Breast Screening Programme, England

Quality Statement for 2014-15

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This product may be of interest to members of the public, policy officials and other stakeholders to make local and national comparisons and to monitor the quality and effectiveness of screening services.

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This is a National Statistics publication

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

• meet identified user needs;
• are well explained and readily accessible;
• are produced according to sound methods; and
• are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

Introduction

The publication ‘Breast Screening Programme, England’ has been in existence for a number of years and publications are available on the Health and Social Care Information Centre (HSCIC) and Department of Health websites dating back to 1997-98. The report was originally published by the Department of Health Statistics Division. With the establishment of the HSCIC, responsibility for the publication transferred to the HSCIC in 2005.


The statistics in this report are used to inform policy and to monitor the quality and effectiveness of screening services.

Where appendices are referred to in this Quality Statement, they can be found in the Breast Screening Programme, England, 2014-15 report, available through the following link:

http://www.hscic.gov.uk/pubs/brstscreen1415

1.1 Data Sources

The statistics are derived from information that is routinely collected by NHS Cancer Screening Programmes for the operation of the screening programme, including for quality assurance and performance management purposes.

Information on the NHS Breast Screening Programme is supplied from the following Health and Social Care Information Centre central return data sets:

- KC62 – Information on invitations, uptake and outcomes from all 80 breast screening units across England.
- KC63 – Information on the population coverage of the programme from all 152 Upper Tier Local Authorities operating in 2014-15.

1 Since 2004-05 this bulletin has been published by the HSCIC. Previous editions published by the Department of Health, can be found at:
Data have been provided annually since 1988-89 through the KC62 and since 1994-95 through the KC63. The data from the KC62 and KC63 are received in aggregate form each year by the HSCIC.

A number of changes were made to the KC62 and KC63 central return data sets (effective from 1 October 2013) to take account of recent changes in policy that have been implemented within the NHS Breast Screening Programme. These policy changes relate to the extension of the screening age range and the screening of women who are at higher risk (see section 1.1.1 on Breast Screening Policy in the main report for more information). The KC63 return was also amended to enable the collection of data at Upper Tier LA level following changes in the NHS structure (see section 1.7 on the ‘Impact of NHS Re-organisation’ for more information). Some changes have been made to the report this year in accordance with the changes made to the KC62 and KC63 returns (see section 1.5 on ‘Changes to the Report’ in the main report). Although not all breast screening units have implemented higher risk screening, experimental statistics from the KC62 return on women who are at higher risk can be found in section 2.7 of the main report.

The NHS Data Model and Dictionary Service contain more information on the KC62 and KC63 central return data sets including guidance on content, completion and definitions. Links to the returns are given below:

KC62

KC63

Further information on the underlying sources of information can be found in the HSCIC’s List of Administrative Sources, available through the following link:

http://www.hscic.gov.uk/pubs/listadminsources

The KC62 and KC63 datasets are returned at the end of each financial year. The KC62 data comes to the HSCIC via the NHS Breast Screening Programme regional Quality Assurance Reference Centres (QARCs), which request the datasets from breast screening units in their regions. The KC63 data comes from the HSCIC’s NHAIS\(^2\) (Exeter) system from which aggregate LA level reports are produced.

\(^2\) National Health Application & Infrastructure Services (NHAIS).
The QARCs are responsible for quality assuring the screening programme including the KC62 and KC63 data sets before final submission. Further validation and quality assurance checks are carried out at the HSCIC as part of the publication process.

Regional QA Managers at the QARCs are asked to check some of the tables produced for publication by the HSCIC as part of the validation process.

### 1.2 Methods Used to Compile the Statistics

The HSCIC validates and analyses the KC62 and KC63 data using automated processes developed in SQL\(^3\) and SAS\(^4\) as well as spreadsheets (Microsoft Excel).

Most of the figures presented in the report and tables are in the form of simple counts, percentages (rounded to one decimal place) or rates (e.g. number of women with cancer detected per 1,000 women screened). Due to rounding, the sum of percentages in some tables will not equal 100%.

Definitions and formulae detailing how the statistics used in the report are calculated are given in Appendix B of the main report.

### 1.3 Relevance

Appendix E of the main report gives details of who uses the statistics in this publication and what they use them for.

### 1.4 Accuracy and Reliability

These are established collections based on complete data, i.e. not a sample.

Appendix G of the main report contains further information on data validation and data quality. All validation queries that were raised through the HSCIC’s data validation processes were resolved satisfactorily.

The HSCIC now publishes an annual report on ‘The Quality of Nationally Submitted Health and Social Care Data’ which contains a section on the data from the Breast Screening Programme. See: [http://www.hscic.gov.uk/catalogue/PUB15783](http://www.hscic.gov.uk/catalogue/PUB15783)

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\(^3\) Structured Query Language (SQL) is a programming language designed for managing data in relational database management systems.

\(^4\) Statistical Analysis System (SAS) is an integrated system of software products which enables functions such as data management, statistical analysis and quality improvement.
The report describes current data quality activity, planned improvements to data quality activity and capability and reports performance on a number of data quality indicators.

Note on Selected Diagnostic and Outcome Statistics

Data in tables 14 and 15 in the Data Tables present diagnostic and outcome statistics for each local screening programme. More information about the statistics in these tables is given in Appendix B of the main report on definitions.

The breast screening units vary enormously in size, with the smallest screening just under 4,400 women aged 50-70 in 2014-15 and the largest over 45,000. Prevalent screening\(^5\), which is shown in table 5, accounts for only 14.1% of women aged 50-70 screened. Rates for smaller units, particularly for prevalent screening, are therefore often based on a very small number of cases.

The figures in this report represent all women screened in the reporting period, but uncertainty may still arise as a result of natural or random variation, with statistics involving small numbers being most susceptible. Where statistics in tables 14 and 15 have been highlighted with an asterisk, caution should be exercised when using them for comparative purposes, either from year to year, or across reporting units. The asterisks have been applied when the number of occurrences used to make the calculation is less than 25 (e.g. where the number of small cancers used in the calculation of a small cancer detection rate is less than 25). Occurrences of less than 25 approximate to a Relative Standard Error (RSE) value of more than 20%\(^6\). The RSE is the standard error expressed as a percentage of the measure itself and is used to identify the level of reliability in statistics when the potential for random variation is taken into account. The higher the RSE, the less confidence there is in the reliability of the statistic.

False positive and false negative screening results

Users of these statistics should be aware that screening tests are not 100% accurate. In any screening programme there may be some false positive results and some false negative results.

Some people with a positive screening test result do not actually have the condition being screened for. These people are said to have a ‘false-positive’ result. Some people with a negative screening test do actually have the condition being screened for. These people are said to have a ‘false negative’ result.

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\(^5\) Prevalent screening refers to women being screened for the first time within the breast screening programme. In this statistical bulletin, prevalent screening figures relate to first invitations for routine screening and routine invitations to previous non-attendees.

\(^6\) An RSE of 20% or more is often used by the Office for National Statistics (ONS) to advise where figures should be treated with caution.
False Positives

In breast screening, false positives refer to women whose mammograms appear abnormal but who are found not to have cancer after further investigation. All women whose mammograms appear abnormal are offered further tests until a definitive diagnosis is reached. These diagnostic tests are a routine part of the screening programme.

In 2014-15, 4.2% (87,737) of women aged 45 and over screened had an abnormal result and were therefore referred for assessment. 79.5% (69,722) of these women were found not to have breast cancer. Therefore, the percentage of all women screened who were found not to have had breast cancer following an abnormal mammogram was 3.3% 7.

False Negatives

In breast screening, false negatives are identified when a woman is diagnosed with cancer and a review of her previous screening results shows that an abnormality was present which, in retrospect, may have been the cancer.

Cancers can be diagnosed at any time following a screening episode with a negative outcome. Cancers diagnosed between scheduled screening episodes are known as interval cancers. These can be divided into those that were false negative, those that are new (i.e. those that have developed since the last screening episode) and those that are not visible on mammography film.

There is no generally accepted or expected level of false negatives in the NHS Breast Screening Programme, although there are targets to minimise interval cancer rates which will include false negative cancers. Such measurements require long term follow up and are beyond the scope of this bulletin.

An NHSBSP report on interval cancers, which can include newly-developed cancers and those not detectable using mammography (known as occult cancers) as well as those associated with a false negative screening test, is available at:

http://www.cancerscreening.nhs.uk/breastscreen/publications/or1203.html

The Independent Breast Screening Review 8 published in October 2012 contains more information on false positives and false negatives:


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7 Calculated from the KC62 data set as: (Total number of women referred for assessment – Total number where outcome of assessment is cancer) / Total number of women screened * 100


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1.5 Timeliness and Punctuality
The breast screening data are made available annually as soon as possible after they have been compiled and validated (usually February each year). The time delay in publishing the statistics is because the data returns are produced six months after the year end (sufficient time to allow most screening episodes to be completed and outcomes to be recorded).

The statistics published in this report reflect data submitted as of 7 December 2015. At the time of publication (24 February 2016), no amendments to these data had been received.

A copy of last year’s report can be found at: http://www.hscic.gov.uk/catalogue/PUB16803

1.6 Accessibility and Clarity
The data fields are published in the Data Tables which are available as Excel files and as CSV files and are accessible through the HSCIC breast screening web pages. The graphs are also available as a PowerPoint file from the website. Further analysis may be available on request, subject to resource limits and compliance with disclosure control requirements.

Printed copies of this report are available on request. For further information contact: enquiries@hscic.gov.uk or telephone 0300 303 5678.

1.7 Coherence and Comparability
The HSCIC maintains awareness of changes that may impact on the data through regular meetings/communication with NHS Cancer Screening Programmes and the Department of Health.

**Time series**
For key statistics, the report presents 11 year time series where possible, enabling comparison with ten years ago. For all other statistics, figures for the current year are compared with the previous year.

The changes in policy described in the main report under section 1.1.1 on Breast Screening Policy need to be borne in mind when considering trend data.

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Local and Regional Comparisons

The statistics are presented at a national, regional and local level. Local level statistics are presented by Upper Tier Local Authority (LA), region (see 'Impact of NHS Re-organisation' below) and breast screening unit (BSU).

At a regional level, LA (KC63) data are aggregated up to nine regions. Data from BSUs (KC62) are aggregated to the NHS Cancer Screening Programme's eight reporting regions with sub-regional breakdowns for North East, Yorkshire and the Humber (showing North East and Yorkshire and the Humber) and the South East (showing the South East Coast and South Central). Cumbria LA and North Cumbria BSU are part of the North East reporting region as it is this region which has responsibility for the North Cumbria BSU10.

Impact of NHS Re-organisation

Prior to 1 April 2013 all NHS planning and delivery was done by the Department of Health, Strategic Health Authorities (SHAs) and Primary Care Organisations (PCOs). From April 2013, PCOs and SHAs ceased to exist and NHS England has taken on many of the functions of the former PCOs with regard to the commissioning of primary care health services, including breast screening. From April 2013, Local Authorities took on new responsibilities for public health.

The statistics in this report are presented by Upper Tier LA rather than PCO, in line with the new responsibilities of LAs for public health. LA data was published in this report for the first time in 2012-13 as experimental statistics. Local Authority coverage statistics for previous years are published as part of the Public Health Outcomes Framework (PHOF) and available at:

http://www.phoutcomes.info/

Although the data source is the same, LA PHOF figures differ slightly to LA figures from the KC63, with slightly more women both eligible and screened identified in the KC63 than in the PHOF. Coverage at a national level is not affected and only a very small number of LAs show a difference between the two datasets.

The two datasets are run at different points, the PHOF figures being automatically extracted and the KC63 being submitted following QA checks by the local NHAIS screening manager and QA Reference Centre.

There are a number of possible reasons for the differences in counts of eligible population. The two different run dates could allow for remedial actions taken by screening manager or more common actions, such as delayed registrations/deductions, amendments to registration/deduction dates, changes to registered postcodes, corrections to date of birth and corrections to registered gender.

10 Responsibility for the North Cumbria Breast Screening Unit transferred from the North West to the North East on 1 July 2011.
Updates to Local Authority mapping files might also assign women to LAs that were previously ‘unknown’. It is also possible that a delayed transfer of screening history when women move area, or a delayed transfer of screening results/updates received from screening units will affect the number reported for women screened.

Comparisons with other countries

Some of the statistics in this report can be compared with other UK countries - see sections 2.1.5, 2.4.4 and 2.6.4.

1.8 Performance Cost and Respondent Burden

The publication is based on information that has been routinely collected by the NHS Breast Screening Programme for a number of years as part of the performance management of the breast screening organisations.

All data collections used in this publication are subject to the Burden Advice and Assessment Service (BAAS) procedure (previously known as Review of Central Returns (ROCR)) and licensed by BAAS. This is to ensure that data collections do not duplicate other collections, minimise the cost to all parties and have a specific use for the data collected. Information on BAAS can be found at: http://www.hscic.gov.uk/baas

1.9 Confidentiality, Transparency and Security

The standard HSCIC security and confidentiality policies have been applied in the production of these statistics. The data are received in aggregate form via the HSCIC’s Data Depot\(^\text{11}\). An annual risk assessment is undertaken prior to publication which addresses any potential issues around disclosure.

No disclosure issues were identified in relation to this publication and no disclosure controls have been applied.

The eligible populations in two LAs are relatively small and in these instances their data have been combined and reported under other LAs. Data for Isles of Scilly are reported under Cornwall and City of London are reported under Hackney. Statistics in this report are therefore presented by 150 Upper Tier Local Authorities, two of which include another small LA.

1.10 Data Revisions

Where any data are re-submitted post-publication, the HSCIC will assess whether the resubmitted data has a significant impact on England-level data. Where this is the case, the affected Excel tables will be re-issued. Where the impact to England level data is not significant, footnotes will be made to the affected Excel tables but not to the PDF report.

\(^\text{11}\) The HSCIC Data Depot: a secure online portal for submitting and receiving data.
Published by the Health and Social Care Information Centre
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This publication may be requested in large print or other formats.

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