Breast Screening Programme
Quality Statement for 2015-16

Published 23 February 2017

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.
Contents

This is a National Statistics publication 3
Introduction 4

1.1 Data Sources 4
1.2 Methods Used to Compile the Statistics 5
1.3 Relevance 6
1.4 Accuracy and Reliability 6
1.5 Timeliness and Punctuality 8
1.6 Accessibility and Clarity 8
1.7 Coherence and Comparability 8
1.8 Performance Cost and Respondent Burden 10
1.9 Confidentiality, Transparency and Security 10
1.10 Data Revisions 11
This is a National Statistics publication

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority’s regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is NHS Digital’s responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.


This report 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 services.
Introduction

The publication ‘Breast Screening Programme, England’ has been in existence for a number of years and publications are available on the NHS Digital 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 NHS Digital, responsibility for the publication transferred in 2005.

The Breast Screening Programme, England, Statistics for 2015-16 presents information about the NHS Breast Screening Programme (NHSBSP) in England in 2015-16 and includes data on women invited for breast screening, coverage, uptake of invitations, outcomes of screening and cancers detected.

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, 2015-16 report, available through the following link:

http://content.digital.nhs.uk/pubs/brstscreen1516

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 NHS Digital 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.

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 NHS Digital.

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 Appendix B on Breast Screening Policy in the main report for more information). The KC63

---

1 Since 2004-05 this bulletin has been published by NHS Digital. Previous editions published by the Department of Health, can be found at: http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Statistics/StatisticalWorkAreas/Statisticalhealthcare/DH_4086491
The 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).

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 NHS Digital’s List of Administrative Sources, available through the following link:


The KC62 and KC63 datasets are returned at the end of each financial year. The KC62 data comes to NHS Digital via a bespoke NHS Digital data collection system to which all BSU’s submit. A number of at-source validations are carried out before submissions can be finalised. The KC63 data comes from NHS Digital’s NHAIS² (Exeter) system from which aggregate LA level reports are produced.

The Screening Quality Assurance Services (SQASs) 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 NHS Digital as part of the publication process.

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

### 1.2 Methods Used to Compile the Statistics

NHS Digital validates and analyses the KC62 and KC63 data using automated processes developed in SQL³ and SAS⁴ as well as spreadsheets (Microsoft Excel).

---

² National Health Application & Infrastructure Services (NHAIS).
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.
Most of the figures presented in the report and data 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 C of the main report.

1.3 Relevance
Appendix F 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 H of the main report contains further information on data validation and data quality. All validation queries that were raised through NHS Digital’s data validation processes were resolved satisfactorily.

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 over 5,500 women aged 50-70 in 2015-16 and the largest under 50,000. Prevalent screening, which is shown in table 5, accounts for only 14.8% 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%. The RSE is the standard error expressed as a percentage of the measure itself and is used to identify the

Please see Table 14 in the data tables
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.

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.
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.

**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 2015-16, 4.2% (88,654)\(^8\) of women aged 45 and over screened had an abnormal result and were therefore referred for assessment. 79.3% (70,334)\(^9\) 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%\(^10\).

**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.

---

\(^8\) Please see table 7a in the Data Tables

\(^9\) Please see table 1 in the Data Tables

\(^10\) 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
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\(^\text{11}\) published in October 2012 contains more information on false positives and false negatives:


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 2016. At the time of publication (23 February 2017), no amendments to these data had been received.

A copy of last year’s report can be found at:  
http://content.digital.nhs.uk/pubs/brstscreen1415

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 NHS Digital breast screening web pages\(^\text{12}\).

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

1.7 Coherence and Comparability

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


\(^\text{12}\) http://content.digital.nhs.uk/searchcatalogue?topics=2%2fPublic+health%2fHealth+protection%2fScreening&sort=Relevance&size=10&page=1#top
Time series

For key statistics, the report presents a 10-year time series where possible. For other statistics, figures for the current year are compared with the previous year, or occasionally with figures from 5 years ago.

The changes in policy described in the main report in Appendix B on Breast Screening Policy need to be taken into account when considering trend data.

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 (showing the South East and South West). 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 BSU.

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 therefore presented by Upper Tier LA. 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 are 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.

---

13 Responsibility for the North Cumbria Breast Screening Unit transferred from the North West to the North East on 1 July 2011.
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.

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, 2.4.5 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://content.digital.nhs.uk/baas](http://content.digital.nhs.uk/baas)

**1.9 Confidentiality, Transparency and Security**

The standard NHS Digital security and confidentiality policies have been applied in the production of these statistics. 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, NHS Digital 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.
Information and technology for better health and care

This publication may be requested in large print or other formats.

Published by NHS Digital, part of the Government Statistical Service

NHS Digital is the trading name of the Health and Social Care Information Centre.

This work remains the sole and exclusive property of the Health and Social Care Information Centre and may only be reproduced where there is explicit reference to the ownership of the Health and Social Care Information Centre.

This work may be re-used by NHS and government organisations without permission.