Cervical Screening Programme

England, 2016-17

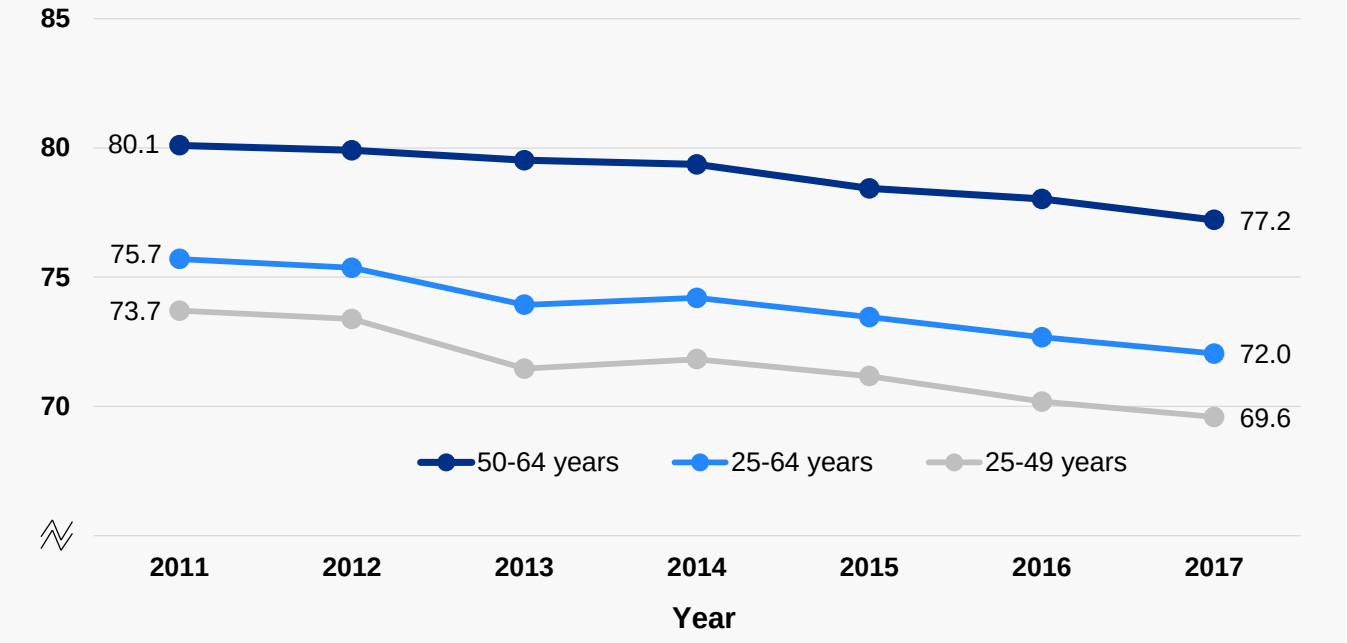
Published 7 November 2017

This publication presents information about the NHS Cervical Screening Programme in England in 2016-17 as well as key statistics from previous years. It includes statistics on women aged 25-64 who are invited for regular screening under the call and recall programme, screening samples examined by pathology laboratories and on referrals to colposcopy clinics.

Key findings

- At 31 March 2017, the percentage of eligible women (aged 25 to 64) who were recorded as screened adequately within the specified period was 72.0%. This compares with 72.7% at 31 March 2016 and 75.4% at 31 March 2012.
- A total of 4.45 million women aged 25 to 64 were invited for screening in 2016-17, representing an increase of 5.6% from 2015-16 when 4.21 million women were invited.
- In total, 3.18 million women aged 25 to 64 years were tested in 2016-17, an increase of 2.9% from 2015-16 when 3.09 million women were tested.

Figure 1: Cervical Screening age-appropriate coverage by age group England, 2011 - 2017



Source: Open Exeter (age appropriate coverage). NHS Digital. See Table 1 in the Data Tables.

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ISBN: 978-1-78734-168-5

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

Women between the ages of 25 and 64 are invited for regular cervical screening under the NHS Cervical Screening Programme. This is intended to detect abnormalities within the cervix that could, if undetected and untreated, develop into cervical cancer.

This report presents information about the NHS Cervical Screening Programme in England in 2016-17 as well as key statistics from the previous ten years. It includes statistics on the call and recall programme for women aged 25 to 64 years, as well as statistics on screening samples examined by pathology laboratories and on referrals to colposcopy clinics.

The statistics in this report are used to inform policy and to monitor the quality and effectiveness of screening services. They are derived from information that is routinely collected by the Cancer Screening Programmes within Public Health England (PHE) for the operation of the screening programme, including quality assurance and performance management purposes.

The statistics are presented at England level and by Upper Tier Local Authority (LA), region, pathology laboratory and colposcopy clinic.

Statistics are presented at England level and by Upper Tier Local Authority, region, pathology laboratory and colposcopy clinic

1.1 Report Structure

1.1.1 Statistics from the NHS Cervical Screening Programme are presented in the Analysis and Commentary section of this report in three sub-sections as follows:

- Call and Recall Programme
- Cervical Cytology
- Colposcopy

1.1.2 In presenting laboratory statistics in the Cervical Cytology section, data about samples from GP and NHS Community Clinics have been used in most tables in preference to data about samples from all sources, so as to reflect more closely the results from screening programme tests delivered in primary care.

1.1.3 The Appendices which now form part of a separate document for this publication include:

- Appendix A - Background
- Appendix B - Definitions
- Appendix C - Types of Invitation
- Appendix D - Cytology Test Result Categories
- Appendix E - Outcomes of Gynaecological Referral
- Appendix F - Uses of Statistics by Known Users
- Appendix G - Feedback from Users
- Appendix H - Data Validation and Data Quality
- Appendix I - Related Publications and Useful Web links

1.2 Changes to the Report

- We have made an interactive data dashboard available for the first time as part of the data resources for this publication. The dashboard has been developed in software called Microsoft Power BI[1] and is designed to make data more meaningful by allowing local, regional and national comparisons over time. This includes coverage statistics for women aged 25 to 64 years presented by Upper Tier Local Authority (LA), and for the first time by Clinical Commissioning Group (CCG)
- We have moved the Appendices to a separate document as a means of reducing the overall size of this report, and therefore making it more succinct.

An interactive data dashboard has been made available for the first time as part of this publication

1.3 User Feedback

NHS Digital welcomes feedback on all publications. If you wish to contact us our details can be found on the link below.

http://digital.nhs.uk/contact-us

We would be particularly interested to know how you use the statistics in this report.

Feedback received from users via the publication webpage is summarised in Appendix G along with details of any action that has been, or will be taken as a result of this feedback.

[1] https://powerbi.microsoft.com/en-us/

Analysis and Commentary

Call and Recall Programme

2.1 Coverage

2.1.1 Coverage is defined as the percentage of women in a population eligible for screening at a given point in time who were screened adequately[2] within a specified period. As the frequency with which women are invited for screening is dependent on age, as recommended by the UK National Screening Committee, coverage is calculated differently for different age groups.

For those aged 25-49, coverage is calculated as the percentage of women eligible for screening who have had an adequate screening test within the last 3.5 years on 31 March 2017. For those aged 50-64, coverage is calculated as the percentage of women eligible for screening who have had an adequate screening test within the last 5.5 years (see Table A).

For the total target age group (25 to 64 years), two definitions of coverage are presented in this report. '*Age-appropriate coverage'* represents the most up to date definition and takes into account the frequency with which women of different ages are invited for screening. This defines coverage as the percentage of women in the population eligible for cervical screening who were screened adequately within the previous 3.5 years or 5.5 years, *according to age* on 31 March 2017. This is the definition used for the headline coverage figures.

'Five year coverage' represents an earlier definition and measures the percentage of women in the population eligible for cervical screening who have had an adequate test within the last 5 years on 31 March 2017. It is retained in this report to present a longer time series for comparison purposes.

More detailed definitions and explanations of the different measures of coverage are given in the Coverage section of Appendix B.

2.1.2 Age appropriate coverage

At 31 March 2017, the percentage of eligible women (aged 25 to 64) who were recorded as screened adequately within the specified period was 72.0%. This compares with 72.7% at 31 March 2016 and 75.4% at 31 March 2012.

Coverage amongst women aged 25 to 49 years (measured at three and a half years) was 69.6% at 31 March 2017. This compares to 70.2% as at 31 March 2016 and 73.4% as at 31 March 2012.

Age-appropriate coverage fell from 73.4% in 2012 to 69.6% in 2017 among women aged 25-49

[2] In a small proportion of cases the pathology laboratory is unable to assess the cells to give a result and the test is considered inadequate.

For women aged 50 to 64 years, the coverage (measured at five and a half years) at 31 March 2017 was 77.2% which compares to 78.0% as at 31 March 2016 and 79.9% as at 31 March 2012.

Data on age-appropriate coverage is only available since 2011 but shows a fall in coverage at 31 March 2017 for the third consecutive year.

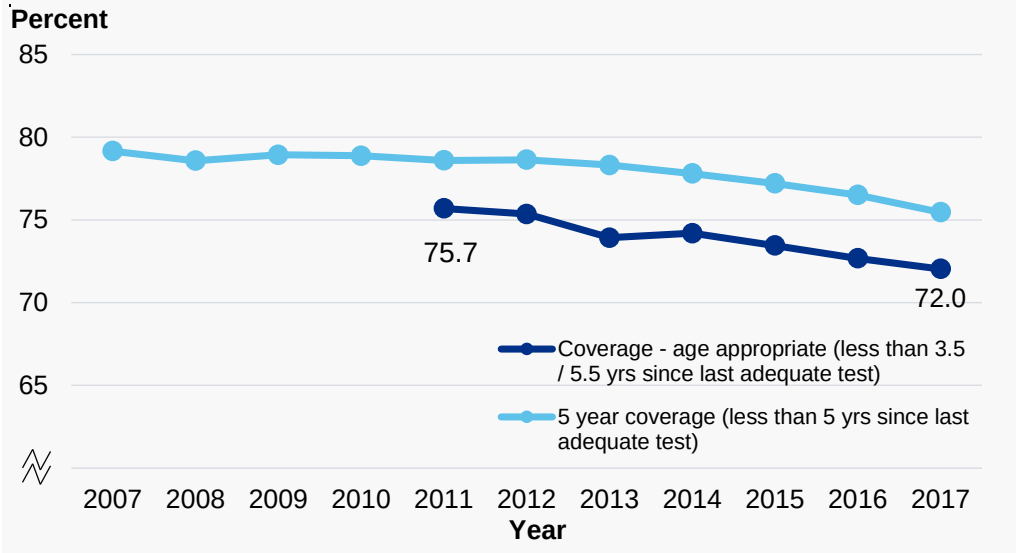
2.1.3 Five year coverage

Five year coverage at 31 March 2017 for women aged 25-64 was 75.5% compared with 76.5% in 2016. This measure of coverage will always be higher than the age appropriate definition as women aged 25-49 who were not screened within the last 3.5 years but *were* screened within the last 5 years are counted under this definition but not under age appropriate coverage.

The long term trend shows a gradual fall in five year coverage over the last ten years. Apart from an increase in 2009, which has been associated with the media attention around the diagnosis and subsequent death of the high profile media personality, Jade Goody (Poole et al, 2012), coverage has either fallen or remained unchanged each year since 2007 (see Figure 2 and Table A).

Figure 2: Cervical screening – Coverage by age group (25-64)

England at 31 March, 2007 to 2017



Age-appropriate coverage at 31 March 2013 excludes some women from a small number of LAs.
Source: KC53 return (5 year coverage) and Open Exeter (age appropriate coverage). NHS Digital. See Tables 1, 1a and 13 in the Data Tables.

2.1.4 Coverage for women aged 50 to 64 years (which is measured over a five and a half years to reflect the five year recall interval), fell slightly to 77.2% at 31 March 2017 from 78.0% at 31 March 2016 (see Table A).

Coverage amongst women aged 25 to 49 years (measured at three and a half years) also fell to 69.6% at 31 March 2017 from 70.2% the previous year - the third consecutive year there has been a fall in coverage.

Table A: Cervical screening – Coverage by age group

England at 31 March, 2007 to 2017 — Percentages

Year	25-49 years *less than 3.5 years since last adequate test**	50-64 years *less than 5.5 years since last adequate test**	**25-64 years (age appropriate) *less than 3.5 / 5.5 years since last adequate test****	25-64 years (5 year) *less than 5 years since last adequate test***
2007				79.2
2008				78.6
2009				78.9
2010				78.9
2011	73.7	80.1	**75.7**	78.6
2012	73.4	79.9	**75.4**	78.6
2013	71.5	79.5	**73.9**	78.3
2014	71.8	79.4	**74.2**	77.8
2015	71.2	78.4	**73.5**	77.2
2016	70.2	78.0	**72.7**	76.5
2017	69.6	77.2	**72.0**	75.5

*Coverage at 31 March 2013 excludes some women from a small number of LAs.

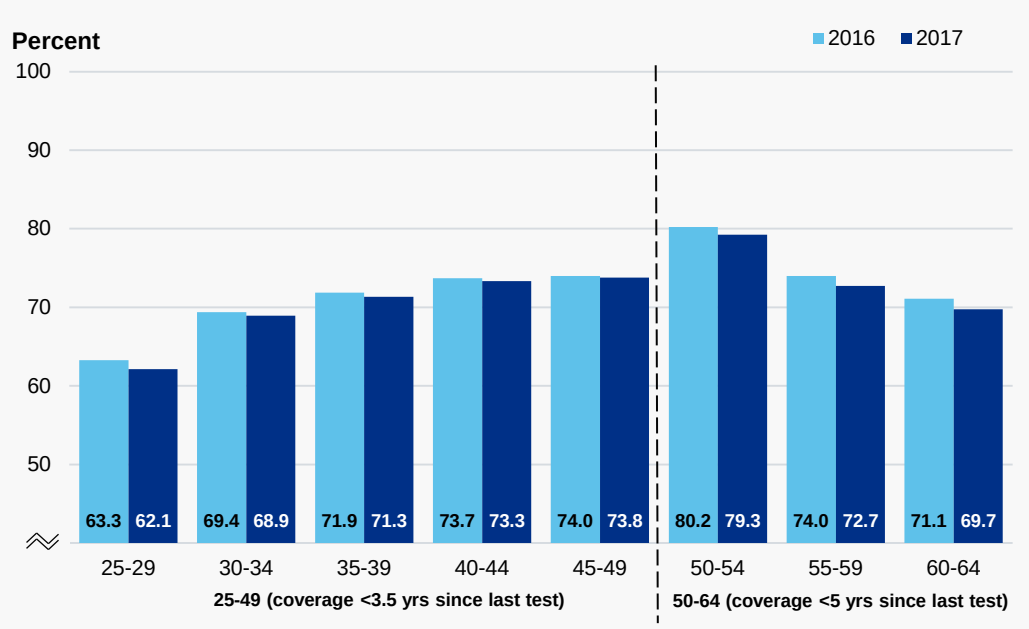
** This represents the older definition of coverage taken from the KC53 return (see paragraph 2.1.1)

Source: KC53 return (5 year coverage) and Open Exeter (age appropriate coverage). NHS Digital. See Tables 1, 1a and 13 in the Data Tables.

2.1.5 Figure 3 illustrates a more detailed age breakdown and shows that coverage amongst women aged 25 to 29 years (measured at three and a half years) decreased slightly to 62.1% at 31 March 2017 from 63.3% in 2016, and is lower than in any other age group. Coverage amongst women aged 50 to 54 (which is measured over a five year period) was highest at 79.3%, though this also decreased slightly from 80.2% the previous year.

Figure 3: Cervical screening – Coverage* by age group

England, at 31 March, 2016 and 2017



*Age appropriate coverage in the 50-64 age group (as measured at five and a half years) is not available for the more detailed age bands, this chart shows the breakdown under the previous definition (as measured at five years)

Source: KC53, NHS Digital. See Table 1a in the Data Tables.

2.1.6 Age-appropriate coverage of the full target age group (25 to 64 years) at a regional level at 31 March 2017 ranged from 65.7% in London to 75.4% in the East Midlands. All reporting regions reported a fall in coverage at 31 March 2017 when compared with 2016 (see Table B).

Regionally, age-appropriate coverage was highest in the East Midlands at 75.4%

Table B: Age appropriate coverage for women aged 25-64 years

England regions, 31 March 2016 and 2017 Percentages

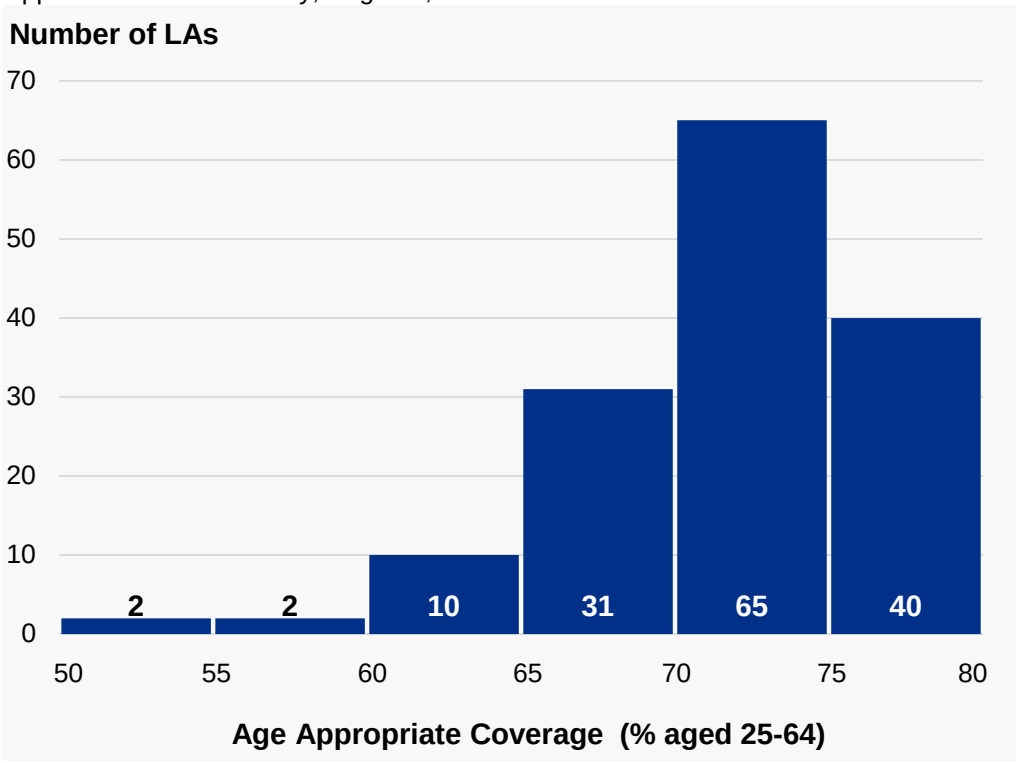
	Age appropriate coverage *(Less than 3.5 / 5.5 years since last adequate test)*	
Region	**2016**	**2017**
North East	75.2	74.7
Yorkshire & the Humber	75.4	74.9
North West	72.3	72.0
East Midlands	75.9	75.4
West Midlands	71.8	71.4
East of England	73.9	73.3
London	66.7	65.7
South East	74.3	73.5
South West	74.8	74.1

Source: Open Exeter (age appropriate coverage), NHS Digital. See Table 13 in the Data Tables.

2.1.7 Age appropriate coverage was 75% or higher in 40 of the 150 LAs - see Figures 4 and 4a.

Figure 4: Cervical screening – Age appropriate coverage of the target age group (25-64)

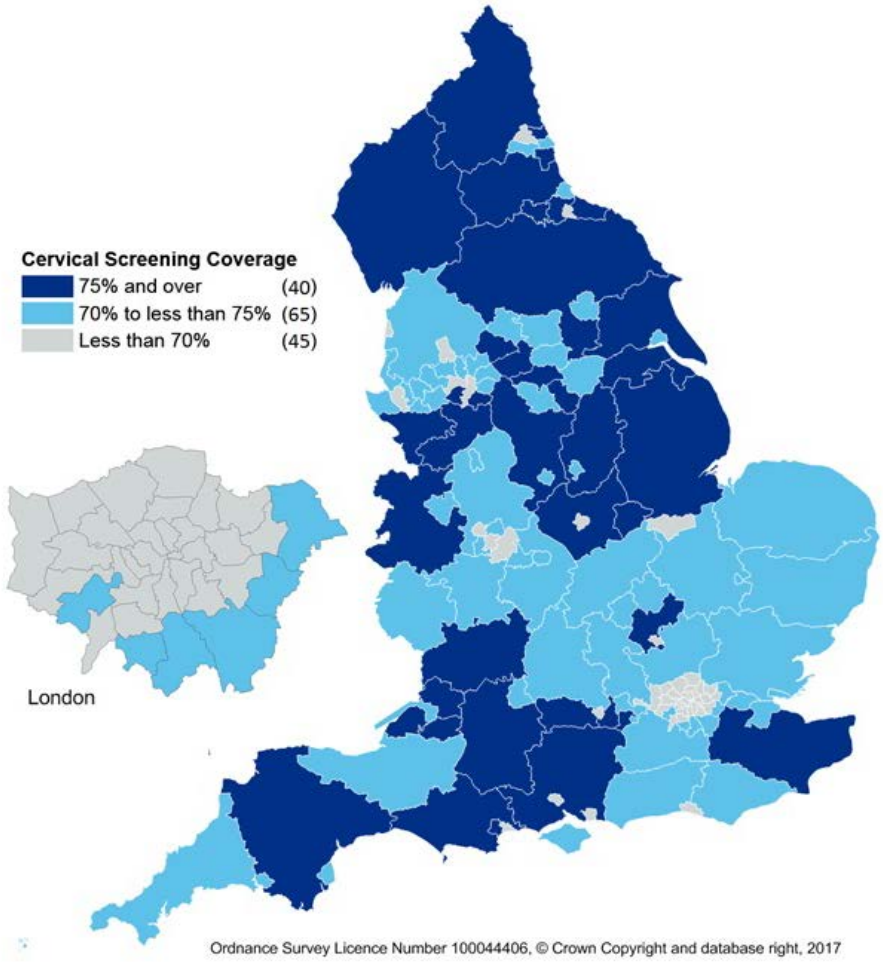
Upper Tier Local Authority, England, 31 March 2017



Source: Open Exeter - PHOF, NHS Digital. See Table 13 in the Data Tables.

Figure 4a: Cervical screening – Age appropriate coverage of the target age group (25-64)

Upper Tier Local Authority, England, 31 March 2017



NB: Due to rounding, the figures presented in the above map may not exactly match those derived from aggregating the relevant columns from Table 13 in the data tables.

Source: Open Exeter - PHOF, NHS Digital. See Table 13 in the Data Tables.

At a local level, 105 Local Authorities (out of 150) had coverage levels of 70% and above (see Figure 4a).

105 from 150 Local Authorities had coverage levels of 70% and over

For detailed figures on coverage at LA level see Table 13 in the Data Tables. Please also note that age appropriate coverage figures for LAs are available from Public Health England via the following link:

http://www.phoutcomes.info/

2.1.8 The test status of the population as at 31 March 2017, together with women with recall ceased for clinical reasons[3], is shown in Table C. Of women aged 25 to 64 years, 71.8% were recorded as having had at least one adequate test within 5 years. A further 8.2% were tested within ten years. 10.4% had been called but had never attended for screening.

[3] Ceased for clinical reasons should indicate the women has no cervix.

Table C: Test status of women aged 25-64

England at 31 March 2017 — Thousands and *Percentages*

Women resident	Women ceased for clinical reasons	Women who have been tested (time since last adequate test): within the last 1.5 years	more than 1.5 up to 3 years	more than 3 up to 3.5 years	more than 3.5 up to 5 years	more than 5 up to 10 years	more than 10 up to 15 years	more than 15 years	Women called but not tested: No adequate sample	Never attended	No cytology record
Number (thousands)											
15432.6	739.3	4,590.8	4,181.5	840.5	1,474.8	1,268.3	336.9	344.0	26.7	1,609.0	21.0
Percentage											
100.0	*4.8*	*29.7*	*27.1*	*5.4*	*9.6*	*8.2*	*2.2*	*2.2*	*0.2*	*10.4*	*0.1*

NB: The sum of components may not equal totals due to rounding.
Source: KC53, NHS Digital. See Tables 2, 3 and 3a in the Data Tables.

2.1.9 Table D shows coverage in other UK countries. It should be noted that cervical screening programmes in other countries vary in terms of the age groups covered by the screening programmes, the frequency of screening and in how coverage is calculated. In comparing coverage in England to other countries, these differences (detailed in the footnotes) should be considered.

Table D: Cervical screening coverage of women aged 25-64

United Kingdom by country at 31 March 2017 — Thousands and *Percentages*

Country	Number of eligible women	Number of women screened within specified target period	Coverage (%)
England*	14,671.1	10,569.2	72.0
Northern Ireland	492.0	377.8	76.8
Scotland	1,396.2	1,024.0	73.3
Wales	765.6	589.8	77.0

*Coverage data is the Age-Appropriate figure and covers England's two screening intervals for women aged 25-49 and 50-64, see section 2.1.1 for further details. Source for England figure: Open Exeter - PHOF, NHS Digital. See Tables 1 and 13 in the Data Tables.

For Northern Ireland and Wales, coverage is calculated as the percentage of women in a population eligible for screening at a given point in time who were screened adequately within the past 5 years. The Scottish programme calculates coverage within the past 3.5 or 5.5 years. Data for each country can be found through the following links:

Northern Ireland:
http://www.cancerscreening.hscni.net/statistics/wstats05.html#P-4_0

Scotland:
http://www.isdscotland.org/Publications/index.asp

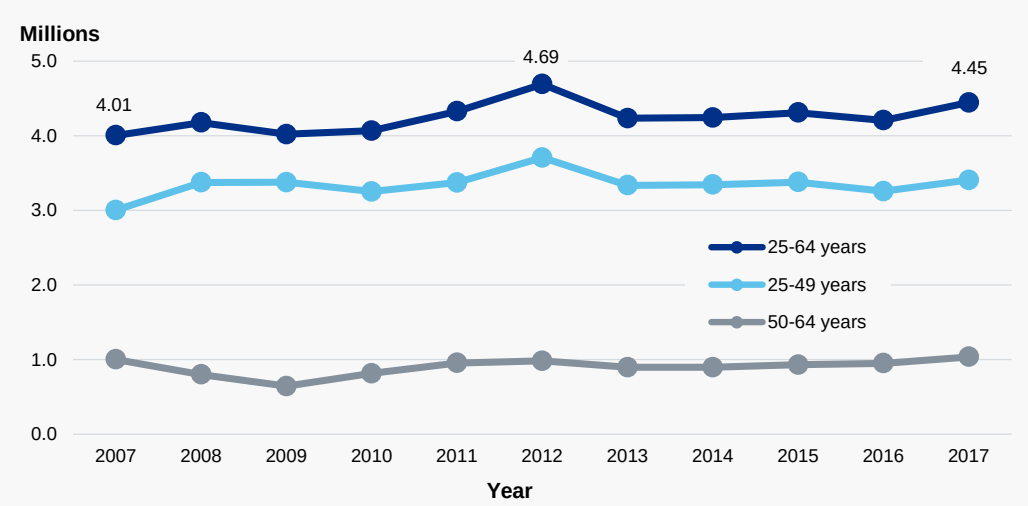
Wales:
http://www.cervicalscreeningwales.wales.nhs.uk/statistical-reports

2.2 Invitations for screening

2.2.1 There was an increase in the number of women aged 25 to 64 years invited for screening in 2016-17 compared with the previous year (see Figure 5 and Table E). In total, 4.45 million women were invited, most of whom were aged 25 to 49 (3.41 million) with women aged 50 to 64 accounting for 1.04 million of those invited.

Figure 5: Number of women invited for screening, by age

England, 2007 to 2017



Source: KC53, NHS Digital. See Tables 1, 4 and 5 in the Data Tables.

Table E: Number of women invited for screening by year and age group

England, 2012-13 to 2016-17 — Numbers and *Percentage Change*

Age group	2012-13	2013-14	2014-15	2015-16	2016-17	Change from 2015-16 to 2016-17
Total (all)	4,366,196	4,458,042	4,538,379	4,434,393	4,672,120	*5.4%*
Total (25-64)	**4,235,069**	**4,244,755**	**4,311,001**	**4,208,888**	**4,445,151**	***5.6%***
25-49	3,336,723	3,346,282	3,379,753	3,257,328	3,408,266	*4.6%*
50-64	898,346	898,473	931,248	951,560	1,036,885	*9.0%*

NB: Figures prior to 2013-14 are derived from the PCO dataset – see Appendix B
Sum of components may not equal totals due to numbers screened outside the listed age groups.
Source: KC53, NHS Digital. See Table 4 in the Data Tables.

2.2.2 The NHS Cervical Screening Programme categorises screening invitations into types as shown in Table F. Detailed explanations of the different types of invitation are given in Appendix C. Table F shows that although most women aged 25 to 64 years received a call[4] or routine recall, 8.7% were early repeat recalls for surveillance. The proportion of women who received an early repeat recall following an abnormality (i.e. persistent findings of borderline change or low-grade dyskaryosis) was the same as the previous year (3.0%).

Table F: Number of women (aged 25-64) invited in the year by type of invitation

England, 2015-16 and 2016-17 — Numbers and *Percentages*

				Repeat in less than 3 years for reasons of		
Year	**Total**	Call (%)	Routine Recall (%)	Surveillance (%)	Abnormality (%)	Inadequate sample (%)
2015-16	**4,208,888**	*19.3*	*68.2*	*7.4*	*3.0*	*2.1*
2016-17	**4,445,151**	*19.6*	*66.7*	*8.7*	*3.0*	*2.0*

Sum of components may not equal 100% due to rounding.
Source: KC53, NHS Digital. See Table 4 in the Data Tables.

2.2.3 In total, 3.18 million women aged 25 to 64 years were tested in 2016-17, an increase of 2.9% from 2015-16 when 3.09 million women were tested (see Figure 6 and Table G).

Figure 6 shows the number of women tested each year since 2007 (following the age and frequency changes to screening policy which were introduced in 2003 – see section 1.7 of the Data Quality Statement). The unexpected increase in women tested in 2008-09 has been associated with the diagnosis and death from cervical cancer of the high profile media personality, Jade Goody (Lancucki et al, 2012). Research published in the Journal of Medical Screening reported that her diagnosis and death, which were well publicised, "……were marked by a substantial increase in attendances in the cervical screening programme in England…..(Although the) increase in screening attendances was observed at all ages…..the magnitude was greater for women aged under 50" (Lancucki et al, 2012, p4). Women aged 25-49 tested in 2008-09 would have been expected to receive their next routine invitation for screening three years later in 2011-12. This may partly explain the second smaller peak in women aged 25 to 49 tested in 2011-12.

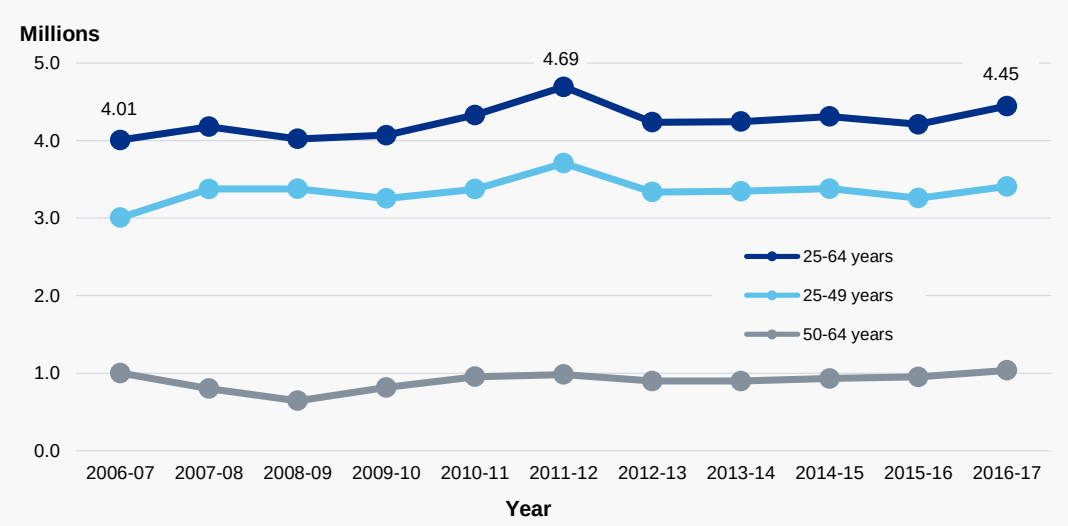
The numbers of women tested in 2016-17 rose in both the 25-49 and 50-64 age groups. Amongst women aged 25-49, 2.40 million women were tested in 2016-17, an increase of 2.4% from 2015-16. A total of 0.78 million women aged 50-64 were tested in 2016-17 an increase of

[4] Where the invitation type is 'call', this indicates that the invitation is a first call for screening. Women receiving this invitation type will not have been screened before.

4.7% from 2015-16. Falls in some age groups may be explained by the introduction of Human Papillomavirus (HPV) testing as triage for mild or borderline abnormalities and as a test of cure[5].

Figure 6: Number of women tested, by age

England from 2007 to 2017



Source: KC53, NHS Digital. See Tables 1 and 5 in the Data Tables.

Numbers of women tested within the target age range (25-64) rose for the first time in 5 years

Table G: Number of women tested by year and age group

England from 2012-13 to 2016-17 — Numbers and *Percentage Change*

Age group	2012-13	2013-14	2014-15	2015-16	2016-17	Change from 2015-16 to 2016-17
Total (all)	3,394,266	3,298,399	3,190,653	3,157,728	3,242,736	*2.7%*
Total (25-64)	**3,320,389**	**3,225,180**	**3,117,742**	**3,086,175**	**3,176,648**	***2.9%***
25-49	2,561,077	2,493,714	2,402,642	2,341,549	2,397,246	*2.4%*
50-64	759,312	731,466	715,100	744,626	779,402	*4.7%*

NB: Figures prior to 2013-14 are derived from the PCO dataset – see Appendix B
Source: KC53, NHS Digital. See Table 5 in the Data Tables.

2.2.4 Of the women aged 25 to 64 tested in the year, 2.63 million (82.7%) were tested following an invitation within the screening programme. The remaining 548,564 women (17.3%) had screening tests not prompted by the programme, i.e. test initiated by the sample taker or opportunistically by the woman, without her necessarily having been invited in the last six months by the screening programme[6] (see Table 5 in Data Tables). Some women may be routinely recalled by their GPs instead of through the screening programme and because of this it is not possible to calculate the percentage uptake of invitations from the national call/recall database.

[5] See 2011 Cancer Strategy Impact assessment https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213768/dh_123505.pdf

[6] Opportunistic tests will most commonly be taken from women who are overdue for screening.

2.3 Test results

3.31 million tests were conducted in 2016-17

2.3.1 Some women have more than one test during the year for clinical reasons[7] and the 3.24 million women of all ages tested in 2016-17 generated 3.31 million tests (see Table H).

In 2.8% of tests there was no result, as the sample was 'inadequate' i.e. it did not contain material suitable for analysis (see paragraphs 3.1.2 - 3.1.4 for more information on inadequate samples).

Table H: Number of tests and result

England, 2016-17 — Numbers and *Percentages*

Result of test	Number of tests	%
Inadequate	92,885	*2.8*
Adequate	3,215,429	*97.2*
Total	**3,308,314**	***100.0***

NB 'Adequate' includes every other possible test result

Source: KC53, NHS Digital. See Table 7 in the Data Tables.

2.3.2 For women tested again due to an earlier inadequate test, 13.2% of tests resulted in a repeated inadequate result, a slight increase on 2015-16 (12.5%) – see Table I. These repeated inadequate samples accounted for 10.9% (10,129 out of 92,885) of all inadequate results in the year.

Table I: Result of test where a repeat invitation was sent in less than 3 years due to a previous inadequate sample

England, 2015-16 and 2016-17 — Numbers and *Percentages*

	2015-16		**2016-17**	
Result of test	Tests	%	Tests	%
Inadequate	9,346	*12.5*	10,129	*13.2*
Adequate	65,227	*87.5*	66,649	*86.8*
Total	**74,573**	***100.0***	**76,778**	***100.0***

Source: KC53, NHS Digital. See Table 7 in the Data Tables.

2.3.3 The NHS Cervical Screening Programme categorises the results of cytology tests as shown in Table J. Detailed explanations of the different types of cytology test result are given in Appendix D. Of the 3.13 million women aged 25 to 64 with adequate tests in 2016-17, 94.2% had a negative result and 5.8% had a result categorised as abnormal (from borderline change through to potential cervical cancer[8]). 1.1% of women tested in 2016-17 had a result showing a

[7] This can be if the sample is inadequate or if a repeat test is required due to a previous abnormality (with or without treatment).

[8] Potential cervical cancer includes high-grade dyskaryosis/?invasive squamous carcinoma and ?glandular neoplasia of endocervical type.

high-grade abnormality (i.e. a result of high-grade dyskaryosis (moderate), high-grade dyskaryosis (severe), high-grade dyskaryosis (severe)/?invasive carcinoma and ?glandular neoplasia of endocervical type). Table J shows the breakdown of the results of adequate tests for the last 2 years.

The new classification for abnormal cervical cytology introduced in April 2013 will have impacted on the results of cytology tests for 2013-14 onwards and in particular on the proportion of results classified as borderline and low-grade dyskaryosis (see section 1.7 on 'Changes in reporting and classification of cervical cytology' of the Data Quality Statement which accompanies this publication for more information).

Table J: Results of adequate tests for women aged 25-64

England, 2015-16 and 2016-17 — Numbers and *Percentages*

Result of test*	**2015-16**	**2016-17**
Total results	3,042,279	3,126,888
	%	%
Negative	*93.8*	*94.2*
Borderline changes	*2.5*	*2.4*
Low-grade dyskaryosis	*2.4*	*2.3*
High-grade dyskaryosis (moderate)	*0.5*	*0.5*
High-grade dyskaryosis (severe)	*0.7*	*0.6*
High-grade dyskaryosis/?invasive carcinoma**	*0.0*	*0.0*
?Glandular neoplasia**	*0.0*	*0.0*
Total	***100.0***	***100.0***

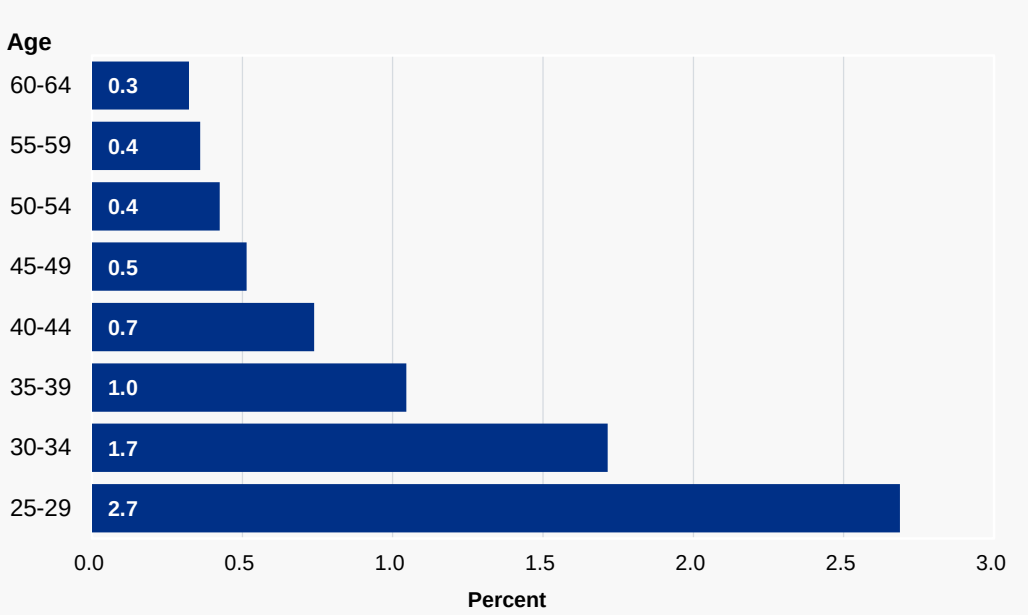
* Most severe result in year
** ?invasive carcinoma means 'suspected invasive carcinoma', ?glandular neoplasia means 'suspected glandular neoplasia'.
NB: The sum of components may not equal totals due to rounding.
Source: KC53, NHS Digital. See Table 8 in the Data Tables.

94.2% of test results of adequate samples are classified as Negative in 2016-17

2.3.4 Within the target age range, the percentage of results showing a high-grade abnormality decreased with age, being highest at 2.7% for women aged 25-29, falling to less than 0.5% for women aged 50 to 64 (see Figure 7).

Figure 7: Cervical screening - Test results showing a high-grade abnormality as a percentage of all test results, by age group of women

England 2016-17

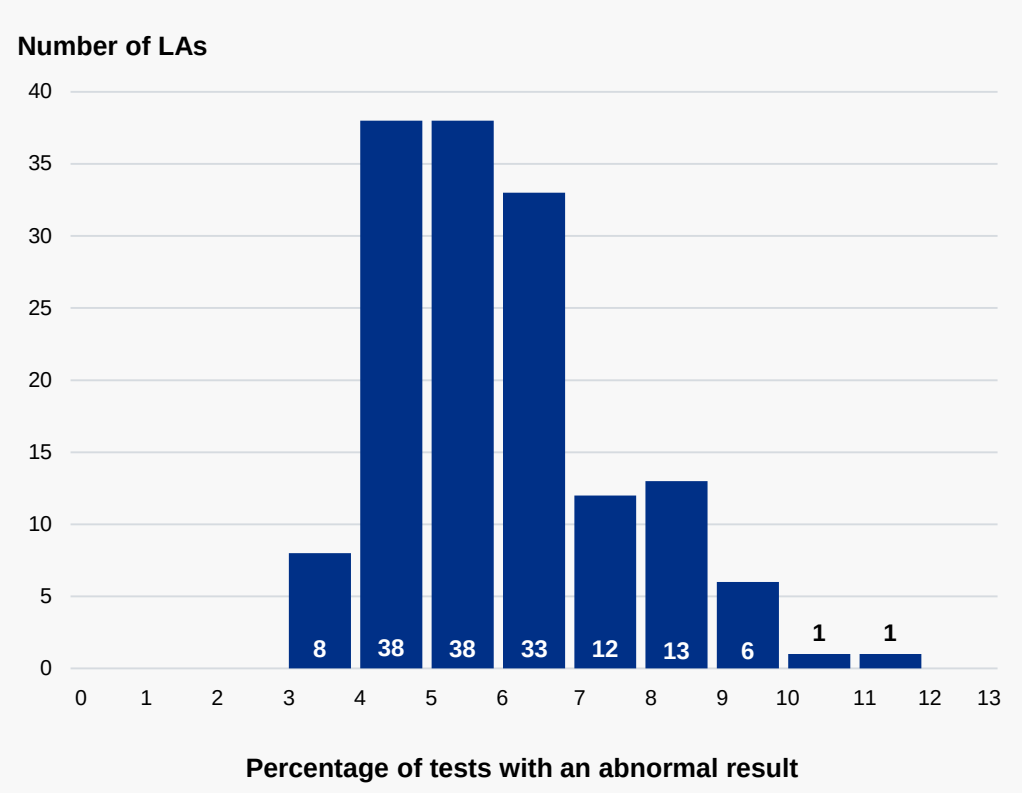


NB. Note that the percentages in Figure 7 are aggregates of four test result groups (high-grade dyskaryosis (moderate), high-grade dyskaryosis (severe), high-grade dyskaryosis (severe)/?invasive carcinoma and ?glandular neoplasia of endocervical type).
Source: KC53, NHS Digital. See Table 8 in the Data Tables.

2.3.5 In 121 of the 150 LAs, the proportion of women presenting with an abnormal result was between 4% and 8%. The proportion was 10% or above in only 2 LAs, with a maximum of 11.2% (see Figure 8).

Figure 8: Cervical screening – Percentage of tests for women aged 25-64 with an abnormal result

Upper Tier Local Authority, England, 2016-17



NB: The percentages in Figure 8 are aggregates of six test result groups (borderline change, low-grade dyskaryosis, high-grade dyskaryosis (moderate), high-grade dyskaryosis (severe), severe/?invasive carcinoma and, ?glandular neoplasia of endocervical type).
Source: KC53, NHS Digital. See Table 12 in the Data Tables.

2.4 Time from screening to receipt of results

2.4.1 National policy is that all women should receive their cervical screening test result within two weeks of the sample being taken. 'Time from screening to *receipt* of results' is defined as the interval between the date the sample was taken from the woman and the date she received her result letter. It is measured using an expected delivery date based on the date of letter printing and the postage class used by the screening department[9].

2.4.2 In 2016-17, 71.6% of letters to women tested were reported to have an expected delivery date of within 2 weeks of the sample being taken. This compares to 89.1% in 2015-16 (see Table K) and is below the Key Performance Indicator current acceptable value of 98.0%[10]. The recommendation of the UK National Screening Committee (UK NSC) that HPV primary screening should be rolled out across England

[9] Time from screening to receipt of test results as measured by expected date of delivery is calculated from summing monthly data for local authorities.
[10] NHS public health functions agreement 2016-17. Service specification no.25 Cervical Screening https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2016/02/serv-spec-25.pdf

has had an impact on cytology workforce and laboratory capacity that has led to an increase in the turnaround times of cervical screening samples this year. This means that some parts of the country that would normally meet the standard for 98% of results being received within 14 days of a test have not this year.

Table K: Time from screening to receipt of results, as measured by expected delivery date of result letter (eligible women aged 25–64 years)

England, 2015-16 and 2016-17 — Numbers and *Percentages*

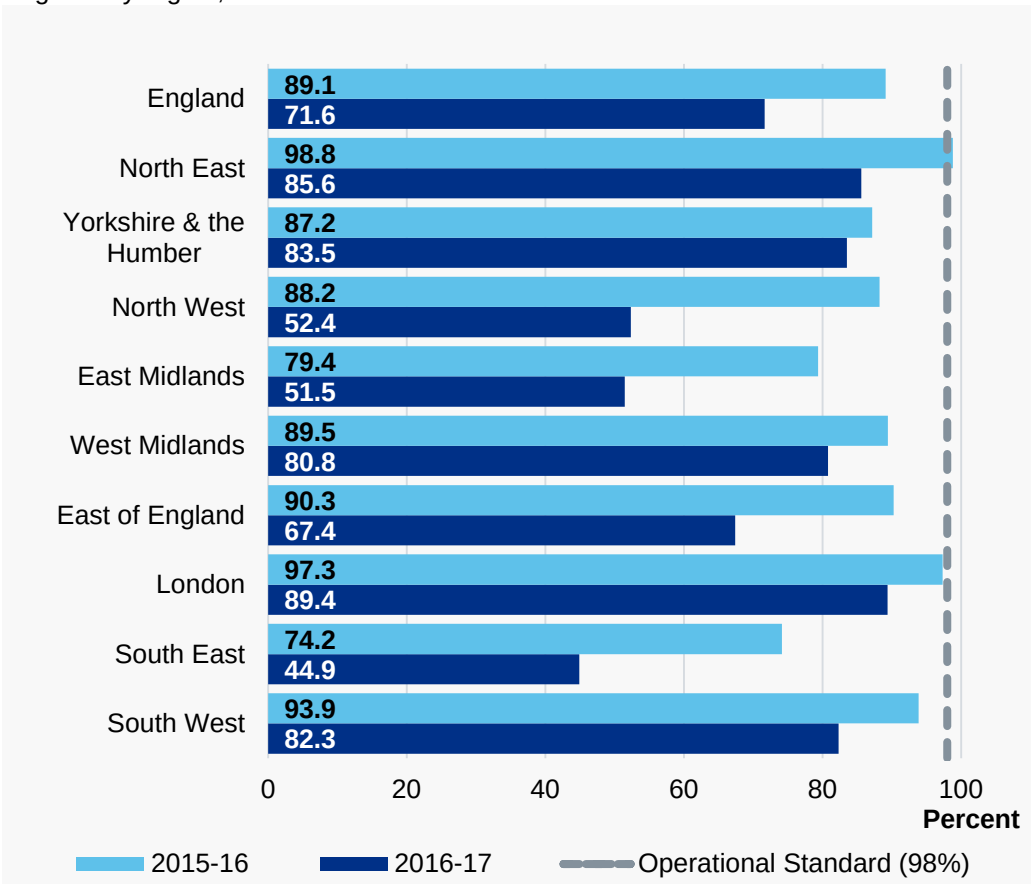
	2015-16	2016-17
Total letters to women tested	2,979,329	3,019,332
Expected delivery date	%	%
Up to 2 weeks	*89.1*	*71.6*
More than 2 weeks and up to 3 weeks	*9.4*	*17.7*
More than 3 weeks	*1.5*	*10.6*

Source: National Cancer Screening Statistics VSA15 Report, NHS Digital 'Open Exeter' system (NHS Digital). See Tables 9 and 9a in the Data Tables.

2.4.3 At a regional level, the highest percentage of letters received within 2 weeks of results was reported in London (89.4%), with the lowest in the South East (44.9%). In 2016-17, no region met the Key Performance Indicator current acceptable value of 98.0% (see Figure 9).

Figure 9: Cervical screening – Time from screening to receipt of results as measured by expected date of delivery of result letter (eligible women aged 25–64 years), percentage received within 2 weeks

England by region, 2015-16 and 2016-17



Source: National Cancer Screening Statistics VSA15 Report, NHS Digital 'Open Exeter' system. See Table 9a in the Data Tables.

Tables 9 and 9a in the Data Tables presents more detailed figures by region and LA on time from screening to receipt of results. The data tables are available through the following link:

http://digital.nhs.uk/pubs/cervical1617

2.5 Recall status

2.5.1 There are three types of recall status within the NHS Cervical Screening Programme; normal recall, repeat recall and suspend recall.

- **Normal recall status** indicated by action code A, (routine recall) was previously used only where the test result was negative. With the roll out of HPV testing as triage for women with mild or borderline cervical screening test results[11], a woman may now be given a normal recall status following a test result of borderline change or low-grade dyskaryosis if the test was HPV negative (see 'Changes in Screening Policy' under section 1.7 of the separate Data Quality Statement).

[11] For more information on HPV triage, see 'Changes in Screening Policy' under section 1.7 of the separate Data Quality Statement.

- **Repeat recall status**, action code R, requires a further test which is usually earlier than routine recall.[12] This may be used where a test result is inadequate, negative (depending on a women's screening history), borderline change or low-grade dyskaryosis.
- **Suspend recall status**, action code S, is an indication that recall has been suspended due to referral to colposcopy. This is the only allowable status following a test result of high-grade dyskaryosis (moderate) or worse. It is also used for women who are referred after repeated inadequate or low-grade abnormalities (i.e. borderline change or low-grade dyskaryosis) and for women who are to remain under hospital care regardless of their test result. With the roll out of HPV triage it is also used for women with borderline/low-grade cytology and HPV-positive test results.

2.5.2 In 2016-17, almost all women with an inadequate test result (97.1%) had a repeat recall status (See Table L). Amongst women who had nothing other than a negative test result in the year, 93.8% had a normal recall status. Of the remaining women with negative results, 5.1% had a repeat recall status as they were under surveillance or follow-up and 1.1% had a suspend recall status as they were under hospital care[13].

[12] The next test can be up to 36 months if a fixed 3 year repeat is required after treatment.

[13] Those with a negative test result and suspend recall status could include some who were referred to colposcopy due to symptoms noted at the time of testing.

Table L: Recall status by most severe screening result

England, 2016-17 Percentages

Screening result	Recall Status		
	Normal (A)	Repeat (R)	Suspend (S)
	%	%	%
Inadequate	-	97.1	2.9
Negative	93.8	5.1	1.1
Borderline changes	49.6	2.9	47.5
Low-grade dyskaryosis	23.3	1.1	75.6
High-grade dyskaryosis (moderate)	-	-	100.0
High-grade dyskaryosis (severe)	-	-	100.0
High-grade dyskaryosis/?invasive carcinoma*	-	-	100.0
?Glandular neoplasia (endocervical)**	-	-	100.0

NB: The sum of components may not equal totals due to rounding.
- = recall status not applicable for this result
* ?invasive carcinoma means 'suspected invasive carcinoma',
** ?glandular neoplasia (endocervical) means 'suspected glandular neoplasia of endocervical type'
Source: KC53, NHS Digital. See Table 10 in the Data Tables.

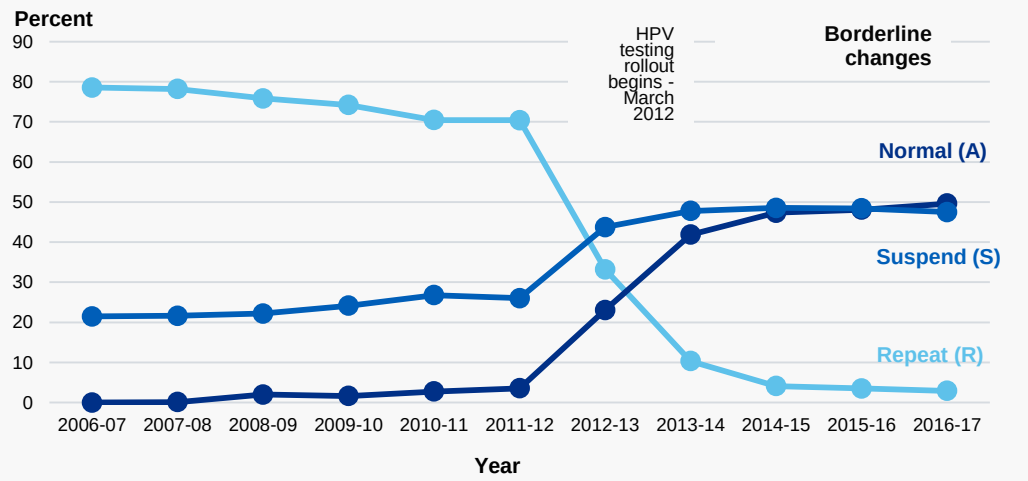
2.5.3 Figures 10a and 10b show the recall status for women with borderline and low-grade test results over the last ten years and highlight the impact of the roll-out of HPV testing as triage and test of cure which began in March 2012.

Prior to HPV testing as triage and test of cure most women with a first borderline screening result would have had a repeat recall status. In 2011-12, 70.4% of women fell into this category. Where HPV testing has been implemented, women with a borderline result are tested for high risk HPV and depending on the result either returned to 'normal' routine recall or referred to colposcopy and given a suspend recall status. In 2016-17, comparatively few (2.9%) were given repeat recall status – see Figure 10a.

The change following the introduction of HPV testing is less pronounced for women with low-grade dyskaryosis screening results but the increase in the proportion of women with a normal recall status and the fall in the proportion with a repeat recall status is still evident – see Figure 10b.

Figure 10a: Recall status for women with borderline screening results

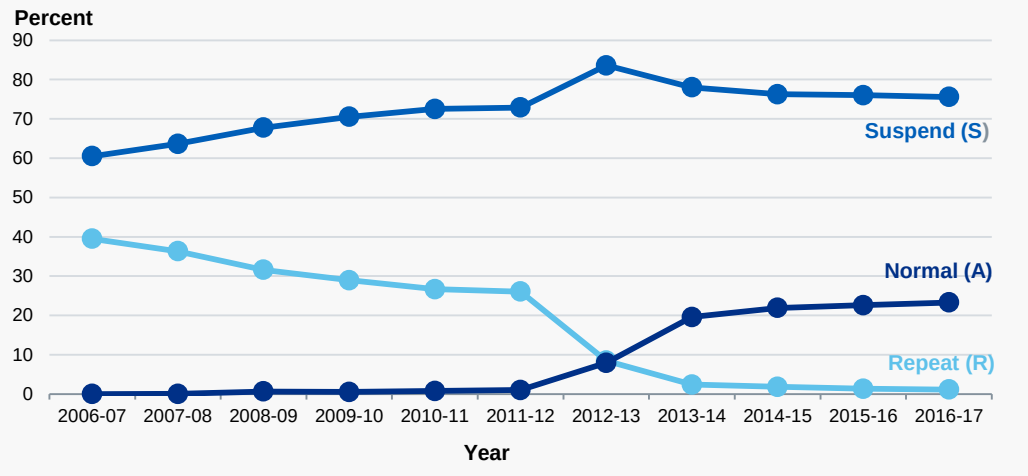
England, 2006-07 to 2016-17



NB: Figures prior to 2013-14 are derived from the PCO dataset – see Appendix B
Source: KC53, NHS Digital. See Table 10 in the Data Tables.

Figure 10b: Recall status for women with low-grade screening results

England, 2006-07 to 2016-17



NB: Figures prior to 2013-14 are derived from the PCO dataset – see Appendix B
Source: KC53, NHS Digital. See Table 10 in the Data Tables.

The impact, if any, of ABC3[14] (implemented in April 2013) on the recall status of women with borderline and low-grade test results is not clear as tests showing borderline change with koilocytosis were not identified separately prior to ABC3 (see section 1.7 on 'Changes in reporting and classification of cervical cytology' of the Data Quality Statement which accompanies this publication for more information).

[14] See Achievable standards, Benchmarks for reporting, and Criteria for evaluating cervical cytopathology (ABC3)- third edition https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/436753/nhscsp01.pdf

Cervical Cytology

3.1 Samples examined

3.1.1 3.32 million samples were examined by pathology laboratories in 2016-17. This compares with 3.25 million in 2015-16. Of the samples examined in 2016-17, 3.16 million (95.1%) were submitted by GPs and NHS Community Clinics – almost all these would have been samples taken as part of the screening programme. A further 0.13 million (4.1%) of the samples were from NHS hospitals including colposcopy clinics (see Table M).

95.1% of samples to laboratories were submitted by GPs or NHS Community Clinics

Table M: Samples examined by pathology laboratories by source of sample

England, 2015-16 and 2016-17 — Numbers and *Percentages*

Year	**Total samples**	GP (%)	NHSCC (%)	GUM (%)	NHS Hospital (%)	Private (%)	Other (%)
2015-16	**3,245,220**	*92.9*	*1.9*	*0.6*	*4.4*	*0.1*	*0.1*
2016-17	**3,322,663**	*93.9*	*1.2*	*0.5*	*4.1*	*0.1*	*0.3*

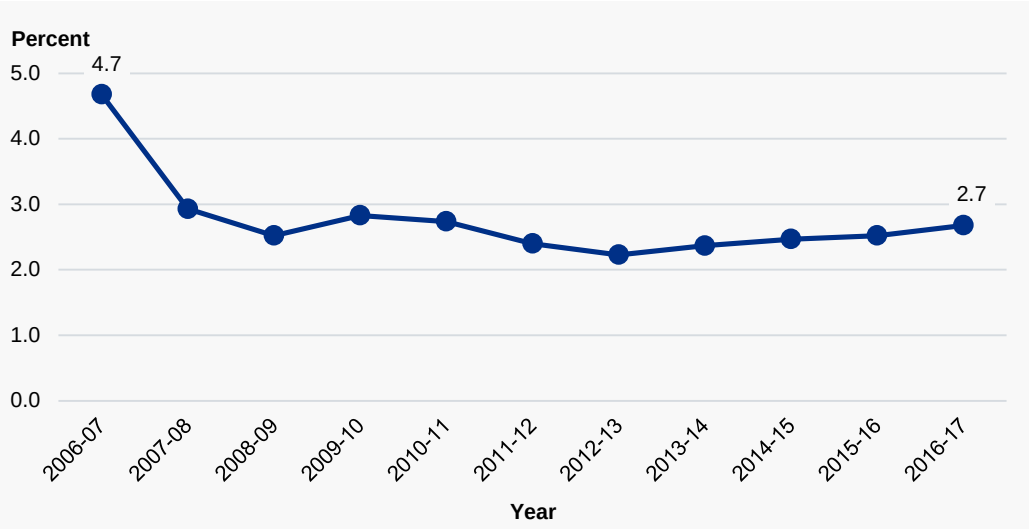
Source: KC61, NHS Digital. See Table 14 in the Data Tables.

3.1.2 In 2016-17, 2.7% of samples from GP and NHS Community Clinics were inadequate in women aged 25-64, broadly similar to the previous year but a fall on the 4.7% reported ten years ago in 2006-07 (see Figure 11). The fall in inadequate samples is associated with the introduction of Liquid Based Cytology (LBC), a way of preparing cervical samples for examination in the laboratory which was introduced following a National Institute for Health and Care Excellence (NICE) Technology Appraisal.

A number of laboratories began the conversion to LBC in 2004-05 and by the end of 2008-09 all laboratories had converted. Before the introduction of LBC technology, rates of inadequate samples submitted by GP and NHS Community Clinics for women aged 25 to 64 were between 9% and 10% each year and these women had to be tested again.

Figure 11: Cervical cytology - Percentages of samples from GP & NHS Community Clinics found to be inadequate, from women aged 25-64

England, 2006-07 to 2016-17



Source: KC61, NHS Digital. See Tables 1 and 15 in the Data Tables.

3.1.3 Analysis by age group has shown that the proportion of samples found inadequate was generally lower for women in the younger age bands, below 55 years (see Table N).

Table N: GP and NHS Community Clinic samples examined by pathology laboratories - Proportion inadequate by age group of women

England, 2016-17 — Percentages

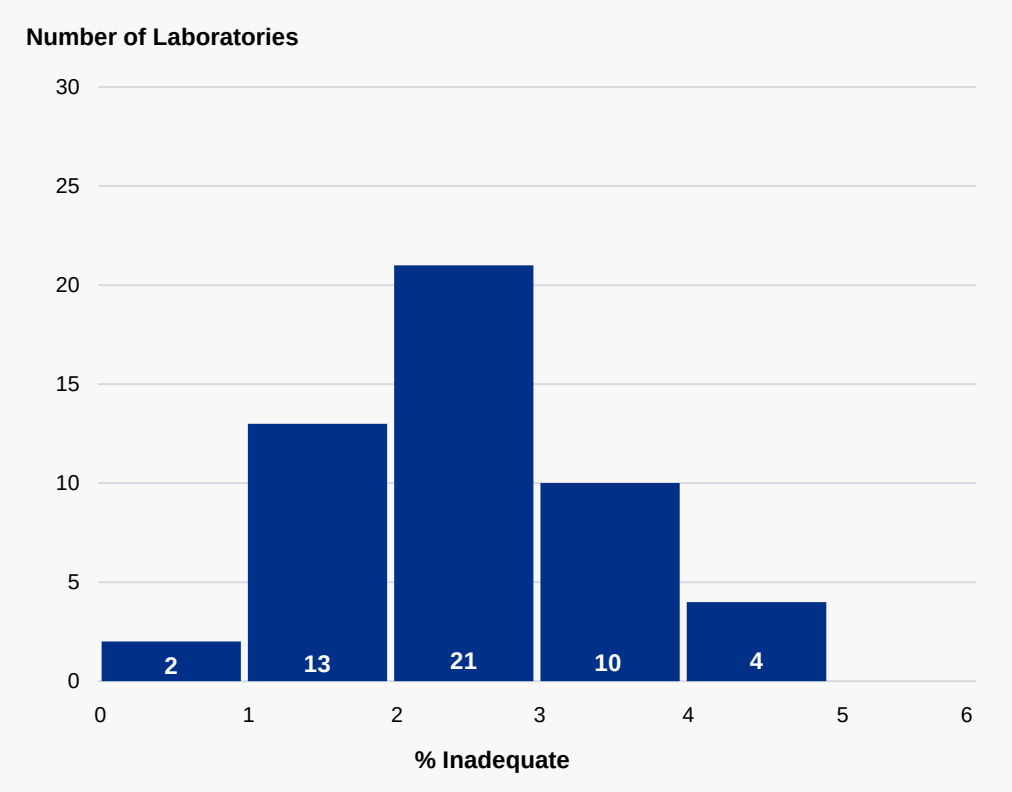
Age	% Inadequate	Age	% Inadequate
Under 20	2.8	50-54	2.8
20-24	2.1	55-59	3.9
25-29	2.3	60-64	4.0
30-34	2.4	65-69	5.2
35-39	2.5	70-74	3.8
40-44	2.4	75 and over	5.3
45-49	2.5		
All ages	2.7		
25-64	2.7		

Source: KC61, NHS Digital. See Table 15 in the Data Tables.

3.1.4 In 2016-17, 5 laboratories had inadequate rates over 4%, with most (44 of 51) recording rates over 1% but less than 4% – see Figure 12.

Figure 12: Cervical cytology - Percentage of samples from GP & NHS Community Clinics found to be inadequate, for women aged 25-64, by laboratory

England, 2016-17



Source: KC61, NHS Digital. See Table 19 in the Data Tables.
Chase Farm laboratory reported an abnormally high number of Inadequate samples and is currently being audited to investigate this. Consequently, their results are omitted from Figure 12.

3.2 Results

3.2.1 The percentage of adequate GP and NHS Community Clinic samples tested in 2016-17 for women aged 25 to 64 reported as being negative was 94.8%. Borderline change was found in 2.2% of adequate tests and low-grade dyskaryosis in 2.0%. Table O gives a full breakdown of test results from adequate samples from women aged 25-64 years.

Table O: GP and NHS Community Clinic adequate samples (women aged 25-64) examined by pathology laboratory by result

England, 2016-17 — Numbers and *Percentages*

Test result	Number	%
Negative	2,805,118	*94.8*
Borderline changes	64,586	*2.2*
Low-grade dyskaryosis	59,214	*2.0*
High-grade dyskaryosis (moderate)	12,162	*0.4*
High-grade dyskaryosis (severe)	16,083	*0.5*
High-grade dyskaryosis/?invasive carcinoma*	606	*0.0*
?Glandular neoplasia (endocervical)**	1,144	*0.0*
Total Adequate	**2,958,913**	***100.0***

* ?invasive carcinoma means 'suspected invasive carcinoma',
** ?glandular neoplasia (endocervical) means 'suspected glandular neoplasia of endocervical type'.
NB: The sum of components may not equal totals due to rounding.
Source: KC61, NHS Digital. See Table 15 in the Data Tables, which includes figures for inadequates.

Of adequate samples submitted by GPs and NHS Community Clinics, 94.8% of test results were returned Negative

3.2.2 Analysis of the test results by age group showed that younger women below the age of 30 were amongst those most likely to have an abnormal test result (see Table 15 in Data Tables). At laboratory level there was variation in the percentage distribution of results, in particular in the proportion reported as borderline change or low-grade dyskaryosis (see Table 19 in Data Tables).

3.2.3 The percentage of laboratory tests authorised (i.e. test results confirmed) within two weeks of receipt at the laboratory fell from 97.0% in 2015-16 to 85.0% in 2016-17 – see Table P.

Table P: Samples examined by pathology laboratories – Time from receipt of sample to authorisation of report by laboratory

England, 2015-16 and 2016-17 — Numbers and *Percentages*

Year	Total samples examined	0-2 weeks (0-14 days)	3-4 weeks (15-28 days)	5 weeks plus (29 Days+)
2015-16	3,245,220	*97.0*	*2.7*	*0.3*
2016-17	3,322,866	*85.0*	*10.2*	*4.8*

NB: The sum of components may not equal totals due to rounding.
Source: KC61, NHS Digital. See Tables 16 and 16a in the Data Tables.

3.3 Outcome of gynaecological referrals

3.3.1 Information about outcomes of gynaecological referrals following tests registered during April – June 2016 was provided by all 51 operating laboratories in 2016-17.

Table Q shows outcomes broken down by two groups - women referred after *non-negative sample(s)* (where these are persistent or followed by a positive HPV test) and women referred after a *single occurrence of a potentially significant abnormality*. Outcomes for the two groups are shown for the first quarters of 2016-17 and 2015-16 for comparison.

Women referred to colposcopy after non-negative samples (persistent inadequate or with positive HPV test)

Prior to the roll out of HPV testing as triage, women would usually be referred to colposcopy with non-negative test results (where the most significant test result was either inadequate, borderline change or low-grade dyskaryosis) if they were 'persistent'. Since 2004 laboratories could refer on first mild (now referred to as low-grade) dyskaryotic result. With the roll out of HPV testing, women should be referred to colposcopy after their first test result showing borderline change or low-grade dyskaryosis where they also test positive for HPV.

Women referred to colposcopy after a single occurrence of a potentially significant abnormality

This group includes outcomes of referrals where the most significant result was either high-grade dyskaryosis (moderate), high-grade dyskaryosis (severe), high-grade dyskaryosis (severe)/?invasive squamous carcinoma or ?glandular neoplasia of endocervical type.

Higher proportions of women referred to colposcopy after a single occurrence of potentially significant abnormality had outcomes of CIN (Cervical Intra-epithelial Neoplasia) 2 or worse (i.e. CIN2, CIN3 and adenocarcinoma in situ or cervical cancer) when compared with women referred after non-negative sample results (see Table Q and Figure 13).

CIN is an indicator of the depth of abnormal cells within the surface layer of the cervix, and is divided into three grades. The higher the number/grade, the more severe the condition[15].

Adenocarcinoma in situ is a localised growth of abnormal glandular tissue that may become malignant[16].

In the first quarter of 2016-17, for referrals following a potentially significant abnormality, 59.7% were found to have the most severe condition of cervical cancer, cervical intra-epithelial neoplasia (CIN 3) or adenocarcinoma in situ. This compares to 5.3% for referrals following non-negative samples.

[15] See Appendix E on Outcomes of Gynaecological Referrals for further information about cervical intra-epithelial neoplasia (CIN).
[16] http://medical-dictionary.thefreedictionary.com/

Table Q: Outcome of colposcopy referrals for samples registered at the laboratory

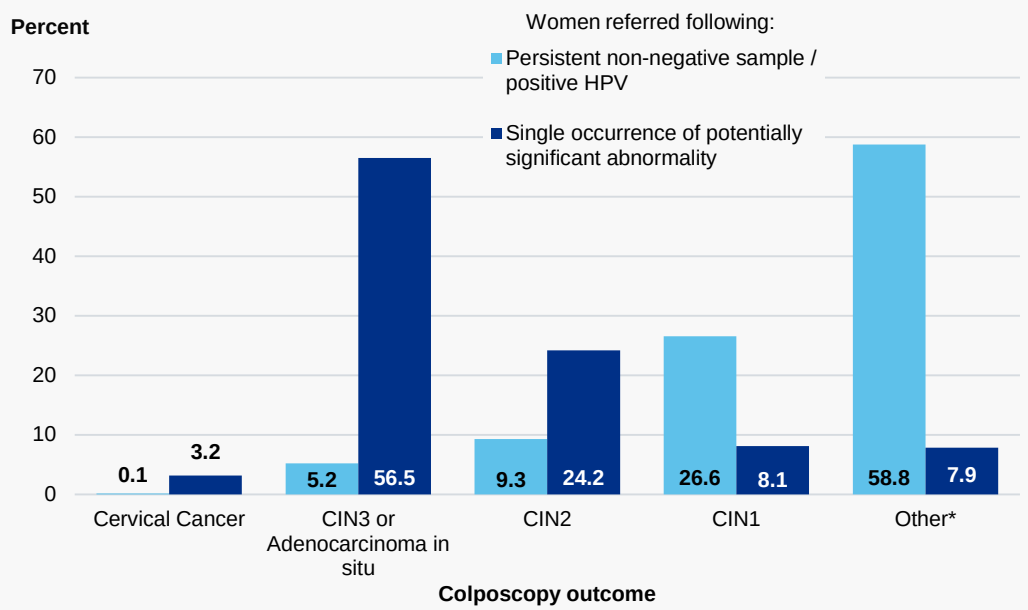
England, April to June 2015 and April to June 2016 Numbers and *Percentages*

		Women referred after non-negative samples - persistent inadequate or with positive HPV test		Women referred after a potentially significant abnormality	
		Apr to Jun 2015	**Apr to Jun 2016**	**Apr to Jun 2015**	**Apr to Jun 2016**
Total outcomes with known result		21,440	20,556	9,674	8,892
		%	%	%	%
Cervical Cancer		*0.1*	*0.1*	*2.6*	*3.2*
CIN3 & Adenocarcinoma in Situ		*5.9*	*5.2*	*58.8*	*56.5*
CIN2		*10.0*	*9.3*	*23.2*	*24.2*
CIN1		*27.7*	*26.6*	*8.0*	*8.1*
Non Cervical Cancer		*0.0*	*0.0*	*0.1*	*0.1*
	HPV Only	*14.7*	*14.9*	*2.8*	*2.9*
	No CIN/No HPV	*10.1*	*8.9*	*2.5*	*3.0*
Other	Seen in Colposcopy – result n/k	*0.7*	*0.3*	*0.2*	*0.1*
	Inadequate Biopsy	*1.7*	*1.8*	*0.4*	*0.3*
	Colposcopy – No Abnormality Detected	*29.2*	*33.0*	*1.3*	*1.5*

Sum of components may not equal 100% due to rounding.
Source: KC61, NHS Digital. See Table 18a in the Data Tables.

Figure 13: Outcome of referral to colposcopy, by reason for referral (cytology result)

England, April 2016 to June 2016



NB: The sum of components may not equal totals due to rounding.
* See Table Q for a full breakdown of the 'Other' category. Chart excludes a very small number of cases with a non-cervical cancer outcome.

Source: KC61, NHS Digital. See Table 18a in the Data Tables.

3.4 Achievable standards for laboratory reporting

3.4.1 The distribution of the individual laboratory results is used for quality assurance purposes, as set out in section 7.4 of the 3rd edition of 'Achievable standards, Benchmarks for reporting, and Criteria for evaluating cervical cytopathology' published by the NHS Cancer Screening Programmes in January 2013[17]. This document sets achievable targets and standards for laboratories engaged in cervical screening.

Achievable standards for laboratory reporting are set from the 5th and 95th percentiles[18] of the distributions of key indicators. The ranges for 2016-17 are set out in Table R. This information is used by the screening programme for performance monitoring purposes with laboratories whose performance falls outside the indicated range required to investigate the reason(s) for this.

[17] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/436753/nhscsp01.pdf

[18] A percentile is the value of a variable below which a certain percent of observations fall. For example, the 5th percentile is the value (or score) below which 5 percent of the observations may be found.

Table R: Achievable standards for laboratory reporting

England, 2015-16 and 2016-17

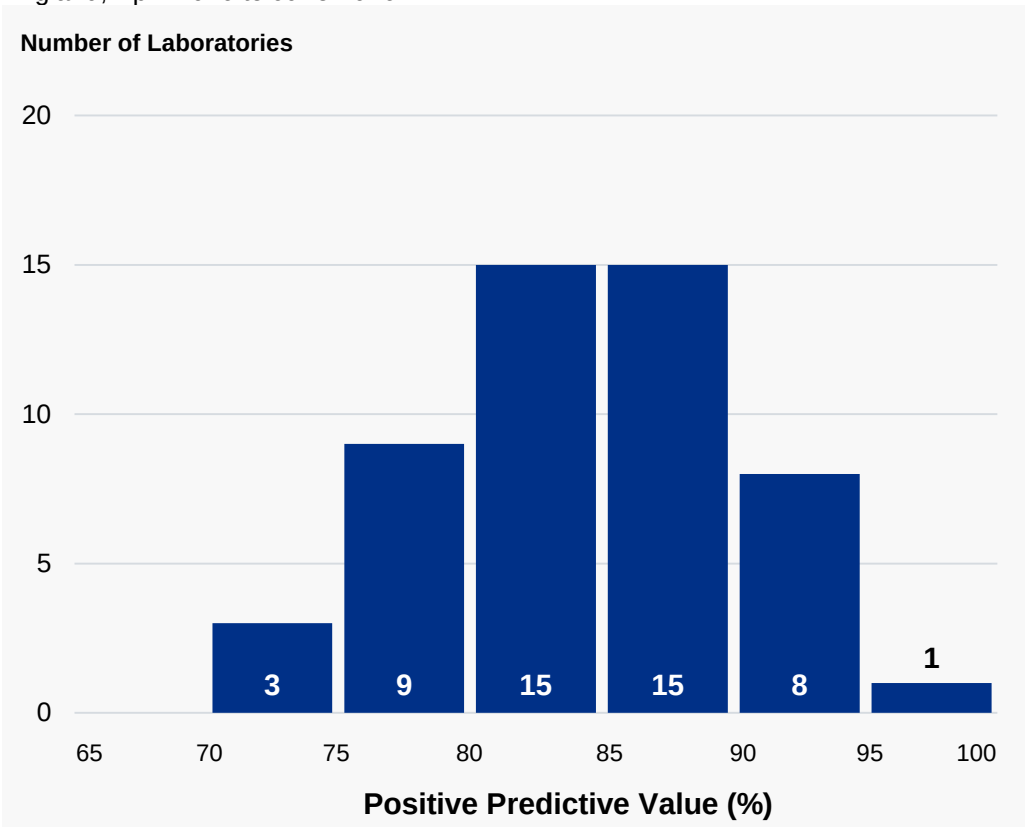
Indicator	5th - 95th percentile range	
	2015-16	**2016-17**
Positive Predictive Value (PPV) for CIN2 or worse*	76.0 - 92.5%	76.7 - 92.3%
Referral Value for CIN2 or worse*	1.9 - 4.5	2.0 - 5.0
Abnormal Predictive Value (APV) for CIN2 or worse*	7.2 - 27.9%	6.8 - 26.7%
Inadequate as a % of all samples**	1.0 - 5.1%	1.0 - 4.3%
Number of laboratories whose results were used	58	51

* The percentile ranges for the PPV, RV and APV indicators are calculated using data from the previous year (KC61, Part C2). For example, the PPV for 2016-17 is based on data from 2015-16. See Appendix B for definitions of PPV, RV and APV.
See Appendix E on Outcomes of Gynaecological Referrals for further information about cervical intra-epithelial neoplasia (CIN).
** Based on results for women aged 25-64 tested in GP and NHS community clinics only.
NB: Women with negative cytology but who test positive for HPV and are referred to colposcopy are not currently included in the calculation of referral value. See Appendix B – Definitions for more information.
Source: KC61, NHS Digital. See Tables 19 and 19a in the Data Tables.

3.4.2 A positive predictive value (PPV) is calculated for each laboratory. PPV is a measure of the laboratory's ability to predict CIN2 or worse from tests with a result high-grade dyskaryosis (moderate) or worse. The PPV calculation for cervical screening is outlined in Appendix B on Definitions. Reported PPVs for laboratories in the first quarter of 2016-17 ranged from 74.3% to 96.7% with the majority lying between 75% and 95% (see Figure 14). The range and distribution of PPV values in the first quarter of 2016-17 are similar to those for the period April 2015 to March 2016 (the latest complete year for which data are available).

Figure 14: Positive Predictive Value, by laboratory

England, April 2016 to June 2016

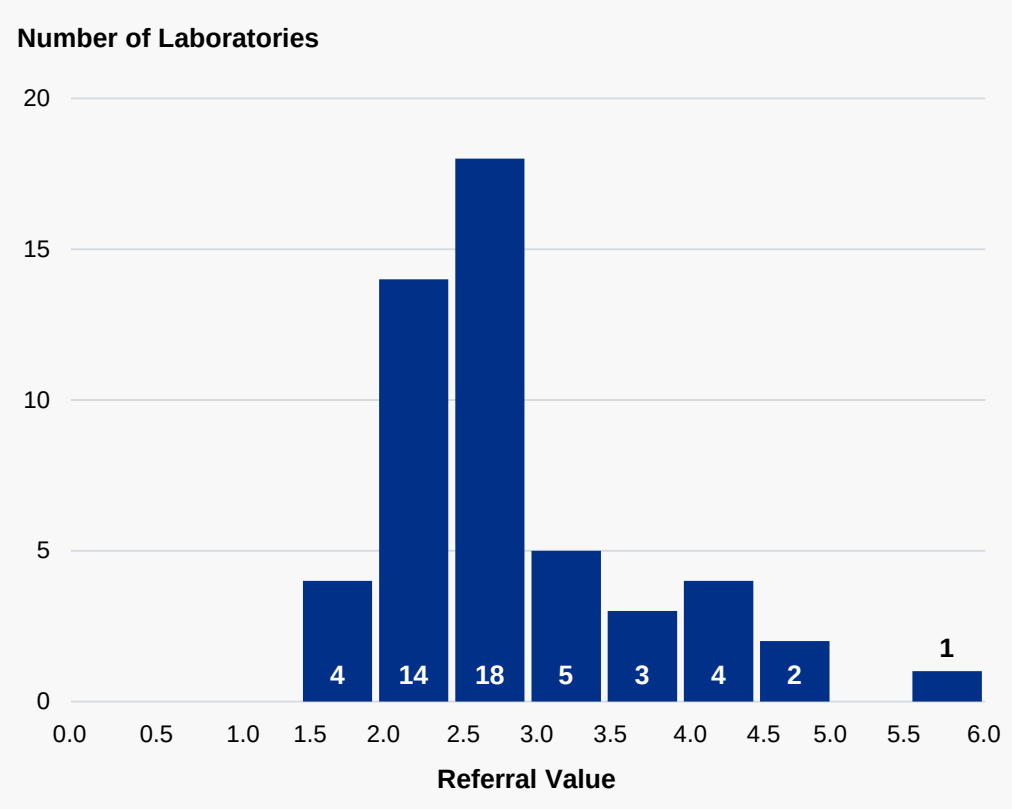


Source: KC61, NHS Digital. See Table 19a in the Data Tables.

3.4.3 A Referral Value (RV) is calculated for each laboratory. The Referral Value is defined as the number of women referred to colposcopy (excluding inadequate referrals) per detection of one CIN2 or worse lesion. The RV calculation for cervical screening is outlined in Appendix B on Definitions. Following the implementation of ABC3 from April 2013, the RV calculation does not include ?glandular neoplasia (non-cervical). Reported RVs for laboratories in the first quarter of 2016-17 ranged from 1.5 to 5.6 with the majority lying between 2.0 and 3.0 (see Figure 15).

Figure 15: Referral Value, by laboratory

England, April 2016 to June 2016



NB: Women with negative cytology but who test positive for HPV and are referred to colposcopy, are not currently included in the calculation of referral value. See Appendix B - Definitions for more information.
Source: KC61, NHS Digital. See Table 19a in the Data Tables.

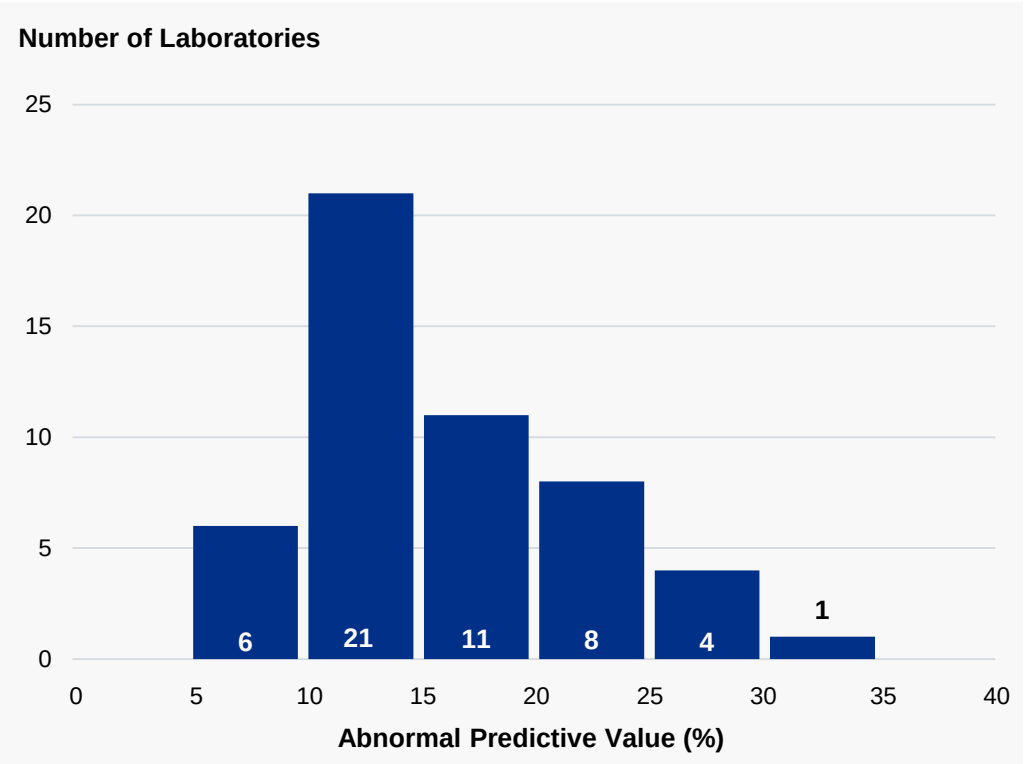
The range and distribution of RV values in the first quarter of 2016-17 are similar to those for the period April 2015 to March 2016 (the latest complete year for which data are available).

3.4.4 An Abnormal Predictive Value (APV)[19] is calculated for each laboratory and represents the percentage of samples reported as borderline or low grade that led to referral and subsequent histological diagnosis of CIN2 or worse. The APV calculation for cervical screening is outlined in Appendix B on Definitions. Reported APVs for laboratories in the first quarter of 2016-17 ranged from 5.3% to 31.1% with the majority lying between 10% and 25% (see Figure 16).

[19] APV and PPV values are best viewed as a plot of APV against PPV – see section 7.7 of the document on the link below for more detail
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/436753/nhscsp01.pdf

Figure 16: Abnormal Predictive Value, by laboratory

England, April 2016 to June 2016



Source: KC61, NHS Digital. See Table 19a in the Data Tables.

Colposcopy

4.1 Referrals for colposcopy

4.1.1 Details of the first referrals of each quarter to each clinic were recorded. A total of 184,638 referrals to colposcopy were reported in 2016-17, a fall of 2.0% from 2015-16 (188,360 referrals).

Of all the referrals to colposcopy in 2016-17, 63.0% were reported as being triggered by a screening test and 25.9% were clinically indicated (i.e. women were referred because they had symptoms of a cervical abnormality). Breaking down the referrals from screening tests further, 44.0% of referrals followed findings of borderline change or low-grade dyskaryosis; 7.3% of referrals followed findings of high-grade dyskaryosis (moderate) and 10.9% followed findings of high-grade dyskaryosis (severe) or worse (see Table S).

The numbers of referrals to colposcopy for 'Other' reasons fell slightly from 11.3% in 2015-16 to 11.0% in 2016-17. The 'Other' category includes women who have been screened following treatment for cervical abnormalities under the Test of Cure protocol and who had a normal cytology result but tested positive for HPV.

Table S: Women referred to colposcopy - Referral indication of first offered appointment

England, 2015-16 and 2016-17 — Numbers and *Percentages*

	2015-16	**2016-17**
Total number of referrals	188,360	184,638
	%	%
Screening sample - total*	*65.6*	*63.0*
Inadequate	*0.8*	*0.8*
Borderline changes	*18.4*	*17.5*
Low-grade dyskaryosis	*26.8*	*26.5*
High-grade dyskaryosis (moderate)	*7.7*	*7.3*
High-grade dyskaryosis (severe)	*10.9*	*10.0*
High-grade dyskaryosis/?invasive carcinoma**	*0.3*	*0.3*
?Glandular neoplasia**	*0.7*	*0.7*
Clinical indication – urgent	*6.9*	*7.4*
Clinical indication – non urgent	*16.2*	*18.5*
Other	*11.3*	*11.0*
Total	*100.0*	*100.0*

* Sum of inadequate, borderline change, low-grade dyskaryosis, high-grade dyskaryosis (moderate), high-grade dyskaryosis (severe), high-grade dyskaryosis (severe)/?invasive carcinoma and ?glandular neoplasia.
** ?invasive carcinoma means 'suspected invasive carcinoma', ?glandular neoplasia means 'suspected glandular neoplasia'
Source: KC65, NHS Digital. See Table 20 in the Data Tables.

4.1.2 Clinics were asked to supply data on the time between the date on the woman's referral letter and her first offered out-patient appointment, regardless of whether she attended the appointment or not. Where direct referral systems are in operation, the referral date has been taken to be the date the test was reported.

In 2016-17, where women were referred to colposcopy, 39.3% were offered an appointment within 2 weeks of referral compared to 36.4% the previous year (see Table T). This percentage rose to 68.0% for those offered an appointment within 4 weeks, also an improvement on the 65.4% seen in 2015-16.

68.0% of referrals to colposcopy were offered an appointment within 4 weeks

The time from referral to the first offered appointment was over 12 weeks for 0.7% of women referred in 2016-17. This could include instances where patients had requested a delayed appointment for personal reasons or where treatment for another condition had to be completed before colposcopy could take place.

Table T: Women referred to colposcopy – Time from referral to first offered appointment by indication

England, 2015-16 and 2016-17 — Number and *Percentages*

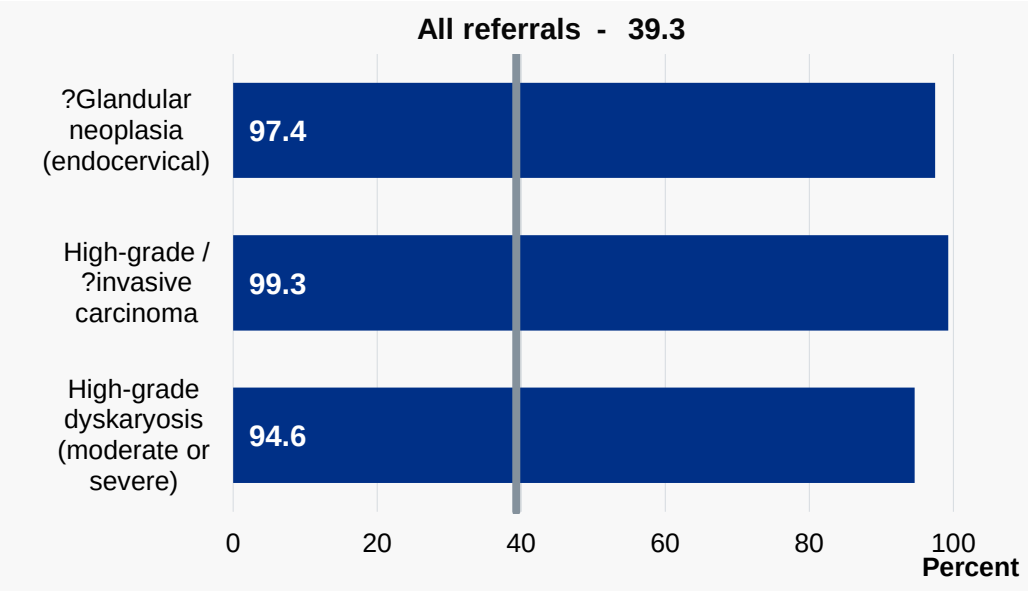
	2015-16	2016-17
Total number of referrals	188,360	184,638
Waiting time	%	%
All referrals		
less than or equal to 2 weeks	*36.4*	*39.3*
less than or equal to 4 weeks	*65.4*	*68.0*
less than or equal to 8 weeks	*98.8*	*98.5*
less than or equal to 12 weeks	*99.6*	*99.3*
High-grade dyskaryosis (moderate or severe)		
less than or equal to 4 weeks	*98.6*	*99.2*
High-grade dyskaryosis / ?invasive carcinoma*		
less than or equal to 2 weeks	*98.3*	*99.3*
?Glandular neoplasia*		
less than or equal to 2 weeks	*96.4*	*97.4*

* ?invasive carcinoma means 'suspected invasive carcinoma', ?glandular neoplasia means 'suspected glandular neoplasia'
Source: KC65, NHS Digital. See Tables 20 and 21 in the Data Tables.

Women with more serious test results were offered appointments earlier – see Figure 17.

Figure 17: Women referred to colposcopy – Women offered an appointment within two weeks of referral by indication

England, April 2016 to June 2016



Source: KC65, NHS Digital. See Table 21 in the Data Tables.

4.1.3 Table U shows the time from referral to first offered appointment at colposcopy by region. The proportions of all women offered an appointment within 8 weeks was over 95% in all regions. Percentages ranged from 95.3% in the North East to 99.5% in the South West.

For those with high-grade dyskaryosis (moderate or severe), the proportion offered an appointment within 4 weeks ranged from 97.7% in Yorkshire & The Humber to 99.8% in London.

For those with high-grade dyskaryosis/?invasive carcinoma, the proportion offered an appointment within 2 weeks was above 98% in all regions. For those with ?glandular neoplasia of endocervical type, the proportion offered an appointment within 2 weeks ranged from 92.0% in the North East to 99.5% in the South West.

Table U: Women referred to colposcopy - Time from referral to first offered appointment by indication

England by reporting region*, 2016-17 Percentages

Referral indication / Waiting time	**England**	**NEYH**	North East	Yorkshire & the Humber	**North West**	**East Midlands**	**West Midlands**	**East of England**	**London**	**South**	South East	South West
All referrals (%)												
less than or equal to 2 weeks	**39.3**	46.3	42.2	48.5	40.4	43.6	42.0	42.8	27.6	40.7	33.5	45.6
less than or equal to 4 weeks	**68.0**	75.3	71.5	77.4	65.2	75.0	74.4	72.6	57.6	67.9	60.5	73.0
less than or equal to 8 weeks	**98.5**	97.0	95.3	97.9	98.9	97.5	98.5	98.6	99.0	99.2	98.7	99.5
less than or equal to 12 weeks	**99.3**	98.7	97.1	99.6	99.8	99.0	99.2	99.0	99.3	99.7	99.7	99.8
High-grade dyskaryosis (moderate or severe) (%)												
less than or equal to 4 weeks	**99.2**	98.3	99.2	97.7	99.7	99.1	99.5	98.5	99.8	99.6	99.7	99.5
High-grade dyskaryosis/ ?invasive carcinoma (%)**												
less than or equal to 2 weeks	**99.3**	100.0	100.0	100.0	98.8	98.8	98.8	100.0	100.0	99.3	98.3	100.0
?Glandular neoplasia (endocervical)* (%)**												
less than or equal to 2 weeks	**97.4**	95.5	92.0	97.8	98.3	94.8	95.8	99.1	97.5	99.0	98.5	99.5

*The North East Yorkshire and Humber reporting region is broken down into Yorkshire and the Humber and the North East sub-regions which operated prior to 1 April 2013. The South East reporting region is broken down to show the South Central and South East Coast sub-regions.
**?invasive carcinoma means 'suspected invasive carcinoma'.
*** ?glandular neoplasia (endocervical) means 'suspected glandular neoplasia of endocervical type'.
Source: KC65, NHS Digital. See Table 21 in the Data Tables.

4.2 Appointments for colposcopy

4.2.1 During 2016-17, a total of 417,493 appointments were reported at colposcopy clinics, a decrease of 3.8% on 2015-16 (433,839 appointments). Of these, 54.8% were new appointments (i.e. all appointments offered for a first visit), representing a slight increase from 54.1% in 2015-16. Return for treatment appointments made up 7.9% of the total, and 37.3% of appointments were follow-ups (see Table V).

Table V: Appointments for colposcopy - Appointment type

England, 2015-16 and 2016-17 Numbers and *Percentages*

	2015-16		**2016-17**	
Appointment type	Number	%	Number	%
New appointments	234,620	*54.1*	228,953	*54.8*
Return for treatment	35,360	*8.2*	32,944	*7.9*
Follow up	163,859	*37.8*	155,596	*37.3*
Total	**433,839**	***100.0***	**417,493**	***100.0***

NB: The sum of components may not equal totals due to rounding.
Source: KC65, NHS Digital. See Table 22 in the Data Tables.

8.8% of patients did not attend colposcopy appointments and gave no prior warning

4.2.2 Table W shows that although 71.7% of all appointments in 2016-17 were attended, 2.4% were cancelled by the patient on the day and in the case of 8.8% of appointments, the patient did not attend and gave no advance warning. 3.8% of total appointments were cancelled by the clinic.

The lowest attendance was seen in follow-up appointments, where only 64.3% were attended; in 12.0% of follow up appointments the patient failed to attend with no advance notice.

Table W: Appointments for colposcopy - Attendance status and appointment type

England, 2016-17 Numbers and *Percentages*

Attendance status	New appointments	Return for treatment	Follow up	All appointments
Total appointments	228,953	32,944	155,596	417,493
	%	%	%	%
Attended	*75.6*	*79.1*	*64.3*	*71.7*
Cancelled by patient - in advance	*12.6*	*12.0*	*14.6*	*13.3*
Cancelled by patient - on the day	*2.2*	*2.0*	*2.7*	*2.4*
Cancelled by clinic	*2.2*	*2.4*	*6.4*	*3.8*
Did not attend - no advance warning	*7.2*	*4.4*	*12.0*	*8.8*
Did not attend - arrived late	*0.0*	*0.0*	*0.0*	*0.0*
Did not attend - left without being seen	*0.0*	*0.1*	*0.1*	*0.0*
Total	***100.0***	***100.0***	***100.0***	***100.0***

NB: The sum of components may not equal totals due to rounding.
Source: KC65, NHS Digital. See Table 22 in the Data Tables.

4.3 First Attendances at colposcopy

4.3.1 Clinics are required to supply details of all treatment and procedures undertaken at first attendance at the colposcopy clinic. The data collected relate only to procedures undertaken the first time a woman attends. In the case of deferred treatment the woman will be recorded as having no treatment at her first attendance.

4.3.2 In 2016-17, a total of 173,141 first attendances at colposcopy were reported, a fall of 2.0% from 2015-16 (176,675 attendances) – see Table X. Most first attendances will relate to a referral in that year, although some women attending may have been referred in a previous year and some of the women referred in 2016-17 will attend in the next year.

Of all first attendances at colposcopy, 58.6% of women had some treatment or procedure. For those referred with high-grade abnormalities the proportion was 87.6%. For those referred with low-

grade abnormalities (borderline change or low-grade dyskaryosis), it was 63.9%.

The most common treatment or procedure at first attendance was diagnostic biopsy, which was carried out at 45.5% of all first attendances. The use of this procedure was most common amongst those referred with low-grade abnormalities (62.1%), with only 1.4% of those with low grade abnormalities undergoing excision. Conversely, for those referred with high-grade abnormalities, the most common treatment at first attendance was excision (52.2%), followed by diagnostic biopsy (35.2%).

Table X: Women referred to colposcopy - First attendance by type of procedure and result of referral

England, 2016-17 Numbers and *Percentages*

	Referral indication					
Treatment	All referrals*	Inadequate	Borderline changes or low-grade dyskaryosis	High-grade dyskaryosis or worse**	Clinical indication (urgent)	Clinical indication (non-urgent)
Total first attendances	173,141	1,465	76,726	32,431	12,961	31,249
	%	%	%	%	%	%
No procedure	*41.4*	*76.7*	*36.1*	*12.4*	*58.6*	*60.7*
Procedure used	*58.6*	*23.3*	*63.9*	*87.6*	*41.4*	*39.3*
Diagnostic biopsy	*45.5*	*21.2*	*62.1*	*35.2*	*34.0*	*31.2*
Excision	*11.0*	*0.3*	*1.4*	*52.2*	*2.1*	*1.7*
Ablation without biopsy	*0.4*	*0.1*	*0.0*	*0.0*	*0.9*	*1.4*
Ablation with biopsy	*0.1*	-	*0.0*	*0.0*	*0.1*	*0.3*
Other	*1.5*	*1.7*	*0.3*	*0.1*	*4.3*	*4.6*

NB: The sum of components may not equal totals due to rounding.
* Includes 'other' referral indications that cannot be broken down into a specific category.
** Includes invasive carcinoma which means 'suspected invasive carcinoma, and ?glandular neoplasia which means 'suspected glandular neoplasia
Source: KC65, NHS Digital. See Table 23 in the Data Tables.

4.3.3 Treatment patterns vary considerably at local and regional level. The percentage of all women receiving some treatment or procedure at first attendance ranged from 51.6% in London to 69.7% in the North East (see Table 23 in the Data Tables).

The use of diagnostic biopsy for those attending with high-grade abnormalities ranged from 23.9% in the North West to 72.9% in London. For low-grade abnormalities, the equivalent range was 45.2% in the East of England to 81.0% in the North East.

The use of excision at first attendance was more common for those attending with high-grade abnormalities, ranging from 10.6% in London to 62.8% in the North West.

It is likely that the majority of those women presenting with high-grade abnormalities and reported as having either no treatment or a diagnostic biopsy went on to receive therapeutic treatment at a subsequent attendance.

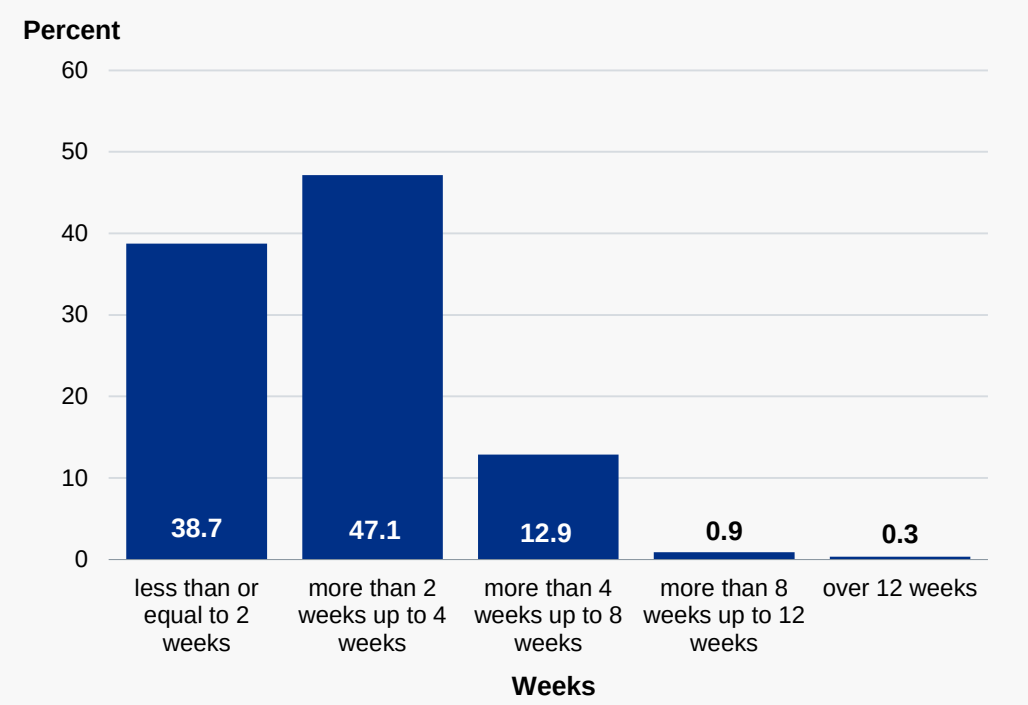
4.4 Biopsies

4.4.1 For each biopsy taken, the time elapsing before the woman is informed in writing of her result is recorded. The interval measured is the time between the date on which the biopsy was taken and the date on the letter that is sent to the patient informing her of her result. In order to allow time for follow up of results, the data relates only to those biopsies taken in the first month of each quarter. The data include all biopsies taken, not just those taken from women on first attendance. It is possible that more than one biopsy may be taken from the same woman.

4.4.2 In 2016-17, a total of 46,356 biopsies were reported by clinics in the four sample months. These represent approximately one third of the total annual workload. The woman was informed of her result within 2 weeks in 38.7% of all cases, and in a further 47.1% of cases, women were informed within 4 weeks. In 0.3% of cases, women had not been informed of their results within 12 weeks (see Figure 18). This latter figure includes cases where the result had yet to be reported to the clinic.

Figure 18: Biopsies taken at colposcopy - Time from biopsy until patient informed of result (4 month sample)

England, 2016-17



NB: The sum of components may not equal totals due to rounding.
Source: KC65, NHS Digital. See Table 24 in the Data Tables.

4.4.3 Clinics are asked to supply data on the histological result for each biopsy taken. Of all biopsies reported, 67.4% were diagnostic, 31.0% were excision and the remaining 1.6% were other non-diagnostic biopsies (see Table Y).

Table Y: Biopsies by type (4 month sample)

England, 2015-16 and 2016-17 — Numbers and *Percentages*

Year	Total biopsies	Diagnostic		Excision		Other non-diagnostic	
		Number	%	Number	%	Number	%
2015-16	52,236	34,807	*66.6*	16,732	*32.0*	697	*1.3*
2016-17	46,341	31,226	*67.4*	14,381	*31.0*	734	*1.6*

Sum of components may not equal totals.
Source: KC65, NHS Digital.

4.4.4 Most non-diagnostic biopsies are excisional, where women are being treated to remove abnormal cells from the cervix. The outcome of most of these biopsies is therefore expected to be CIN2 or worse.

Of all non-diagnostic biopsies (i.e. excision biopsies and other non-diagnostic biopsies) taken in 2016-17, where the result was known, 85.5% showed evidence of cervical intra-epithelial neoplasia (CIN) or worse[20]. This is a slight fall from 2015-16, when the equivalent proportion was 87.0% (see Table Z). CIN2 or worse was found in 74.0% of non-diagnostic biopsies. The proportions at regional level are shown in Table 25 in the Data Tables.

[20] This covers CIN1, CIN2, CIN3, adenocarcinoma in situ and cancer.

Table Z: Non-diagnostic biopsies taken at colposcopy by outcome (4 month sample)

England, 2015-16 and 2016-17 — Numbers and *Percentages*

Outcome	2015-16	2016-17
Number of biopsies reported	17,429	15,115
Biopsies with unknown result	69	30
Biopsies with known result (=100%)	**17,360**	**15,085**
	%	%
Cancer	*1.7*	*2.0*
Adenocarcinoma in situ	*2.9*	*2.9*
CIN3	*44.8*	*44.4*
CIN2	*25.7*	*24.8*
CIN1	*11.9*	*11.5*
HPV / Cervicitis only	*4.6*	*5.6*
No CIN / No HPV	*8.2*	*8.5*
Inadequate / unsatisfactory biopsy	*0.2*	*0.3*
Total showing CIN or worse	***87.0***	***85.5***

NB: The sum of components may not equal totals due to rounding.
Source: KC65, NHS Digital. See Table 25 in the Data Tables.

4.5 Clinic data

Colposcopy data for individual clinics is shown in Tables 26a and 26b of the Data Tables. These may be used to identify different treatment patterns across the country and show wide variation between clinics. Some of this variation may arise from the fact that many clinics deal with only a small number of cases and this should be considered when interpreting the clinic-level results.

Glossary

Term	Definition
?Glandular neoplasia of endocervical type	?Glandular neoplasia means 'suspected glandular neoplasia'. Samples are reported as '?glandular neoplasia of endocervical type' if they show cytological features suggestive of cervical glandular intra-epithelial neoplasia (CGIN) or endocervical adenocarcinoma[21]. In the tables and commentary ?glandular neoplasia of endocervical type appears as ?glandular neoplasia (endocervical) for ease of reporting
?Glandular neoplasia (non-cervical)	?Glandular Neoplasia means 'suspected glandular neoplasia'. Samples are reported as ?glandular neoplasia (non-cervical) where no cervical cell abnormalities are found but the sample contained features suggesting a diagnosis of endometrial, ovarian, or metastatic lesions from beyond the genital tract.
?Invasive squamous carcinoma	?Invasive squamous carcinoma means 'suspected invasive squamous carcinoma'. Invasive carcinoma is commonly called cancer. In the tables and commentary ?Invasive squamous carcinoma appears as ?Invasive carcinoma for ease of reporting.
Ablation	A treatment that destroys tissue rather than removes it.
Adenocarcinoma in situ	A localised growth of abnormal glandular tissue that may become malignant[22].
Biopsy	A biopsy is a medical procedure that involves taking a small sample of tissue so that it can be examined under a microscope. The term 'biopsy' is often used to refer to the act of taking the sample and the tissue sample itself[23].
Carcinoma in	This is an early form of carcinoma. There are

[21] Source: Achievable standards, Benchmarks for reporting, and Criteria for evaluating cervical Cytopathology, NHSCSP Publication No 1, 3rd Edition, Jan 2013 - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/436753/nhscsp01.pdf

[22] http://medical-dictionary.thefreedictionary.com

[23] NHS Choices: http://www.nhs.uk/conditions/biopsy/pages/introduction.aspx

situ (CIS)	cancerous cells in the cervix but they have not started to grow beyond the small area where they started[24]. CIN3 is sometimes called 'carcinoma in situ'.
Cervical glandular intraepithelial neoplasia (CGIN)	CGIN is an abnormality of the glandular tissue in the endocervix (the inside of the cervix or cervical canal).
CIN	Cervical Intra-epithelial Neoplasia. See Appendix E on Outcomes of Gynaecological Referral for more information.
Clinical Indication	Where a referral to colposcopy is 'clinically indicated' it means that a woman has been referred because she had symptoms of a cervical abnormality and not because of a screening test.
Colposcope	A colposcope is a specially designed and lighted microscope. It allows a doctor or specialist nurse to look more closely at the cells lining the cervix.
Colposcopy	Colposcopy is a detailed examination of the cervix (the neck of the womb).[25]
Cytology	The medical and scientific study of cells. Cervical cytology refers to a branch of pathology, the medical specialty that deals with making diagnoses of cervical dysplasia through the examination of cell samples.
Diagnostic biopsy	A biopsy taken to make a diagnosis.
Dyskaryosis	Dyskaryosis is the name given to small changes that are found in the cells of the cervix (the neck of the womb). It is the nuclear change which is seen in cells derived from lesions histologically described as CIN[26].
Dysplasia	Dysplasia is an abnormality of development. Cervical dysplasia refers to abnormal changes in

[24] NHS Choices: http://www.nhs.uk/Conditions/Cancer-of-the-cervix/Pages/Diagnosis.aspx
[25] NHS Choices: http://www.nhs.uk/conditions/colposcopy/Pages/Introduction.aspx
[26] Source: Achievable standards, Benchmarks for reporting, and Criteria for evaluating cervical Cytopathology, NHSCSP Publication No 3, January 2013 - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/436753/nhscsp01.pdf

	cells from the surface of the cervix which, if left untreated, could lead to cervical cancer.
Endocervical cells	Cells located in the inside of the cervix (cervical canal).
Excision biopsy	An excisional biopsy is where surgery is used to remove a larger area of tissue, such as a lump, for closer examination. Excision means 'cutting out', or 'removal'[27].
Histology	The study of the form of structures seen under the microscope[28].
HPV	Human Papillomavirus (HPV) is the name of a family of viruses that affect the skin and the moist membranes that line the body, such as those in the cervix, anus, mouth and throat. Infection of the cervix with some types of HPV can cause abnormal tissue growth and other changes to cells, which can lead to cervical cancer.
Liquid Based Cytology (LBC)	Liquid based cytology (LBC) is a way of preparing cervical samples for examination in the laboratory[29].
KC 53 Return	Information collected from the call and recall system, and reported by Upper Tier Local Authorities.
KC 61 Return	Information on screening samples examined by pathology laboratories, collected from laboratories carrying out cervical cytology.
KC 65 Return	Information on referrals to colposcopy, subsequent treatment and outcome, collected from clinics/trusts providing colposcopy services.
Non-diagnostic biopsy	A biopsy performed to treat or a diagnostic biopsy that did not provide enough information for a diagnosis' is better.
Public Health Outcomes Framework (PHOF)	A government led initiative which sets out a vision for public health, desired outcomes and indicators that will help understand how well public health is being improved and protected.
Reporting region	The NHS Cervical Screening Programme has

[27] NHS Choices: http://www.nhs.uk/conditions/biopsy/pages/introduction.aspx
[28] MedicineNet.Com, https://www.medicinenet.com/script/main/art.asp?articlekey=7318
[29] http://www.cancerscreening.nhs.uk/cervical/lbc.html

	eight reporting regions. These are similar to the SHAs which operated prior to April 2013 with a few exceptions. The old North East and Yorkshire & the Humber SHAs together form one reporting region (North East, Yorkshire & the Humber). The old South East Coast and South Central SHAs make up the South East reporting region.
Screened	A woman has been screened if she has had an adequate cervical screening test result. A woman who has had only an inadequate test has not been screened.
Squamous cells	Squamous cells cover the surface of the ectocervix (the outer surface of the cervix).
Tested	A woman has been tested if she has had a cervical screening test, regardless of the result.
VSA15	The National Cancer Screening Statistics VSA15 Report containing data relating to the time from screening to receipt of results, measured by the expected delivery date of result letter

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