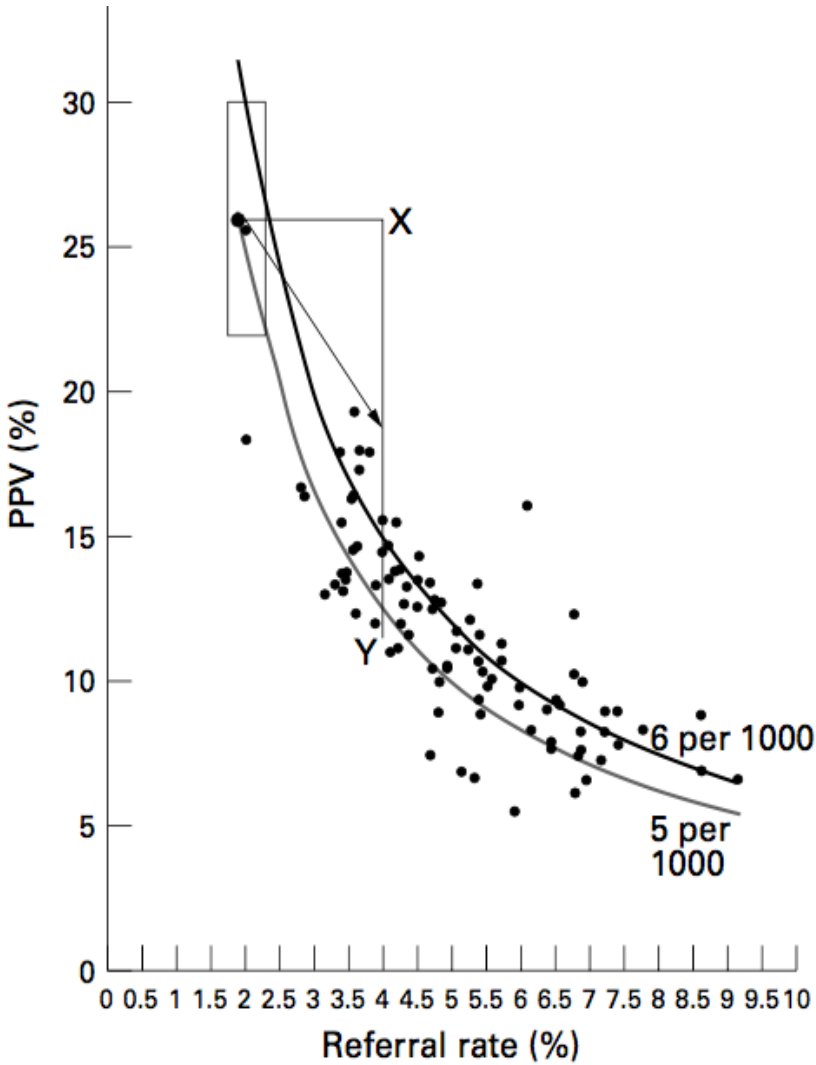
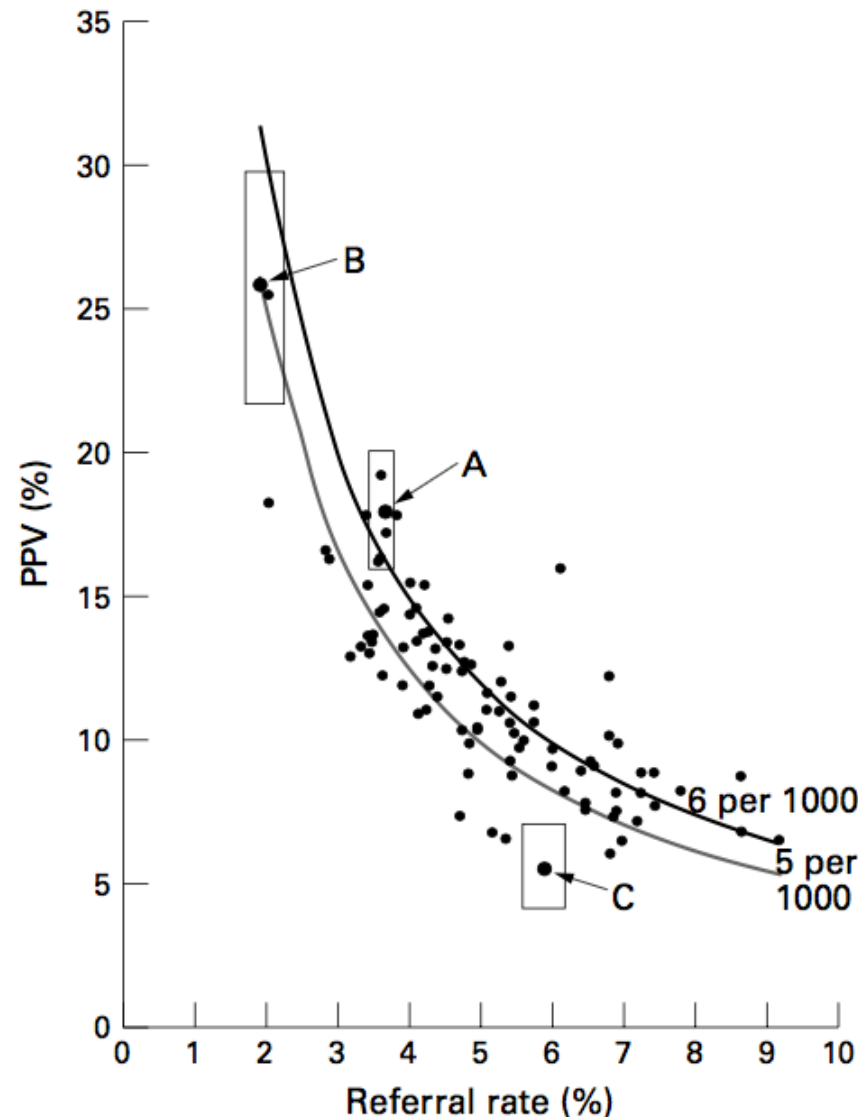
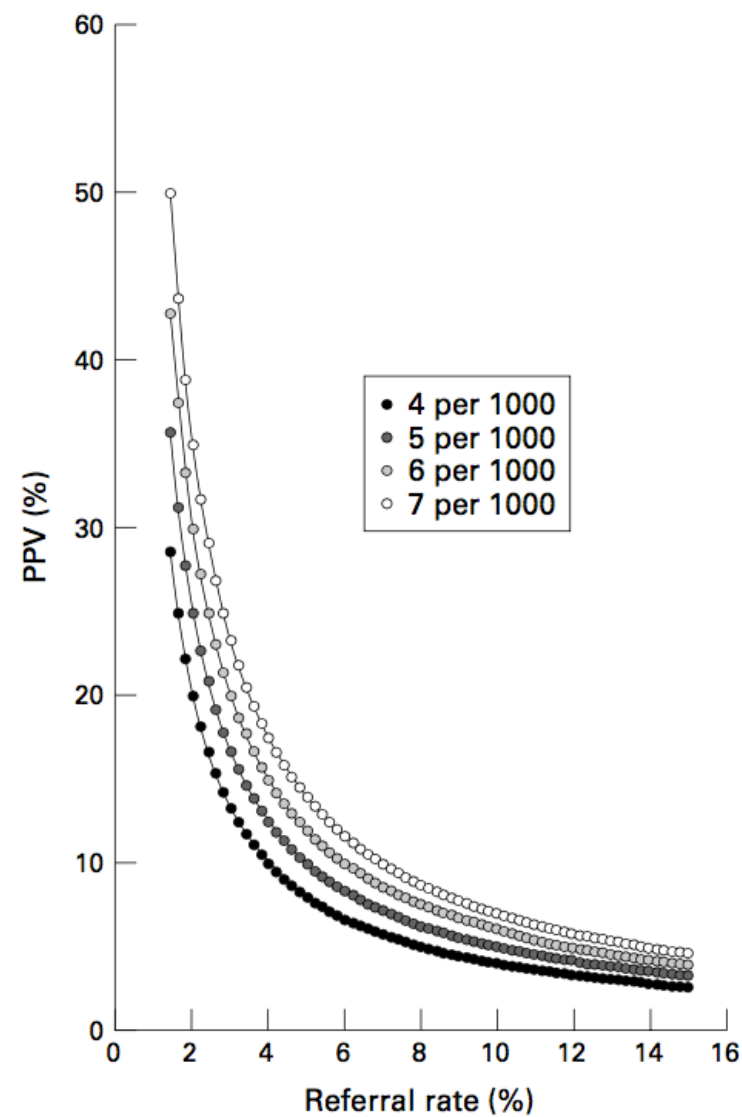
- Percentage of women screened who were referred for further assessment

## Positive predictive value

- percentage of cases the reader recommended be recalled to assessment which were diagnosed with cancer

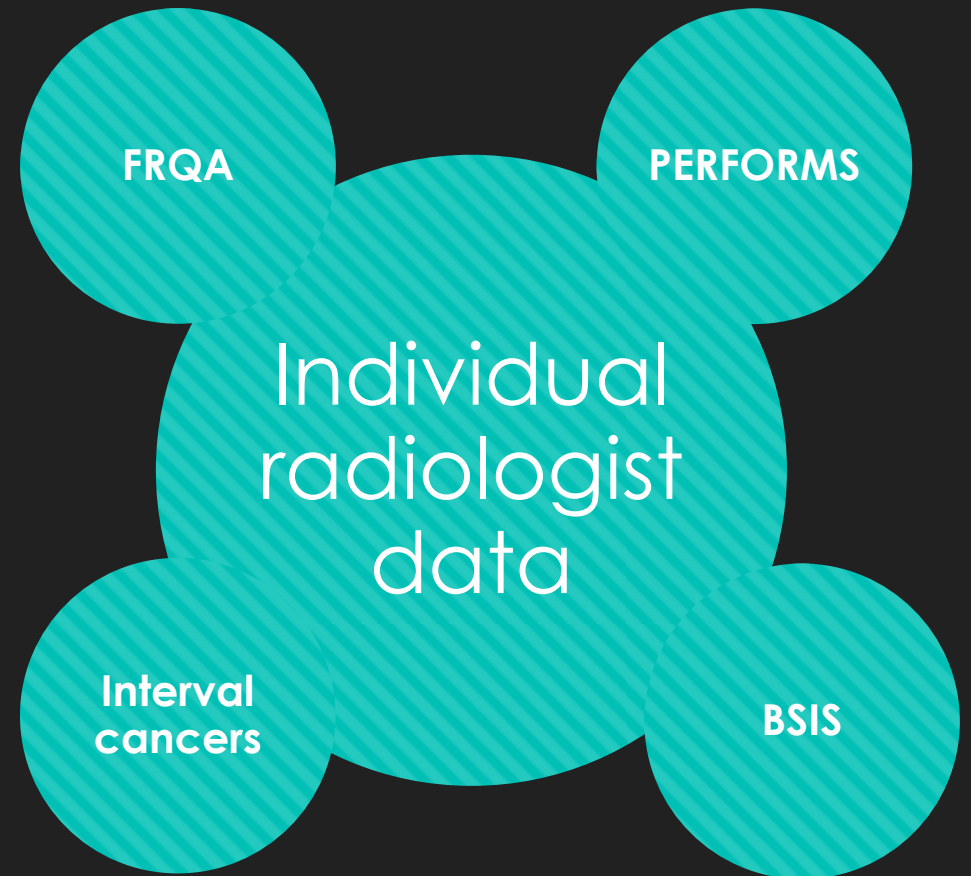
Monitoring and evaluating the UK National Health Service Breast Screening Programme: evaluating the variation in radiological performance between individual programmes using PPV-referral diagrams

R G Blanks, S M Moss, M G Wallis

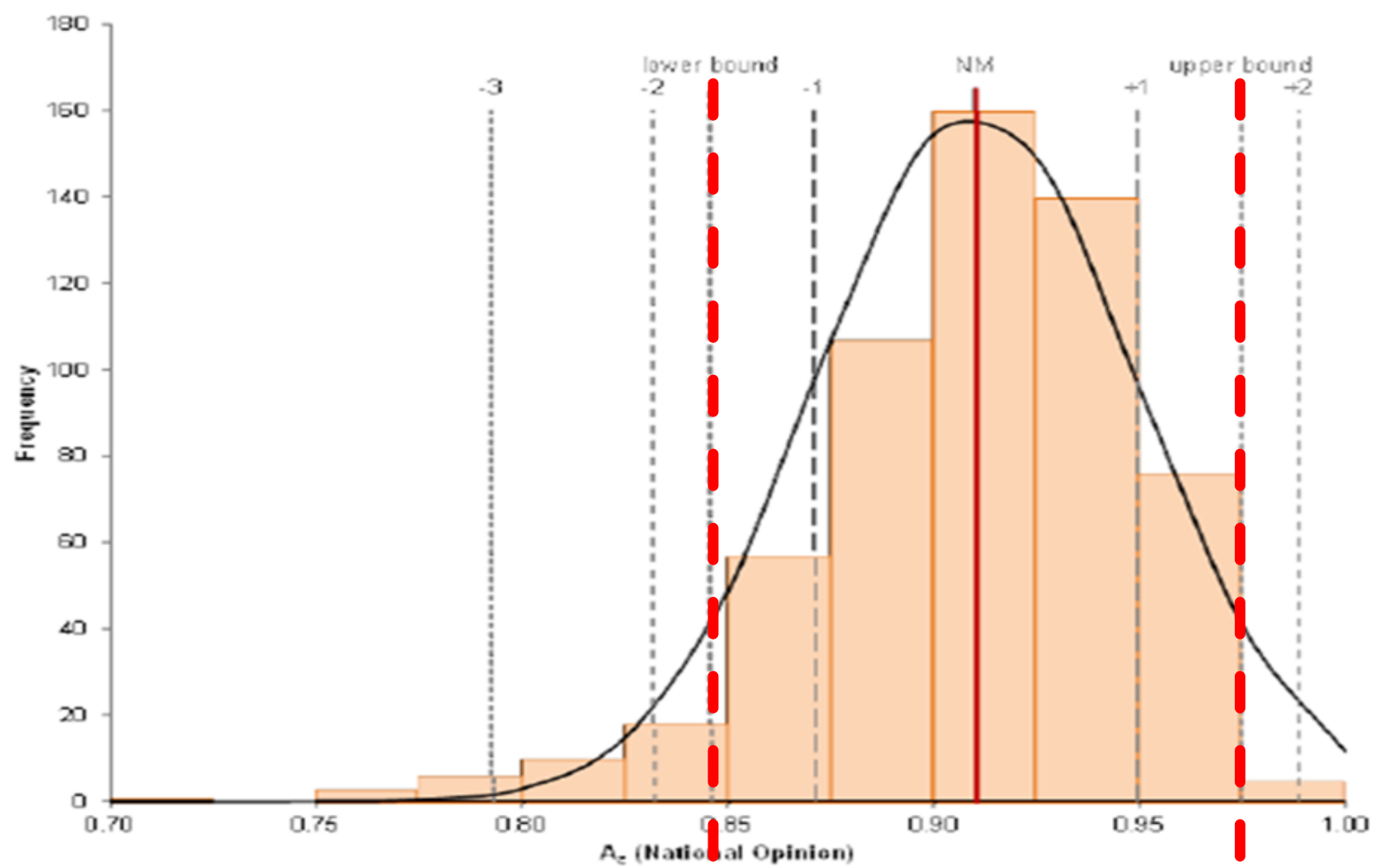


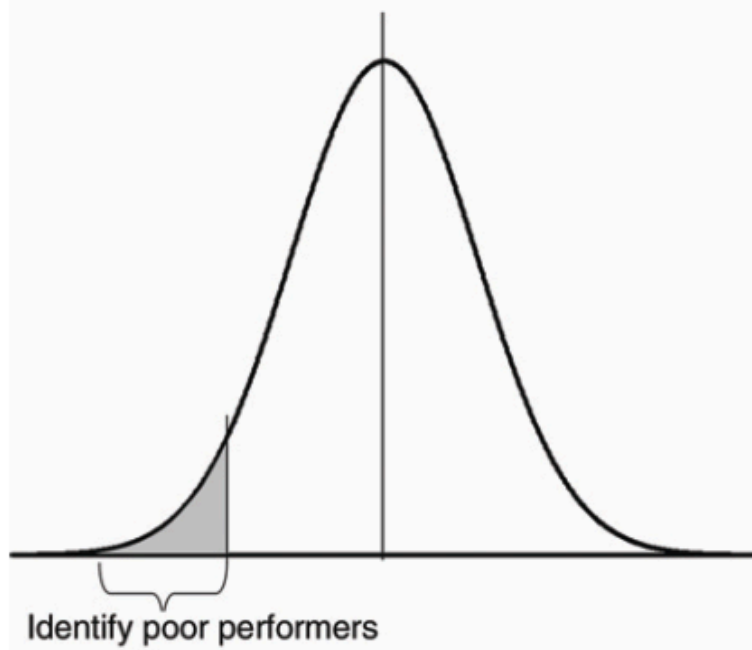
# Performance metrics for individual radiologists

- Ability to analyse individual radiologist data allows greater insight into practice
- Allows improvement at local and national level
- Good clinical governance not just about achieving standards

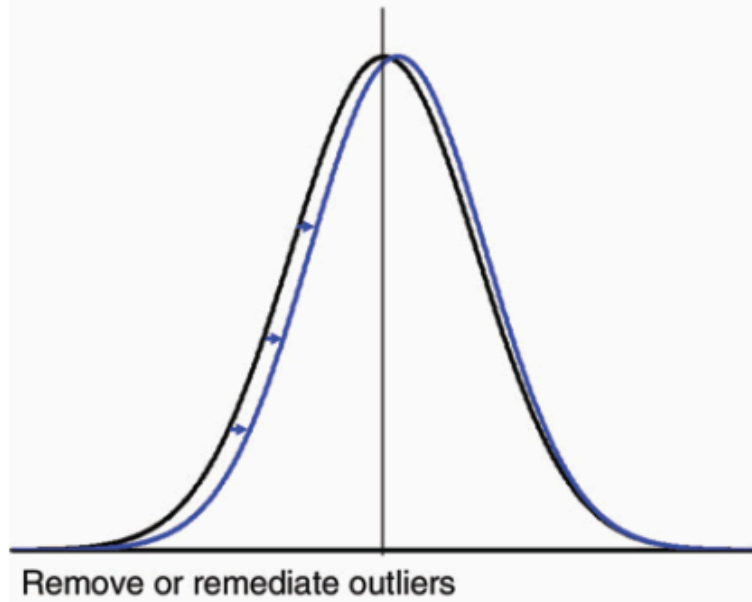




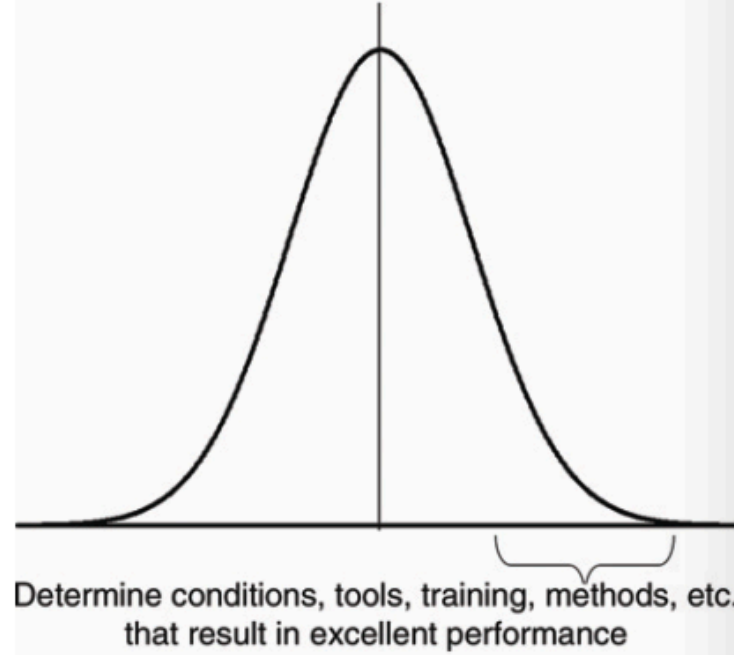




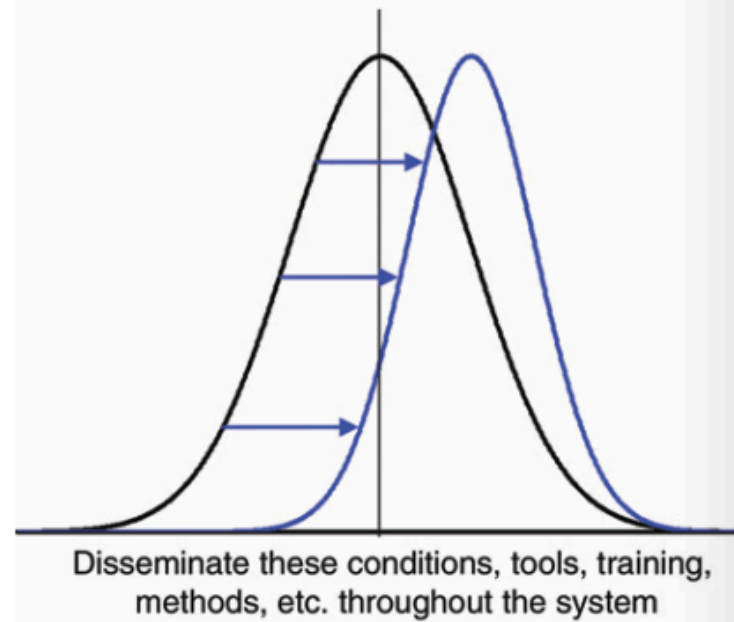
a.



b.



a.

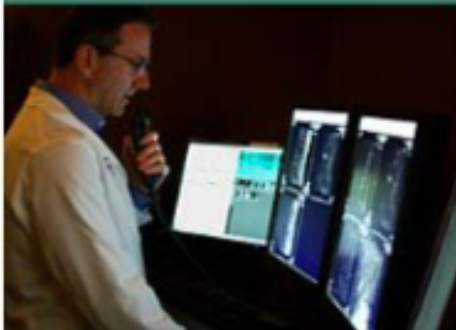


b.

# BSIS

## Breast Screening Information System

Film Reading



Surgery



KC62



# BSIS

## Individual reader

- Insight into reading practice
- Identify personal strengths and weaknesses
- Enable targeting of personal development

## Programme

- Greater detail than overall statistics
- Inform film reading developments and strategies
- Maximise positive impact of variation, match reader strengths

## Service

- inform policy, guidance and standards



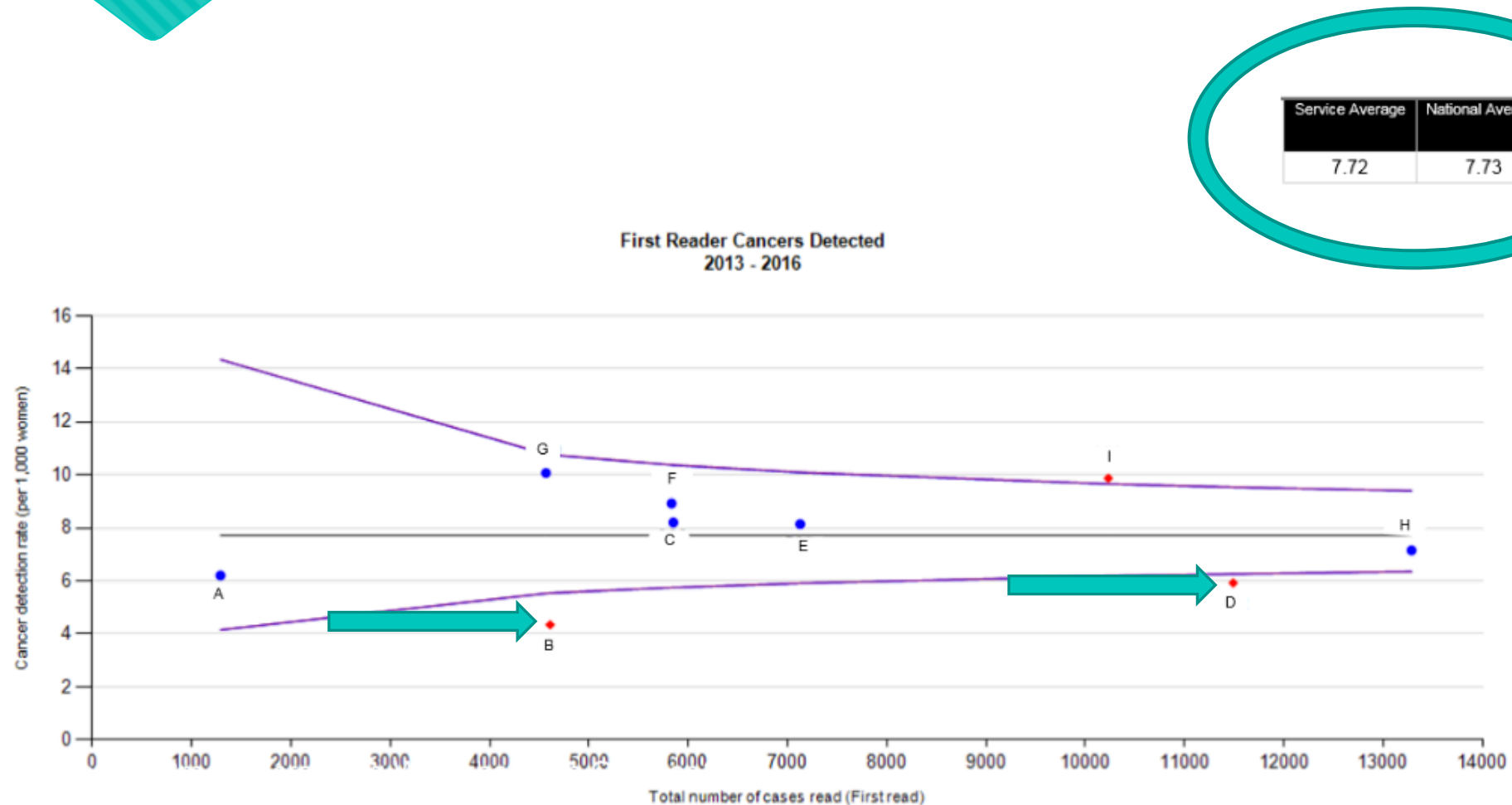
## Film Reader Summary - First Reader

2013 - 2016									
Unique Code	Total Cases Reported as First Reader	Total Recalled to Assessment	Recall Rate	Total Cancers Detected	Cancer Detection Rate	PPV	Total Discrepant Cancers	Discrepant Cancer Rate	
X	9494	348	3.7	64	6.7	18.4	2	0.2	
X	11775	536	4.6	85	7.2	15.9	10	0.8	
X	6981	443	6.3	46	6.6	10.4	5	0.7	
X	3071	144	4.7	16	5.2	11.1	6	2.0	
X	14784	398	2.7	119	8.0	29.9	9	0.6	
X	17081	398	2.3	123	7.2	30.9	11	0.6	
X	14453	340	2.4	133	9.2	39.1	7	0.5	
X	12112	362	3.0	98	8.1	27.1	9	0.7	
<b>Service Overall</b>	<b>89751</b>	<b>2969</b>	<b>3.3</b>	<b>684</b>	<b>7.6</b>	<b>23.0</b>	<b>59</b>	<b>0.7</b>	

### Discrepant Cancer Rate

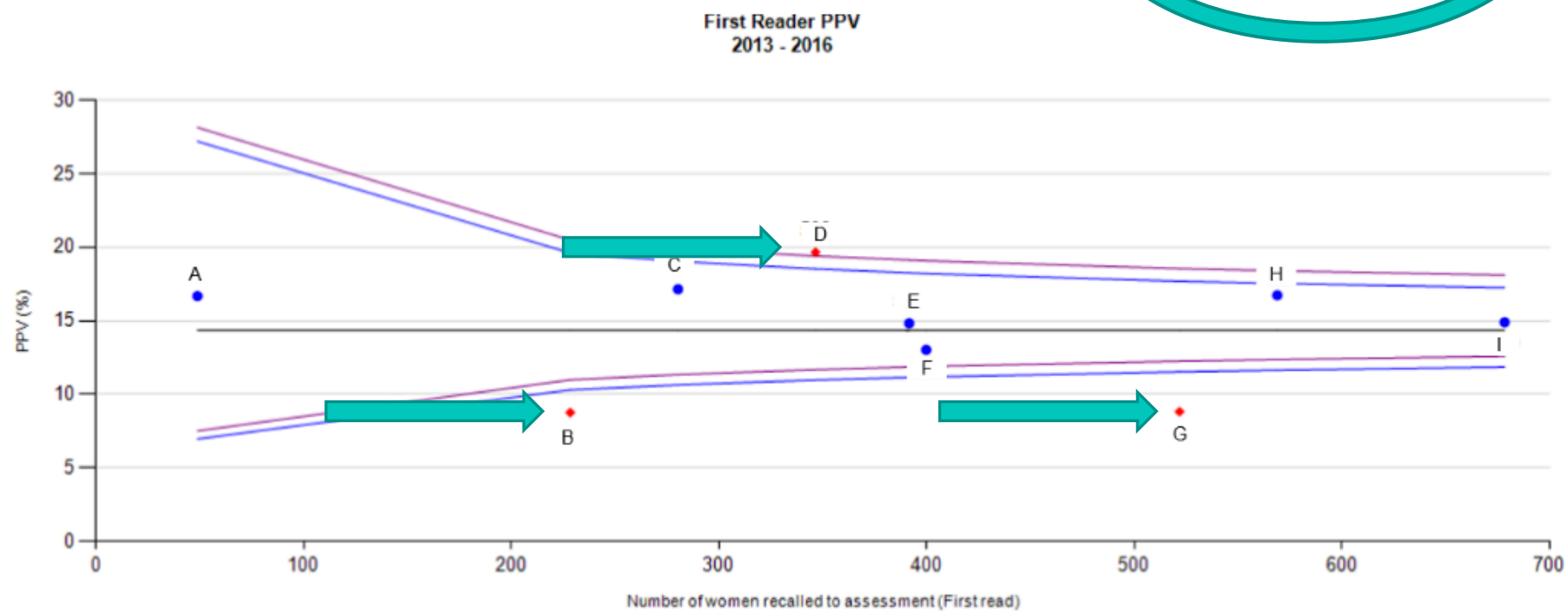
- proportion of cases reported which the reader recommended be returned to routine recall and were recalled to assessment by another reader and diagnosed with cancer

# Cancer detection rate



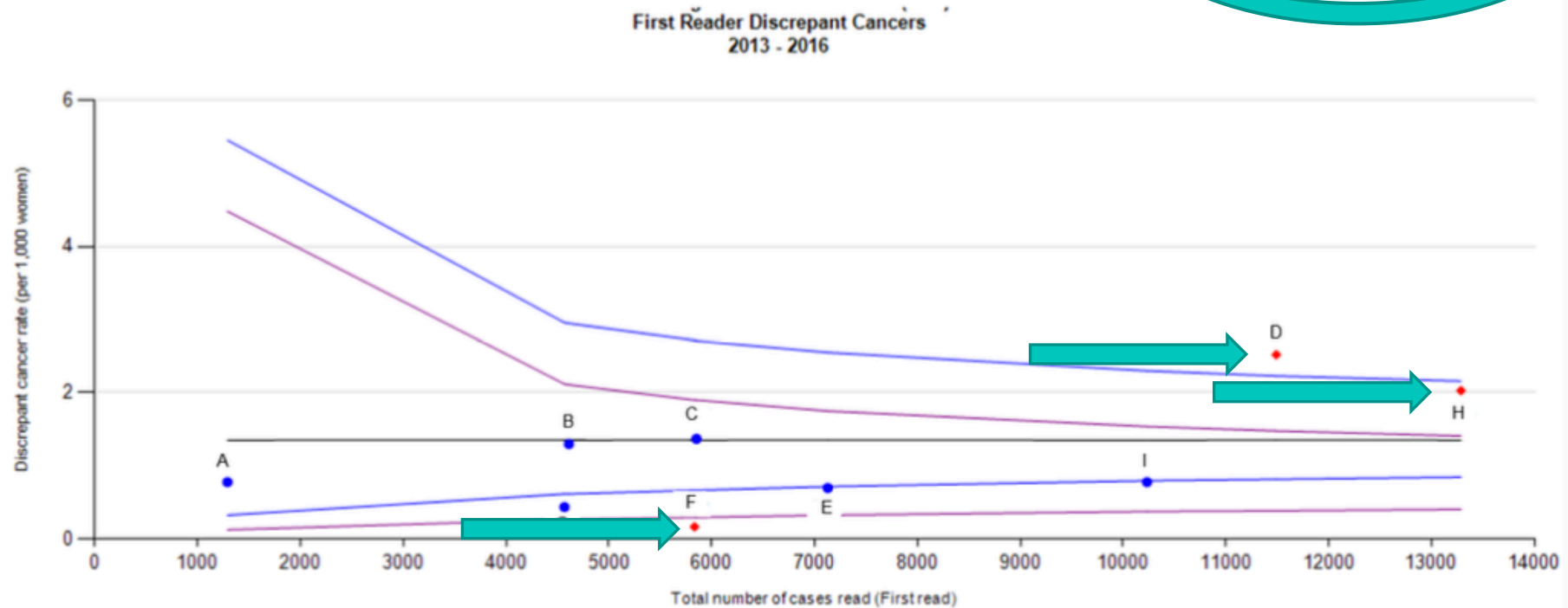
# PPV

Service Average	National Average
14.34	15.14



# Discrepant cancer rate

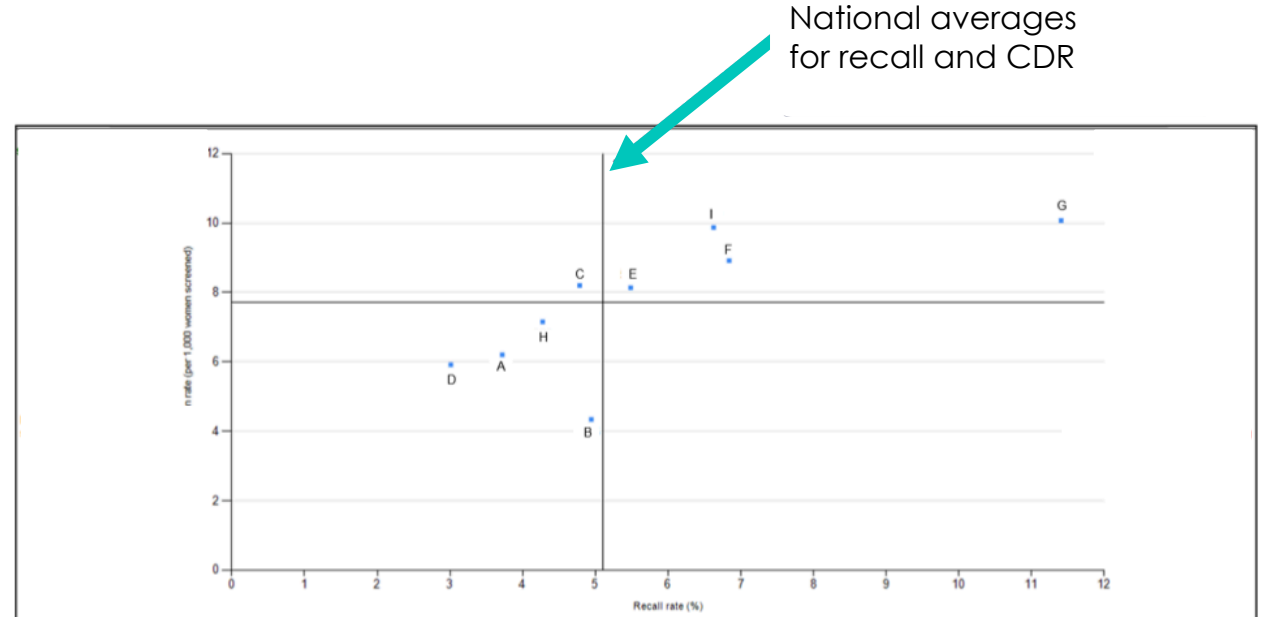
Service Average	National Average
1.35	0.76

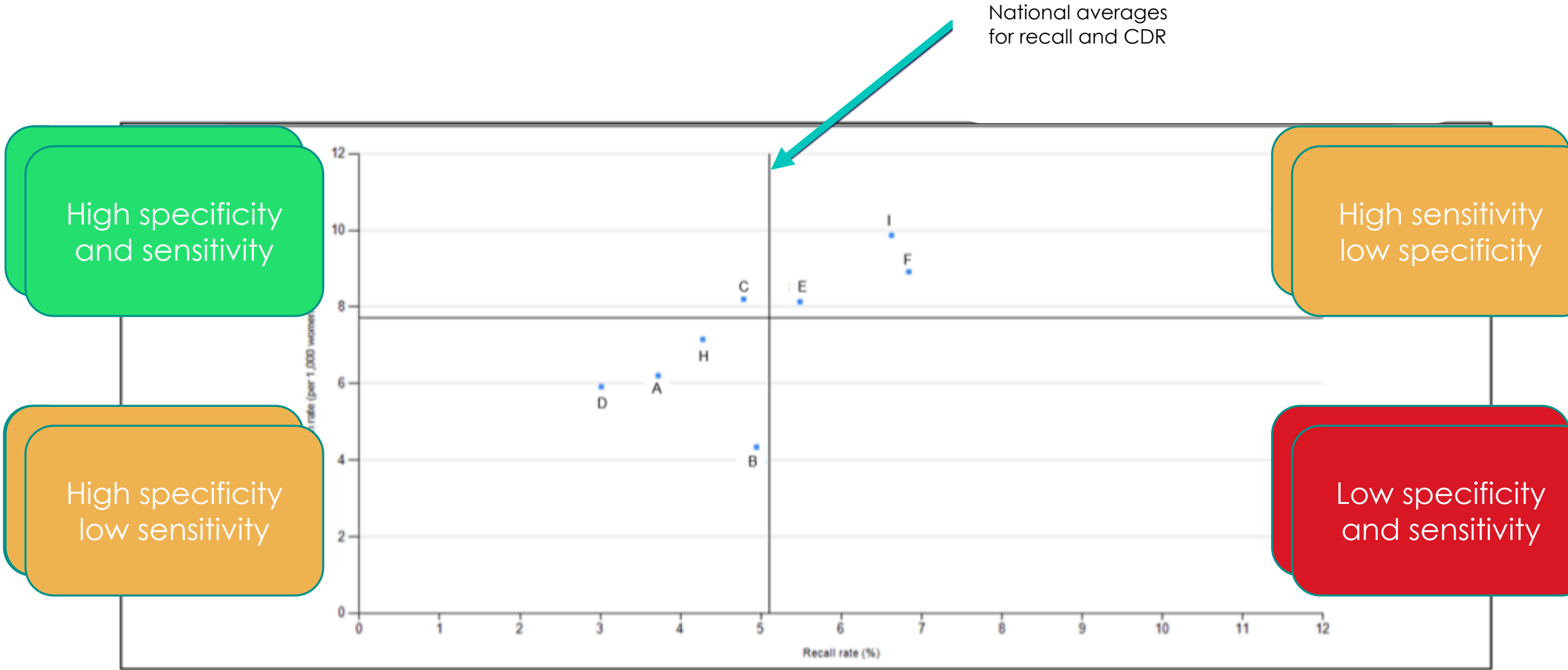




# Quadrants

- Overview of performance across your service and readers
- Highlight any specific service wide issues
- Highlight any specific readers with strengths & weaknesses
- Inform reading pairings
- Explain your current assessment clinics





### Possible actions

- No actions needed
- Consider whether there are any possible learning points from their film reading method

### Possible actions

- Review false positive recalls

### Possible actions

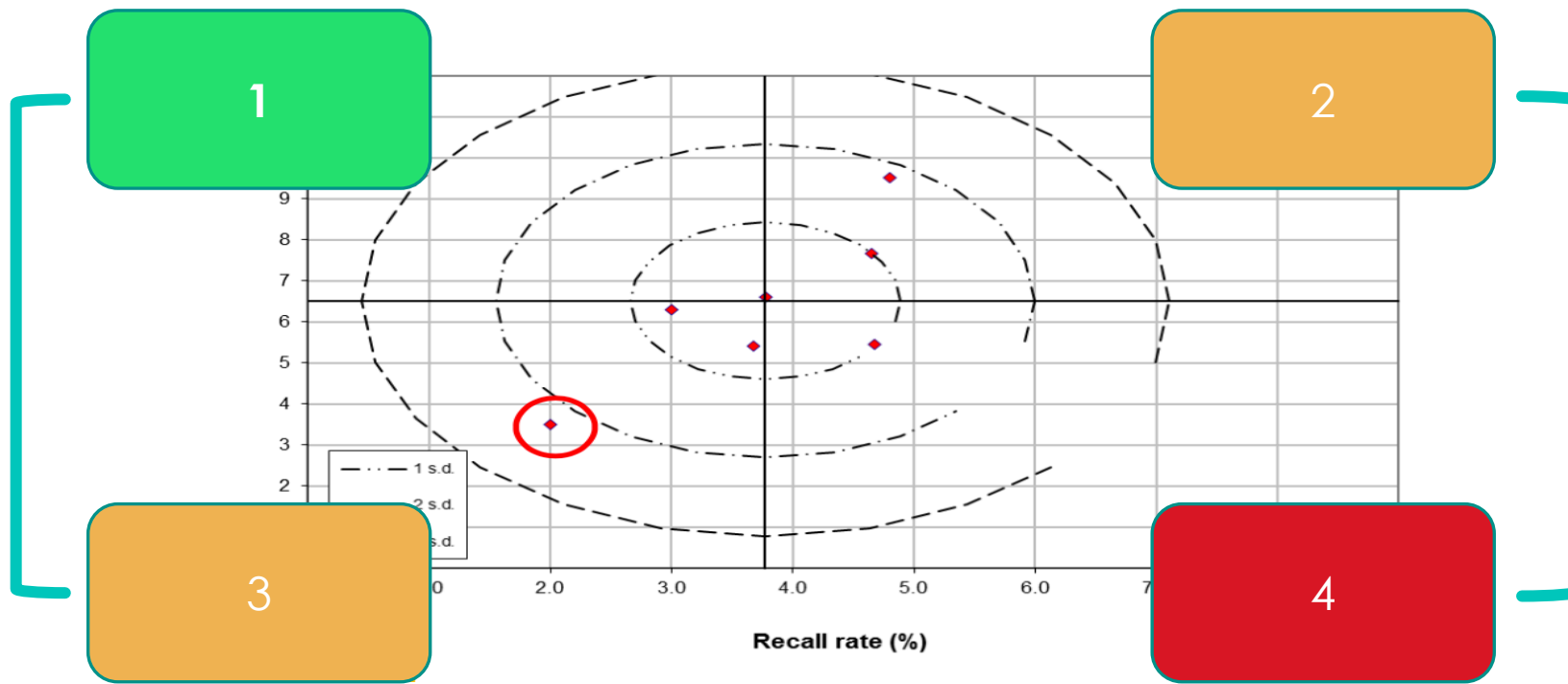
- Increase recall rate?
- Avoid other similar readers
- Do not arbitrate alone
- Review missed cancers

### Possible actions

- Review missed cancers
- Review false positive recalls
- Potential training issue

Recall rate (%)

Lower recalls  
from  
arbitration



Higher recalls  
from  
arbitration

**Reader 1**

**Reader 2**

**Outcome**

1

+

4

More arbitration cases, opportunity to reduce recall rates

2

+

3

More arbitration cases, opportunity to increase cancer detection

# Role of director of breast screening



- Hold meetings with each reader to discuss their results
- Ensure that they are confident in interpreting the reports
- Draw up a service wide strategy if performance of the service is low
- Support staff with poor performance



# What to do with poor performance



- Understand context: one off, persistent, gradual decline into poor performance?
- Understand factors:
  - poor reading conditions
  - inadequate time to read
  - New readers returning after period of absence
  - aiming for high sensitivity above specificity
  - aiming for high specificity above sensitivity
- Participation in consensus & assessment
- Participation in PERFORMS

# PERFORMS

- 6 monthly 'test set'
- Performance compared to National Radiological Opinion - radiological decisions compared to peers
- Each individual receives own data + anonymous regional and national data

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**PERFORMS**
PERSONAL PERFORMANCE IN MAMMOGRAPHIC SCREENING



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## Welcome to the PERFORMS web site



This web site is for health professionals and associated research scientists. If you are looking for information on breast cancer or breast cancer support then please visit our related links page.

The PERFORMS scheme is for breast screening professionals and the IMPROVE scheme is for technologists and advanced practitioner radiographers undergoing training.

PERFORMS is an educational self assessment and training scheme for breast screening professionals.

**Registered NHS participants wanting to sit PERFORMS:**

We have updated our system to provide a single point of access to all PERFORMS services. Registered NHS participants looking to access the PERFORMS reporting application for Internet Explorer should now log onto this web site (towards the top right of the page), then you will find a tab called "Access Reporting Software" towards the top of the screen.

*Please note that if you have not received notification from us that your centre is able to take part in the latest scheme, you may not yet be able to do so.*

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 Loughborough University



# Future challenges

