Cervical Screening Programme

England, 2017-18

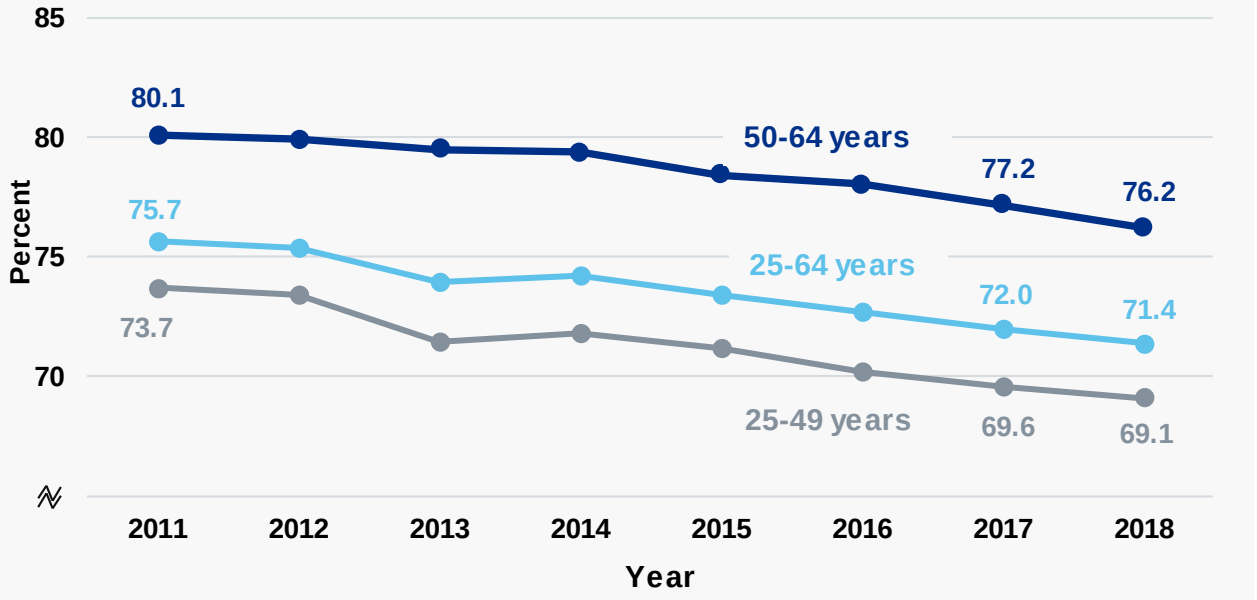
Published 27 November 2018

This publication presents information about the NHS Cervical Screening Programme in England in 2017-18 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 2018, the percentage of eligible women (aged 25 to 64) who were recorded as screened adequately within the specified period was 71.4%. This compares with 72.0% at 31 March 2017 and is the 4th consecutive year that coverage has declined.
- A total of 4.46 million women aged 25 to 64 were recorded as invited* for screening in 2017-18, representing an increase of 0.3% from 2016-17, when 4.45 million women were invited.
- In total, 3.18 million women aged 25 to 64 years were tested in 2017-18, the same as 2016-17, when 3.18 million women were also tested.

Figure 1: Cervical Screening age-appropriate coverage by age group
England at 31 March, 2011 - 2018



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

*An incident has been identified in relation to invitation letters sent. Details here https://www.nhs.uk/conditions/cervical-screening/information-update/ and page 6 of the Quality Statement. An investigation is underway which should clarify the impact on the invitation statistics and a short update will be provided on the publication landing page once this has been clarified.

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This is a National Statistics publication

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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 2017-18 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.

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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 form a separate document for this publication and 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
- Appendix J - Impacts of HPV Primary Screening implementation

The Appendices document can be found on the publication page, here: http://digital.nhs.uk/pubs/cervical1718

1.1.4 Data tables are made available to accompany this report, containing more in depth statistics on the cervical programme.

The data tables file can be found on the publication page, here: http://digital.nhs.uk/pubs/cervical1718

An interactive data dashboard is available as part of this publication

1.1.5 The interactive data dashboard allows 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 Clinical Commissioning Group (CCG). The dashboard is available here:

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

1.2 Changes to the Report

The report focuses on age appropriate coverage as this is the programme standard[1]. The previously used coverage definition, adequate screen within last 5 years, no longer features prominently in the report. 5-year coverage data can be found in the data tables and the earlier issues of this annual report.

1.3 User Feedback

NHS Digital welcomes feedback on all publications. If you wish to comment on this report, feedback can be submitted via this e-mail address:
enquiries@nhsdigital.nhs.uk

We would be particularly interested to know how you use the statistics in this report.
Feedback 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://www.gov.uk/government/collections/nhs-population-screening-programme-standards#cervical-screening

Analysis and Commentary

Call and Recall Programme

The cervical screening call and recall programme invites eligible women (aged 25-64 years) for cervical screening at regular intervals.

- 'Call' refers to invites for previously unscreened women.
- 'Recall' refers to subsequent invitations.

The recommended interval between screens varies with age[2]:

- Women aged 25-49 are routinely recalled every three years.
- Women aged 50-64 are routinely recalled every five years.

Women aged over 65 years are only invited if they have a recent abnormal test result.

A more detailed overview of the programme can be found at the following link: https://www.nhs.uk/conditions/cervical-screening/

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[3] 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 2018. 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 on 31st March 2018.

For the total target age group (25 to 64 years) coverage is referred to as '*Age-appropriate coverage'.* This represents the most up to date definition and reflects the frequency with which women of different ages are invited for screening. It is defined 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 2018. This is the definition used for the headline coverage figures. Data based on this definition has been available since 31 March 2011.

[2] https://www.nice.org.uk/standards-and-indicators/index/QOF/Cancer

[3] 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.

The cervical screening programme standards define acceptable performance as the achievement of coverage levels of 80% or greater[4]. This applies to the individual age groups (25-49 and 50-64 years) and the combined age-group (25-64 years).

2.1.2 Age appropriate coverage

Age-appropriate coverage fell to 71.4% among women aged 25-64

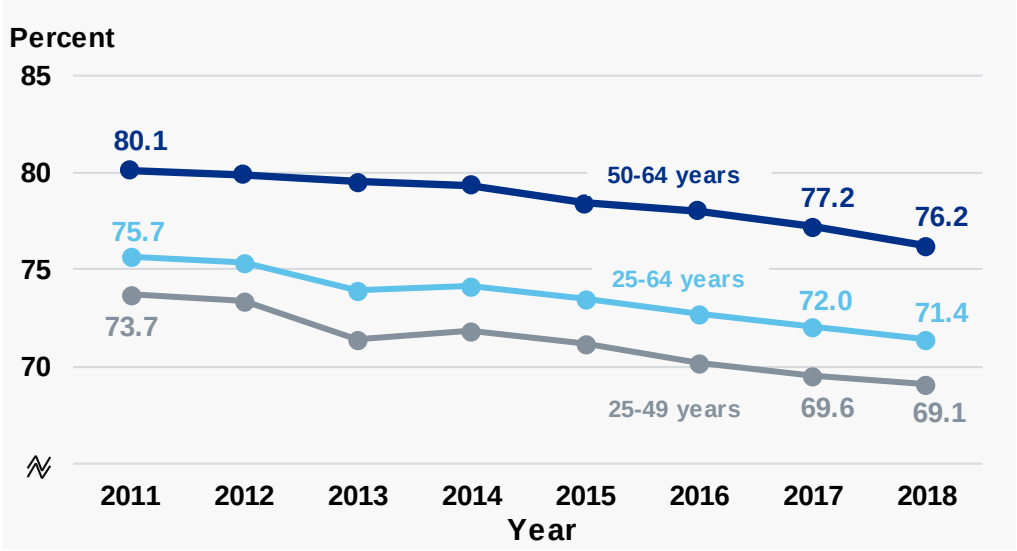
At 31 March 2018, the percentage of eligible women (aged 25 to 64) who were recorded as screened adequately within the specified period was 71.4%. This compares with 72.0% at 31 March 2017 and is the fourth consecutive year that coverage has declined.

Coverage amongst women aged 25 to 49 years (measured at three and a half years) was 69.1% at 31 March 2018. This compares to 69.6% as at 31 March 2017.

For women aged 50 to 64 years, the coverage (measured at five and a half years) at 31 March 2018 was 76.2% which compares to 77.2% as at 31 March 2017. Coverage in this age-group has declined in each of the past seven years, falling from a peak of 80.1% at 31 March 2011 (see Figure 2).

Figure 2: Cervical screening – age-appropriate coverage by age group

England at 31 March, 2011 to 2018



Age-appropriate coverage at 31 March 2013 excludes some women from a small number of LAs.

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

Coverage in the older age group (50-64 years) is consistently higher than the younger age group (25-49 years).

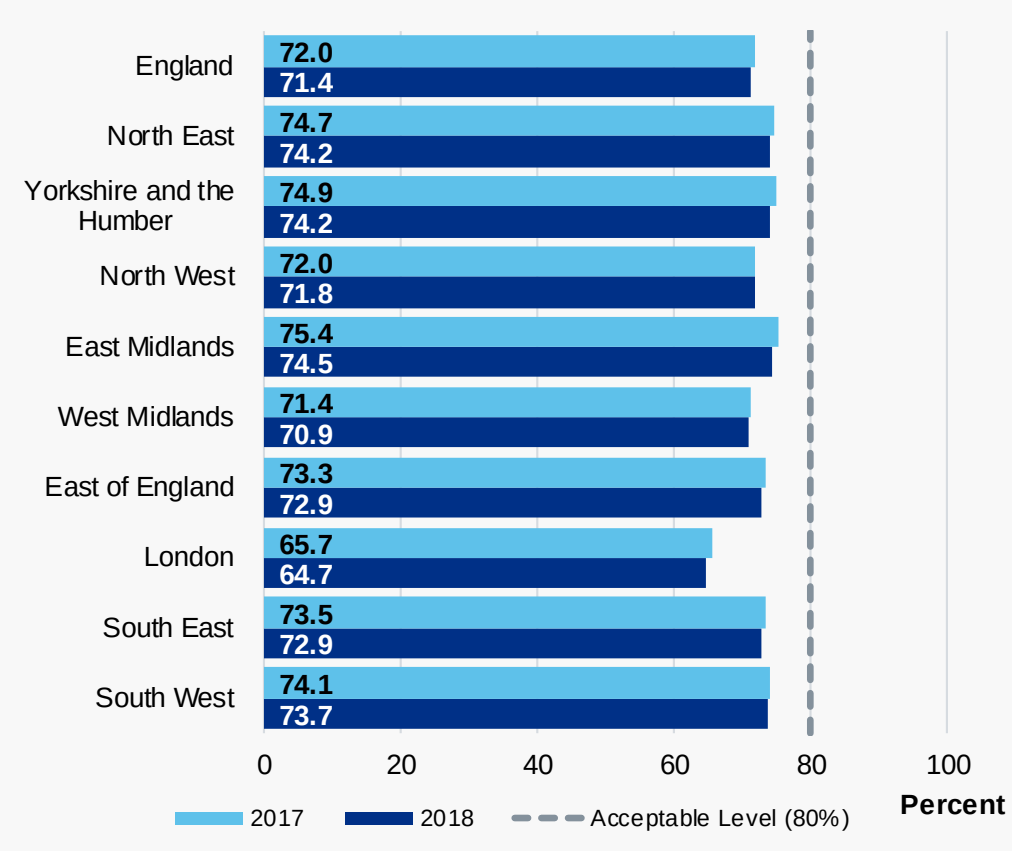
Over the past 2 years, coverage has declined by 1.8% in the older age group (since 31 March 2016) and by 1.1% in the younger age group.

[4] https://www.gov.uk/government/publications/cervical-screening-programme-standards/cervical-screening-programme-standards-valid-for-data-collected-from-1-april-2018

2.1.3 Age-appropriate coverage of the full target age group (25 to 64 years) at a regional level at 31 March 2018 ranged from 64.7% in London to 74.5% in the East Midlands. All reporting regions reported a fall in coverage at 31 March 2018 when compared with 2017 (see Figure 3).

Regionally, age-appropriate coverage was highest in the East Midlands at 74.5%

Figure 3: Age appropriate coverage for women aged 25-64 years
England by region, at 31 March, 2017 and 2018

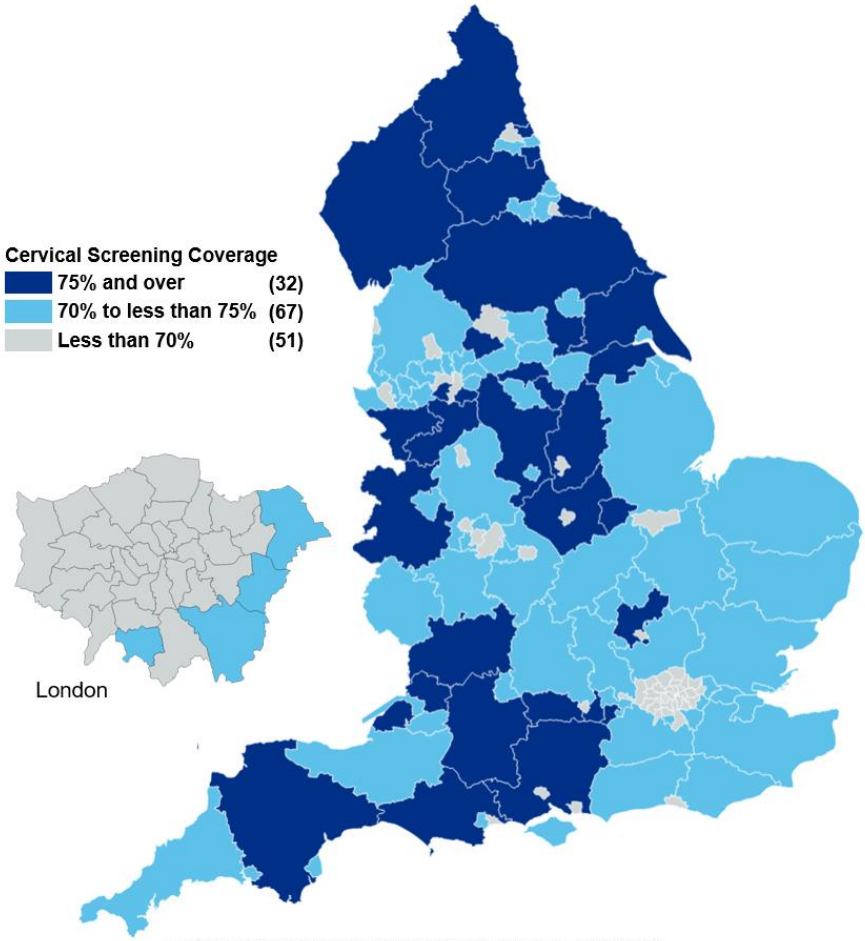


Source: PHOF, Open Exeter (age appropriate coverage), NHS Digital. See Table 13 in the Data Tables.

2.1.4 Age appropriate coverage – Local Authority level

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

Upper Tier Local Authority, England, 31 March 2018



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, 99 Local Authorities (out of 150) had coverage levels of 70% and above (see Figure 4). No LAs achieved 80% coverage in 2017-18.

For detailed figures on coverage at LA level see Table 13 in the Data Tables. LA data is also included in this publication the interactive report, available here:

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

Please also note that age appropriate coverage figures for LAs are available from Public Health England via the following link:

https://fingertips.phe.org.uk/profile/public-health-outcomes-framework

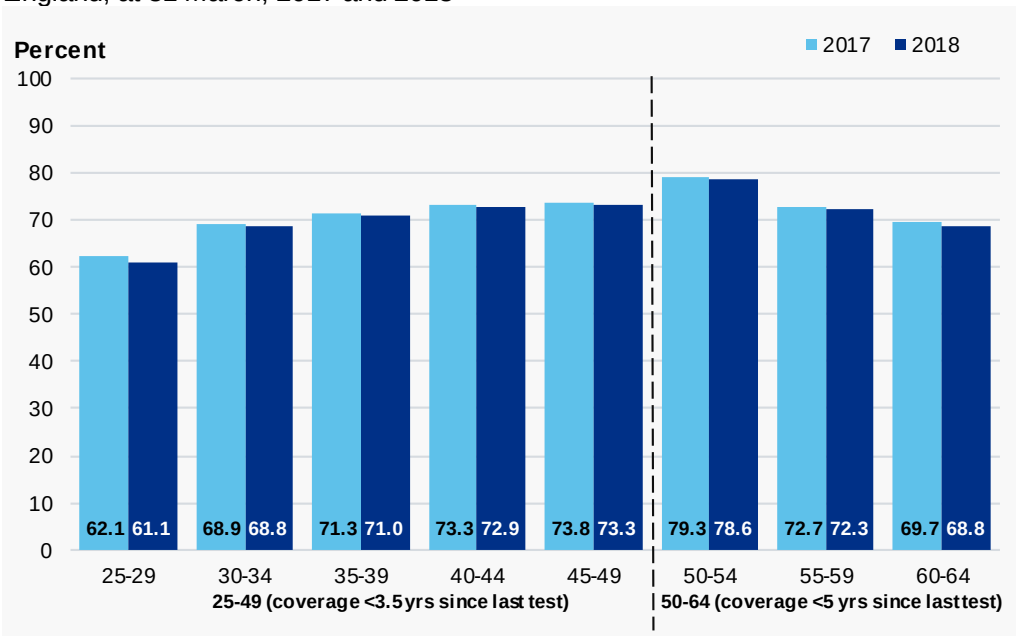
99 out of 150 Local Authorities had coverage levels of 70% and over

Please note: Figure 5, below, presents data from the KC53 dataset, which records more detailed age breakdowns for coverage. Data in Figure 5 uses the previous coverage definition, an adequate test within the past 5 years, to describe the 50-64 age group.

2.1.5 Figure 5 illustrates a more detailed age breakdown. In the 25-49 age range, coverage is lowest in the youngest age group (25-29) and highest in the oldest age group (45-49). Coverage amongst women aged 50 to 54 (which is measured as adequately screened within the last 5 years) was highest at 78.6% in 2018, though this decreased slightly from the previous year.

Figure 5: Cervical screening – Coverage* by age group

England, at 31 March, 2017 and 2018



*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 The test status of the population as at 31 March 2018, together with women with recall ceased for clinical reasons[5], is shown in Table A. Of women aged 25 to 64 years, 71.4% were recorded as having had at least one adequate test within 5 years. A further 8.4% were tested within ten years. 10.9% had been called but had never attended for screening.

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

Table A: Test status of women aged 25-64

England at 31 March 2018 — 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	Never had adequate sample	Never attended	No cytology record
Number (thousands)											
15658.4	703.9	4,702.2	4,162.5	815.5	1,506.5	1,310.8	345.3	359.4	27.3	1,701.2	23.8
Percentage											
100.0	*4.5*	*30.0*	*26.6*	*5.2*	*9.6*	*8.4*	*2.2*	*2.3*	*0.2*	*10.9*	*0.2*

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.

2.1.7 Table B shows coverage for the UK countries. It should be noted that cervical screening programmes in different UK countries cover different age-groups and vary in the frequency of screening and how coverage is calculated. In comparing coverage among UK countries, these differences (detailed below the table) should be considered.

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

United Kingdom by country at 31 March 2018 — Thousands and *Percentages*

Country	Number of eligible women	Number of women screened within specified target period	Coverage (%)
England*	14,933.8	10,665.3	*71.4*
Northern Ireland	494.0	377.6	*76.4*
Scotland	1,403.0	1,021.7	*72.8*
Wales	771.5	587.2	*76.1*

*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

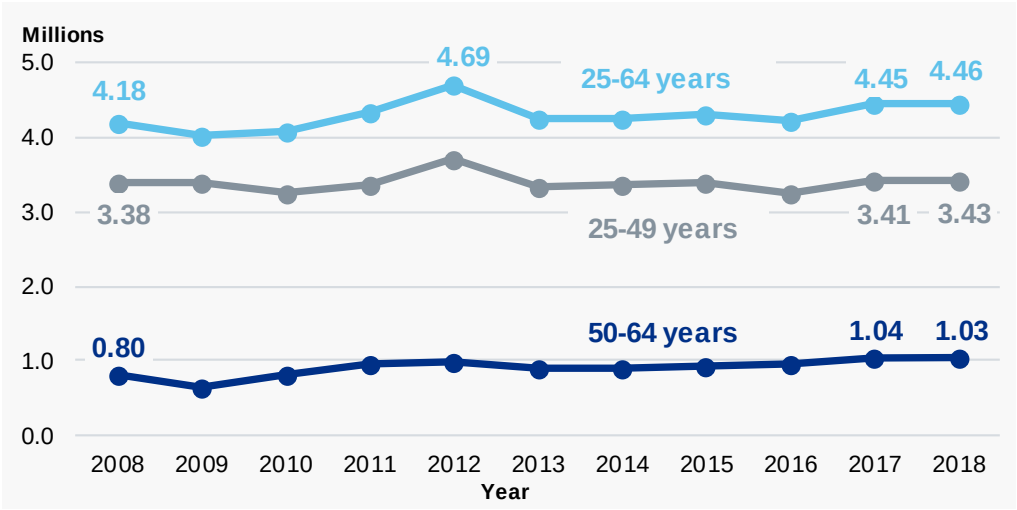
2.2 Invitations for screening

Invitations to screen are sent by the screening programme to women eligible for routine screening. In addition to routine screening, invitations are sent for repeat screens for women who are under surveillance, showing abnormalities, or have had a previous inadequate screen.

2.2.1 The number of women aged 25 to 64 years invited[6] for screening in 2017-18 rose slightly compared with the previous year (see Figure 6 and Table C). In total, 4.46 million women were invited, most of whom were aged 25 to 49 (3.43 million) with women aged 50 to 64 accounting for 1.03 million of those invited.

Figure 6: Number of women invited for screening, by age

England, 2008 to 2018



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

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

England, 2013-14 to 2017-18 — Numbers and *Percentage Change*

Age group	2013-14	2014-15	2015-16	2016-17	2017-18	Change from 2016-17 to 2017-18
Total (all)	4,458,042	4,538,379	4,434,393	4,672,120	4,682,201	*0.2%*
Total (25-64)	**4,244,755**	**4,311,001**	**4,208,888**	**4,445,151**	**4,457,953**	***0.3%***
25-49	3,346,282	3,379,753	3,257,328	3,408,266	3,428,171	*0.6%*
50-64	898,473	931,248	951,560	1,036,885	1,029,782	*-0.7%*

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.

[6] An incident has been identified within the Cervical Screening Programme. Between January and October 2018, approximately 43,220 invitation or reminder letters were not sent, equivalent to less than 1% of women invited in 2017-18. This issue emerged close to the time of the publication of this report and is still under investigation, therefore, we are not yet able to determine whether they were recorded as sent on our systems or not. Further information on the incident is available here: https://www.nhs.uk/conditions/cervical-screening/information-update/

2.2.2 The NHS Cervical Screening Programme categorises screening invitations into types as shown in Table D. Detailed explanations of the different types of invitation are given in Appendix C. Table D shows that although most women aged 25 to 64 years received a call[7] or routine recall, 7.1% 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 D: Number of women (aged 25-64) invited in the year by type of invitation

England, 2016-17 and 2017-18 — Numbers and *Percentages*

				Repeat in less than 3 years for reasons of		
Year	**Total**	Call (%)	Routine Recall (%)	Surveillance (%)	Abnormality (%)	Inadequate sample (%)
2016-17	**4,445,151**	*19.6*	*66.7*	*8.7*	*3.0*	*2.0*
2017-18	**4,457,953**	*19.6*	*68.3*	*7.1*	*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 Number of women tested

Women who attend a cervical screening appointment will have their sample from the testing process passed to pathology laboratories for assessment.

In total, 3.18 million women aged 25 to 64 years were tested in 2017-18, the same as 2016-17 (see Figure 7 and Table E).

Figure 7 shows the number of women tested each year since 2007-08 (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

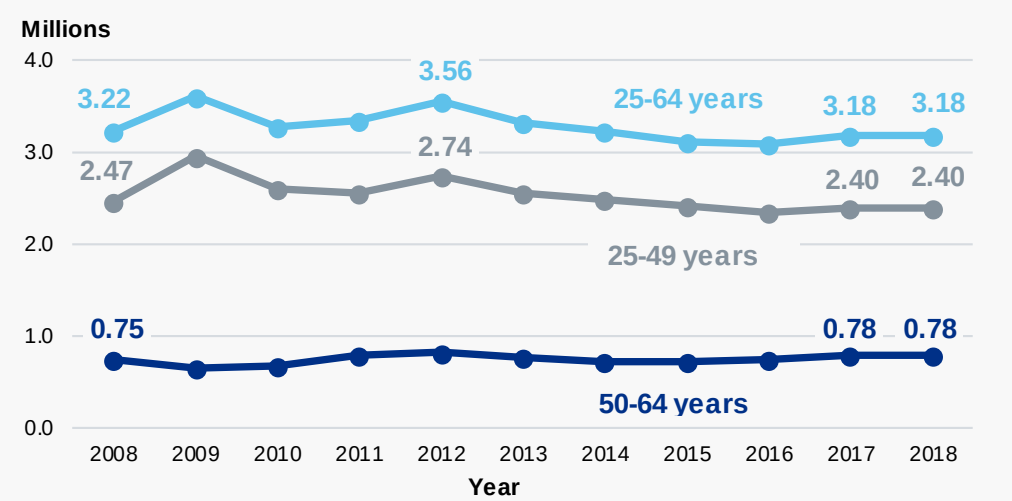
[7] Where the invitation type is 'call', this indicates the invitation is to a woman who has not previously been screened.

partly explain the second smaller peak in women aged 25 to 49 tested in 2011-12.

Amongst women aged 25-49, 2.40 million women were tested in 2017-18, the same as 2016-17. A total of 0.78 million women aged 50-64 were tested in 2017-18 the same as 2016-17.

Figure 7: Number of women tested, by age

England from 2008 to 2018



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

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

England from 2013-14 to 2017-18 Numbers and *Percentage Change*

Age group	2013-14	2014-15	2015-16	2016-17	2017-18	Change from 2016-17 to 2017-18
Total (all)	3,298,399	3,190,653	3,157,728	3,242,736	3,244,369	*0.1%*
Total (25-64)	**3,225,180**	**3,117,742**	**3,086,175**	**3,176,648**	**3,181,762**	***0.2%***
25-49	2,493,714	2,402,642	2,341,549	2,397,246	2,401,798	*0.2%*
50-64	731,466	715,100	744,626	779,402	779,964	*0.1%*

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, 2.64 million (82.9%) were tested following an invitation within the screening programme. The remaining 542,768 women (17.1%) 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[8] (see Table 5 in Data Tables). Some women may be routinely recalled by their GP Practices 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.

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

2.3 Test results

3.30 million tests were conducted in 2017-18

2.3.1 Some women have more than one test during the year for clinical reasons[9] and the 3.24 million women of all ages tested in 2017-18 generated 3.30 million tests[10] (see Table F).

In 2.7% 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 F: Number of tests and result

England, 2017-18 — Numbers and *Percentages*

Result of test	Number of tests	%
Inadequate	88,754	*2.7*
Adequate	3,214,826	*97.3*
Total	**3,303,580**	***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, 11.9% of tests resulted in a repeated inadequate result, a decrease on 2016-17 (13.2%) – see Table G. These repeated inadequate samples accounted for 10.6% (9,370 out of 88,754) of all inadequate results in the year.

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

England, 2016-17 and 2017-18 — Numbers and *Percentages*

	2016-17		**2017-18**	
Result of test	Tests	%	Tests	%
Inadequate	10,129	*13.2*	9,370	*11.9*
Adequate	66,649	*86.8*	69,477	*88.1*
Total	**76,778**	***100.0***	**78,847**	***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 H. 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 2017-18,

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

[10] An incident has been identified within the Cervical Screening Programme. Between January and October 2018, 4,508 test result letters were not sent, this is equivalent to less than 0.2% of all test results in 2017-18. This issue emerged close to the time of the publication of this report and is still under investigation, therefore, we are not yet able to determine whether they were recorded as sent on our systems or not. Further information on the incident is available here: https://www.nhs.uk/conditions/cervical-screening/information-update/

94.4% had a negative result and 5.6% had a result categorised as abnormal (from borderline change through to potential cervical cancer[11]). 1.1% of women tested in 2017-18 had a result showing a 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 H shows the breakdown of the results of adequate tests for the last 2 years.

The classification change for abnormal cervical cytology, introduced in April 2013, will have impacted results of cytology tests for 2013-14 onwards. In particular, 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 H: Results of adequate tests for women aged 25-64

England, 2016-17 and 2017-18 — Numbers and *Percentages*

Result of test*	**2016-17**	**2017-18**
Total results	3,126,888	3,133,646
	%	%
Negative	*94.2*	*94.4*
Borderline changes	*2.4*	*2.3*
Low-grade dyskaryosis	*2.3*	*2.2*
High-grade dyskaryosis (moderate)	*0.5*	*0.5*
High-grade dyskaryosis (severe)	*0.6*	*0.6*
High-grade dyskaryosis/?invasive carcinoma**	*0.0*	*0.0*
?Glandular neoplasia**	*0.0*	*0.0*
Total	***100.0***	***100.0***

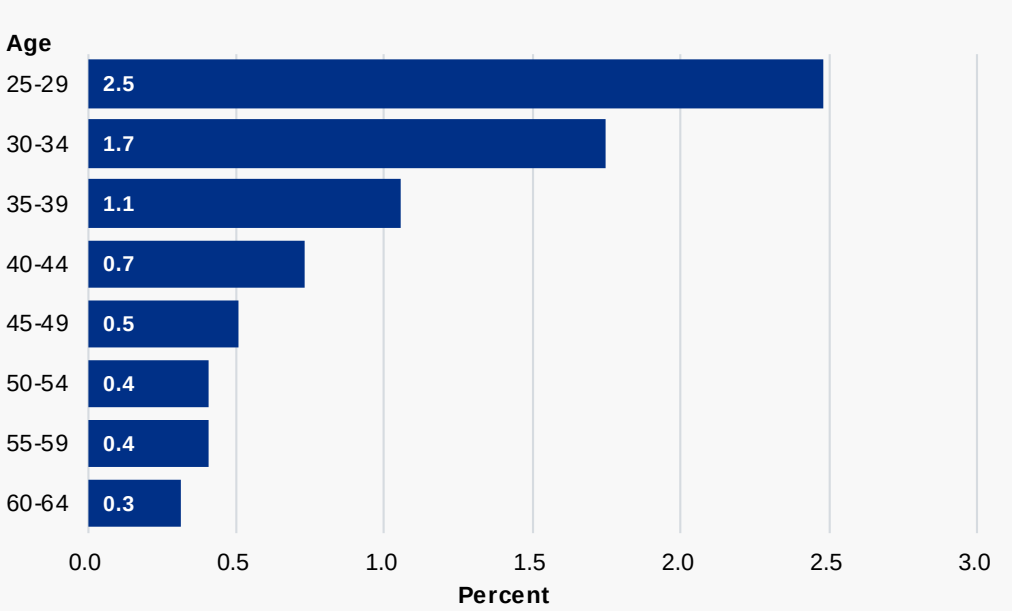
* Most severe result in year
** ?invasive carcinoma means 'suspected invasive carcinoma', ?glandular neoplasia means 'suspected glandular neoplasia of endocervical type'.
NB: The sum of components may not equal totals due to rounding.
Source: KC53, NHS Digital. See Table 8 in the Data Tables.

94.4% of test results of adequate samples are classified as Negative in 2017-18

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

2.3.4 Within the target age range, the percentage of results showing a high-grade abnormality decreased with age, being highest at 2.5% for women aged 25-29, falling to 0.3% for 60-64 (see Figure 8).

Figure 8: Cervical screening - Test results showing a high-grade abnormality as a percentage of all test results, by age group of women
England, 2017-18

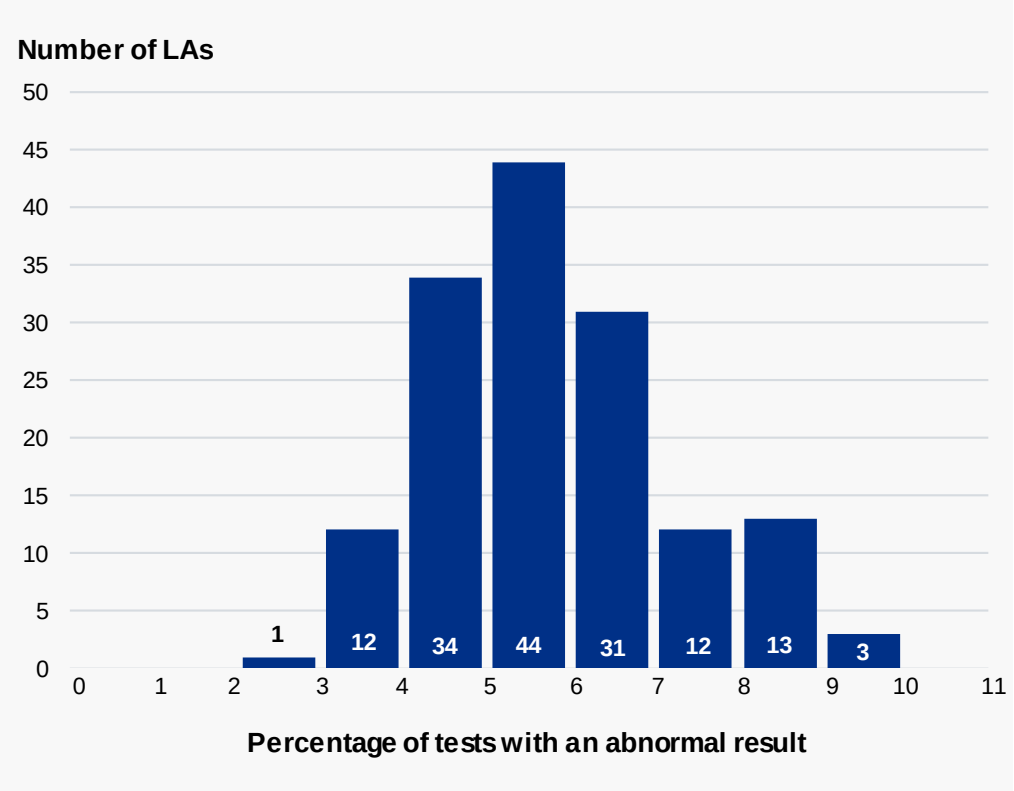


NB. Note that the percentages in Figure 8 are aggregates of four test result groups (high-grade dyskaryosis (moderate), high-grade dyskaryosis (severe), high-grade dyskaryosis (severe)/?invasive carcinoma and ?glandular neoplasia of endocervical type).
Source: KC53, NHS Digital. See Table 8 in the Data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

2.3.5 In 121 of the 150 LAs, between 4% and 8% of women presented with an abnormal result. Only 3 LAs had a percentage above 9%, with the maximum being 9.6% (see Figure 9).

Figure 9: Cervical screening – Percentage of tests for women aged 25-64 with an abnormal result

Upper Tier Local Authority, England, 2017-18



NB: The percentages in Figure 9 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

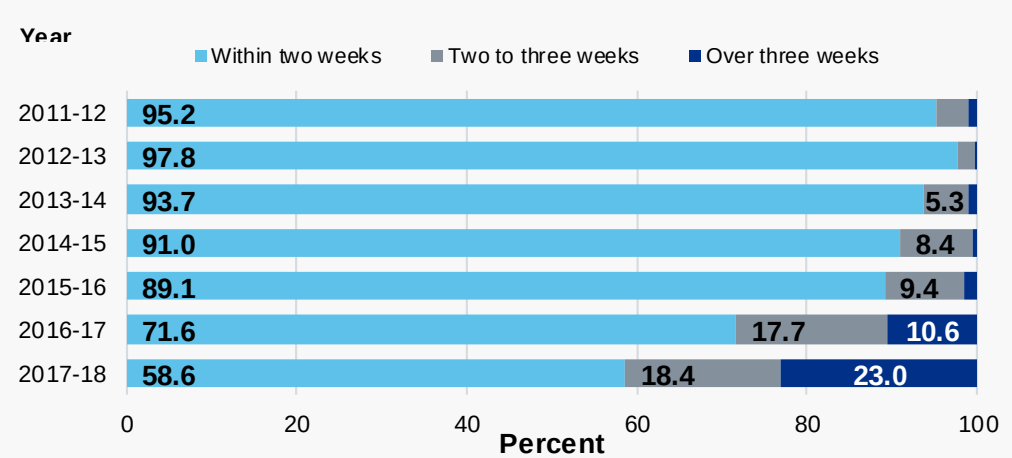
2.4.1 National policy is that all women should receive their cervical screening test result within two weeks of the sample being taken. 'Time from screening to *receipt* of results' is defined as the interval between the date the sample was taken from the woman and the date she received her result letter. It is measured using an expected delivery date based on the date of letter printing and the postage class used by the screening department[12].

2.4.2 In 2017-18, 58.6% 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 71.6% in 2016-17 (see Figure 10) and is below the Key Performance Indicator current acceptable value of 98.0%[13].

The time taken to implement HPV primary screening across England has had an unintended impact on cytology workforce and reduced cytology screening capacity. This led to an increase in the turnaround times of cervical screening samples in 2016-17 and 2017-18. Further information on this issue can be found in Appendix J, in the accompanying appendices document.

Figure 10: Time from screening to receipt of results, as measured by expected delivery date of result letter (eligible women aged 25–64 years)

England, 2011-12 to 2017-18



NB: Figures prior to 2013-14 are derived from the PCO dataset – see Appendix B
Source: National Cancer Screening Statistics VSA15 Report, NHS Digital 'Open Exeter' system (NHS Digital). See Tables 9 and 9a in the Data Tables.

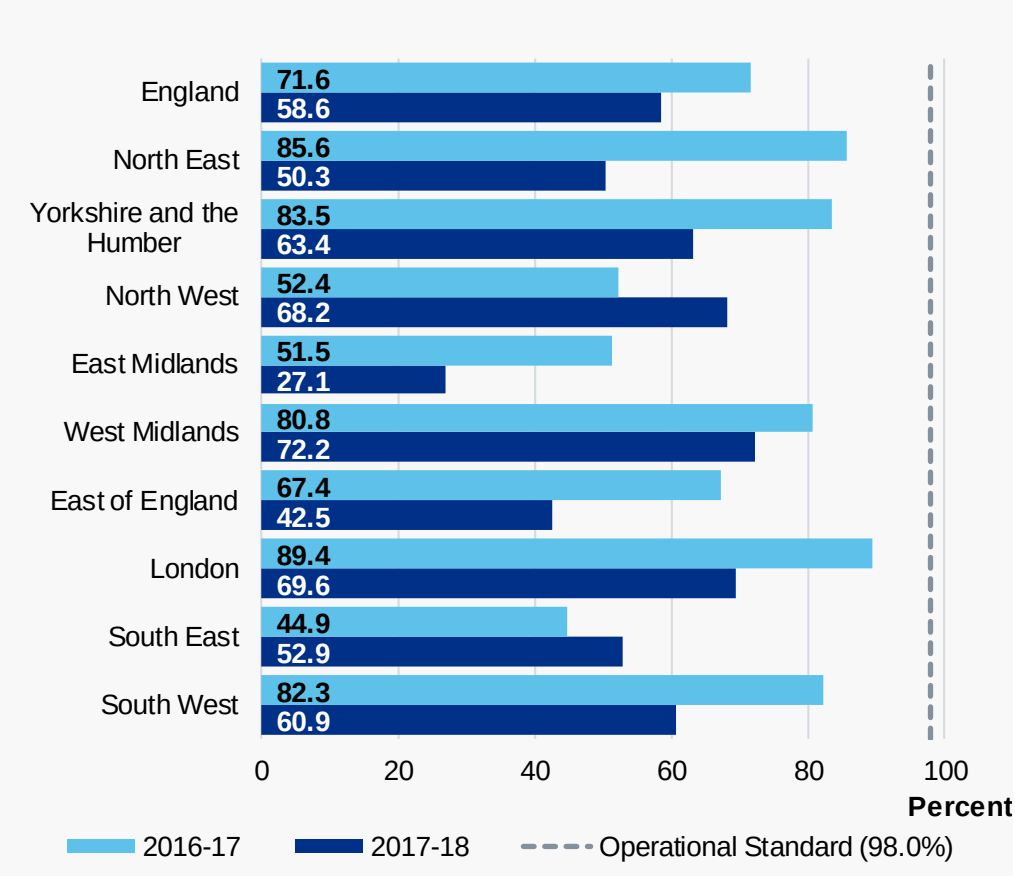
[12] Time from screening to receipt of test results as measured by expected date of delivery is calculated for each 12-month period by summing monthly data for local authorities.
[13] NHS public health functions agreement 2017-18. Service specification no.25 Cervical Screening https://www.england.nhs.uk/wp-content/uploads/2017/04/Gateway-ref-07846-180913-Service-specification-No.-25-NHS-Cervical-screening.pdf

Less than a third (27.1%) of women in the East Midlands received test results within target of 2 weeks

2.4.3 At a regional level, the highest percentage of letters received within 2 weeks of test date was reported in the West Midlands (72.2%), with the lowest in the East Midlands (27.1%). In 2017-18, no region met the Key Performance Indicator current acceptable value of 98.0% (see Figure 11).

Figure 11: 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, 2016-17 and 2017-18



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/cervical1718

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[14], 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).
- **Repeat recall status**, action code R, requires a further test which is usually earlier than routine recall.[15] 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.

[14] For more information on HPV triage, see 'Changes in Screening Policy' under section 1.7 of the separate Data Quality Statement.
[15] The next test can be up to 36 months if a fixed 3 year repeat is required after treatment.

2.5.2 In 2017-18, almost all women with an inadequate test result (97.4%) had a repeat recall status (See Table I).

Amongst women who had nothing other than a negative test result in the year, 94.7% had a normal recall status. Of the remaining women with negative results, 4.3% 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[16].

Table I: Recall status by most severe screening result

England, 2017-18 — Percentages

Screening result	Recall Status		
	Normal (A)	Repeat (R)	Suspend (S)
	%	%	%
Inadequate	-	*97.4*	*2.6*
Negative	*94.7*	*4.3*	*1.1*
Borderline changes	*48.9*	*2.9*	*48.2*
Low-grade dyskaryosis	*23.0*	*1.4*	*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 12a and 12b 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 2017-18, comparatively few (2.9%) were given repeat recall status – see Figure 12a.

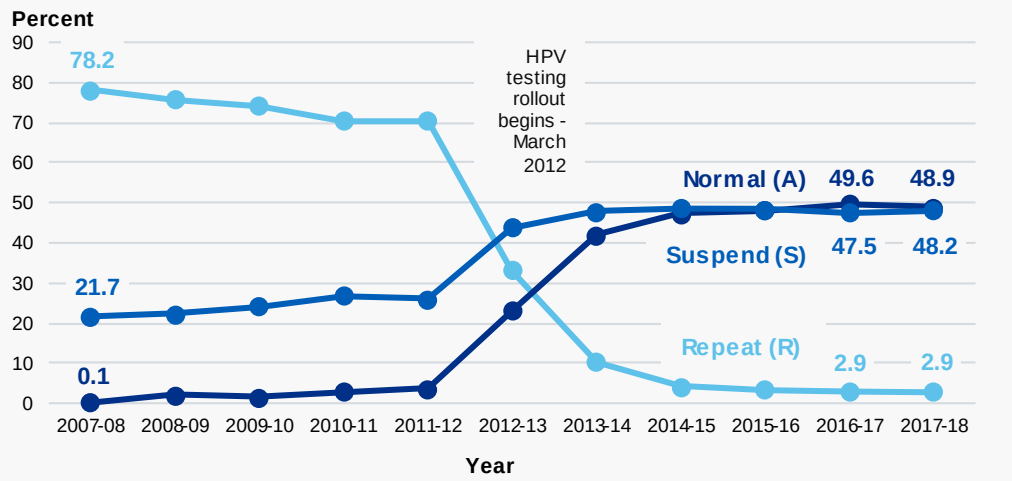
The change following the introduction of HPV testing is less pronounced for women with low-grade dyskaryosis screening results but the increase in the proportion of women with a normal recall status

[16] 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.

and the fall in the proportion with a repeat recall status is still evident – see Figure 12b.

Figure 12a: Recall status for women with borderline screening results

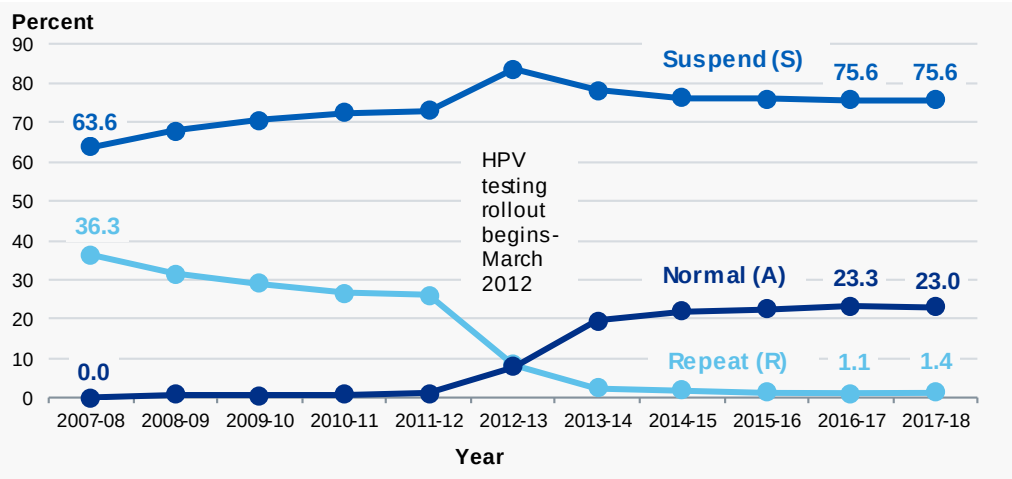
England, 2007-08 to 2017-18



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 12b: Recall status for women with low-grade screening results

England, 2007-08 to 2017-18



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[17] (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).

[17] 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

Cervical cytology describes the process of screening a sample of cervical cells for abnormalities. Once a sample is collected, it is sent for testing at a designated pathology laboratory where it is screened for cell abnormalities and/or the presence of HPV.

There have been changes in cervical screening policy regarding how samples are processed following the introduction of HPV primary screening. For further details see section 1.7 of the Quality Statement.

3.1 Samples examined

3.1.1 There were 3.32 million samples examined by pathology laboratories in 2017-18, the same as in 2016-17. Of the samples examined in 2017-18, 3.17 million (95.6%) 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 (3.8%) of the samples were from NHS hospitals including colposcopy clinics (see Table J).

95.6% of samples to laboratories were submitted by GPs or NHS Community Clinics

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

England, 2016-17 and 2017-18 — Numbers and *Percentages*

Year	**Total samples**	GP (%)	NHSCC (%)	GUM (%)	NHS Hospital (%)	Private (%)	Other (%)
2016-17	**3,322,663**	*93.9*	*1.2*	*0.5*	*4.1*	*0.1*	*0.3*
2017-18	**3,320,229**	*94.8*	*0.8*	*0.3*	*3.8*	*0.1*	*0.3*

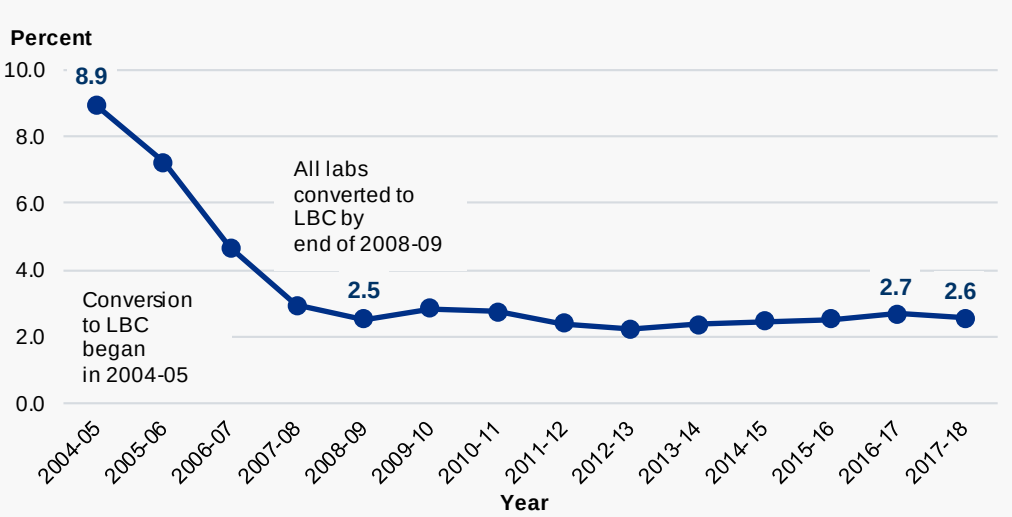
Source: KC61, NHS Digital. See Table 14 in the Data Tables.

3.1.2 In 2017-18, 2.6% of samples from GP and NHS Community Clinics were inadequate in women aged 25-64, broadly similar to the previous year (2.7%) and slightly below the 2.9% reported ten years ago in 2007-08 (see Figure 13). The proportion of inadequate samples has fallen since the introduction of Liquid Based Cytology (LBC).

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, or referred to colposcopy following a third consecutive inadequate result.

Figure 13: Cervical cytology - Percentages of samples from GP & NHS Community Clinics found to be inadequate, from women aged 25-64

England, 2004-05 to 2017-18

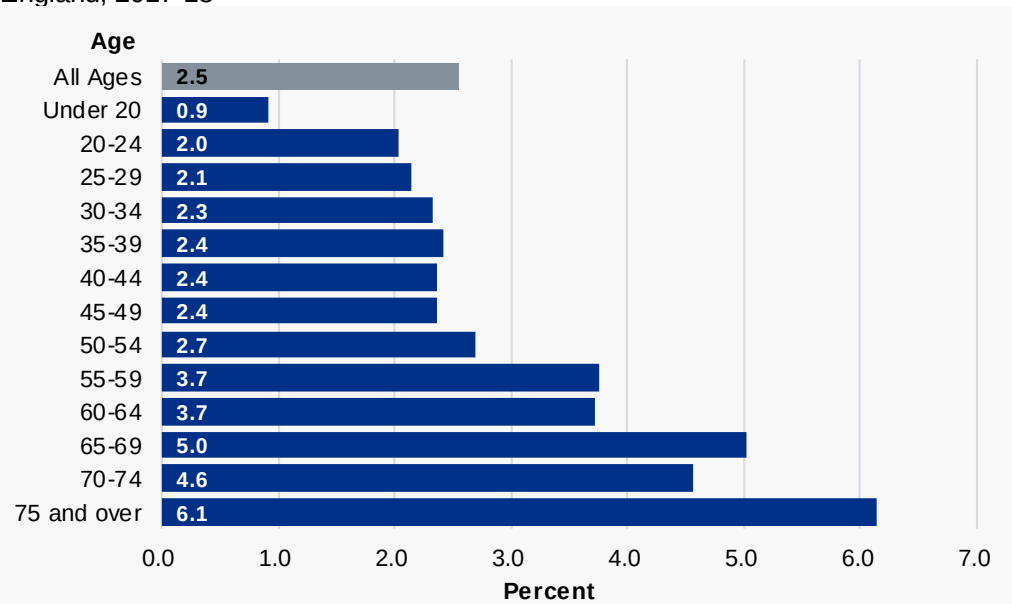


Source: KC61, NHS Digital. See Tables 1 and 15 in the Data Tables.

3.1.3 Analysis by age group has shown that the proportion of samples found to be inadequate was generally lower for women in the younger age bands, below 55 years (see Figure 14).

Figure 14: GP and NHS Community Clinic samples examined by pathology laboratories – Percent inadequate by age group of women

England, 2017-18

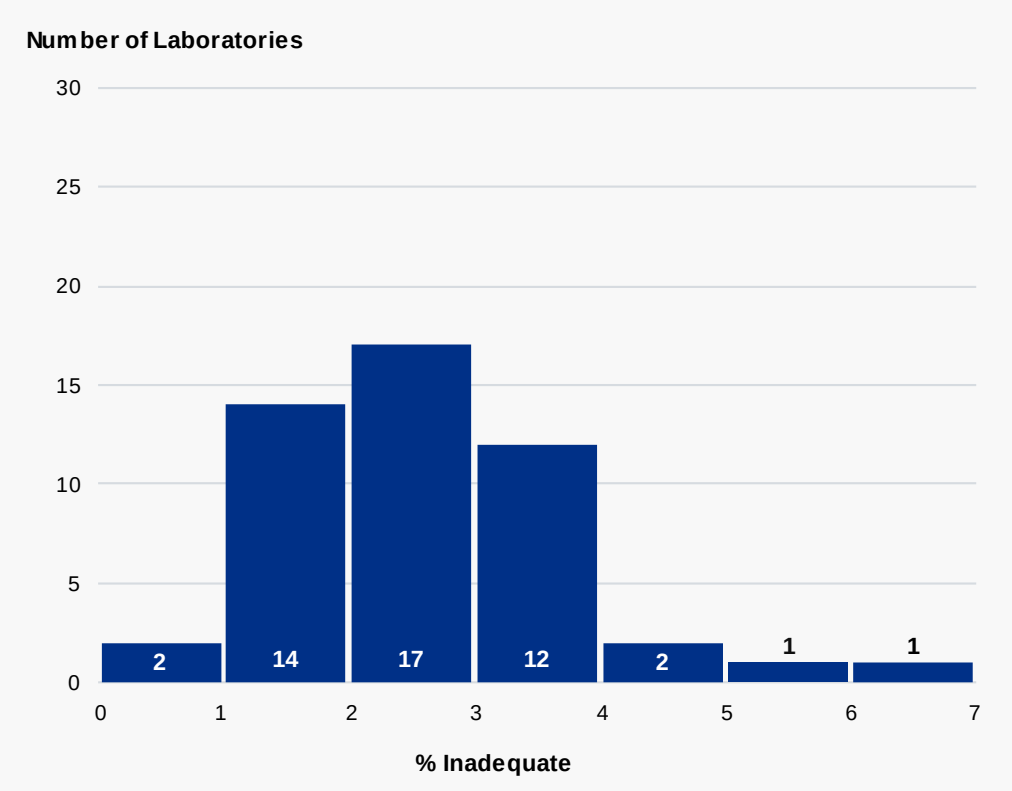


Source: KC61, NHS Digital. See Table 15 in the Data Tables.

3.1.4 In 2017-18, 4 laboratories had inadequate rates over 4%, with most (43 of 49) recording rates over 1% but less than 4% – see Figure 15.

Figure 15: Cervical cytology - Percentage of samples from GP & NHS Community Clinics found to be inadequate, for women aged 25-64, by laboratory

England, 2017-18



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

3.2 Results

3.2.1 The percentage of adequate GP and NHS Community Clinic samples tested in 2017-18 for women aged 25 to 64 reported as being negative was 94.9%. Borderline change was found in 2.1% of adequate tests and low-grade dyskaryosis in 2.0%. Table K gives a full breakdown of test results from adequate samples from women aged 25-64 years.

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

England, 2017-18 — Numbers and *Percentages*

Test result	Number	%
Negative	2,829,889	*94.9*
Borderline changes	63,633	*2.1*
Low-grade dyskaryosis	58,164	*2.0*
High-grade dyskaryosis (moderate)	12,199	*0.4*
High-grade dyskaryosis (severe)	16,055	*0.5*
High-grade dyskaryosis/?invasive carcinoma*	607	*0.0*
?Glandular neoplasia (endocervical)**	1,072	*0.0*
Total Adequate	**2,981,619**	***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 inadequate.

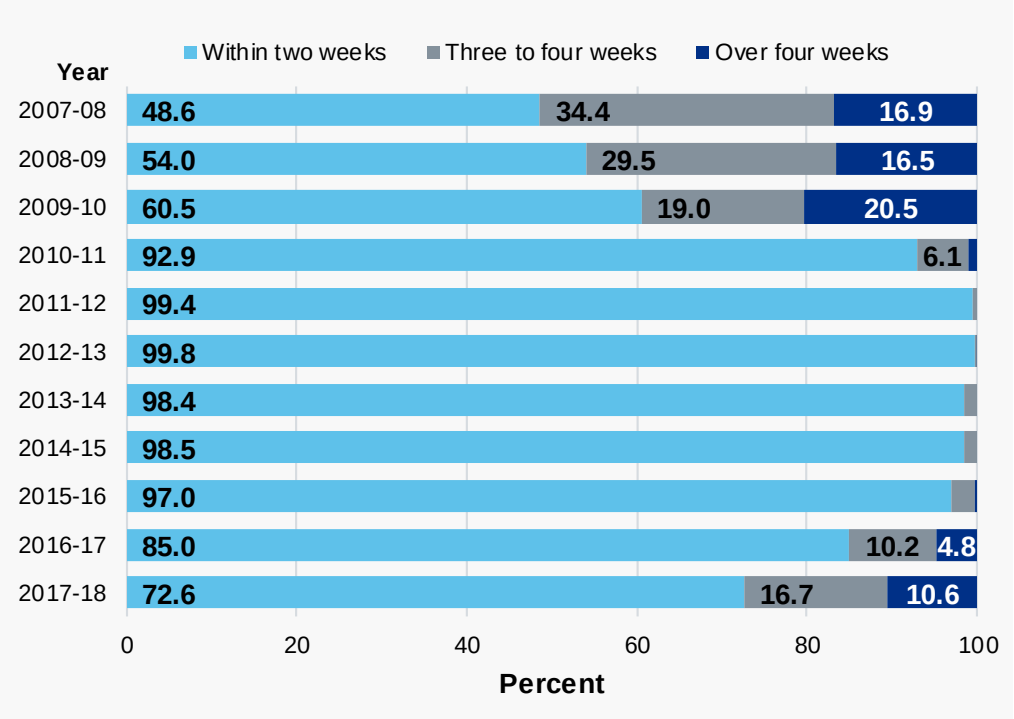
Of adequate samples submitted by GPs and NHS Community Clinics, 94.9% of test results were returned Negative

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 Figure 16 shows the percentage of laboratory tests authorised (i.e. test results confirmed) within two weeks of receipt at the laboratory fell from 85.0% in 2016-17 to 72.6% in 2017-18.

Time from test to authorisation of result has been impacted by the same issue described in section 2.4.2 of this report, relating to implementation of HPV primary screening. Further details about this issue can be found in Appendix J, in the Appendices document.

Figure 16: Samples examined by pathology laboratories – Time from receipt of sample to authorisation of report by laboratory



Source: KC61, NHS Digital. See Tables 16 and 16a in the Data Tables.

Figure 16 also shows the increase in results authorised within 2 weeks in 2010-11, which was influenced by the Cancer Reform Strategy statement in 2007 that all women should receive the result of their screening test within two weeks by 2010[18].

[18] https://www.nhs.uk/NHSEngland/NSF/Documents/Cancer_Reform_Strategy.pdf

3.3 Outcome of gynaecological referrals

3.3.1 Information about outcomes of gynaecological referrals following tests registered during April – June 2017 was provided by all operating laboratories in 2017-18.

Table L 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 2017-18 and 2016-17 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 L and Figure 17).

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[19].

Adenocarcinoma in situ is a localised growth of abnormal glandular tissue that may become malignant[20].

In the first quarter of 2017-18, for referrals following a potentially significant abnormality, 58.8% were found to have the most severe conditions of cervical cancer, cervical intra-epithelial neoplasia (CIN 3) or adenocarcinoma in situ. This compares to 5.1% for referrals following non-negative samples.

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

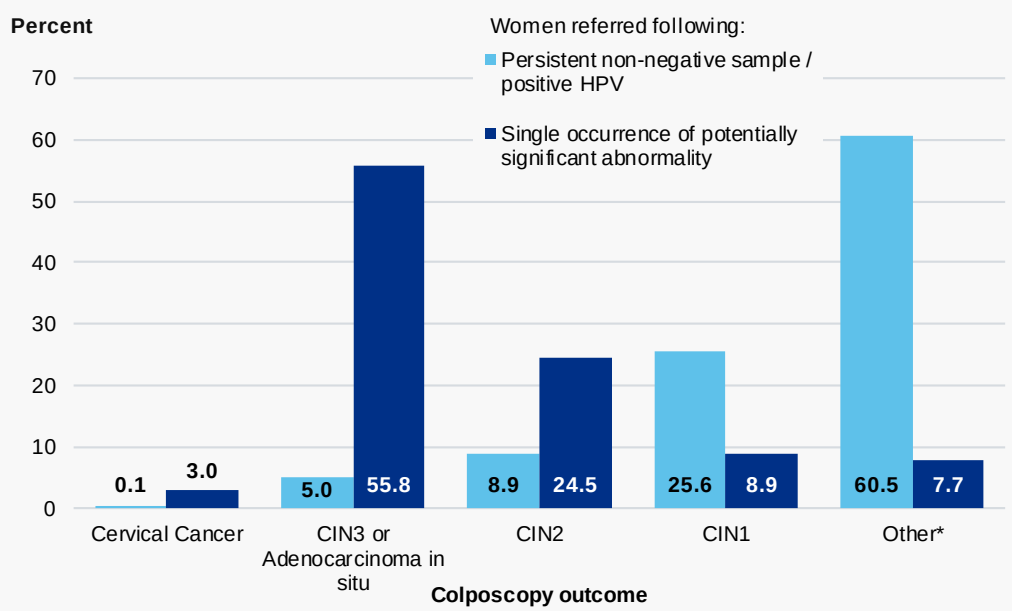
Table L: Outcome of colposcopy referrals for samples registered at the laboratory

England, April to June 2016 and April to June 2017 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 2016	**Apr to Jun 2017**	**Apr to Jun 2016**	**Apr to Jun 2017**
Total outcomes with known result		20,556	19,441	8,892	8,398
		%	%	%	%
Cervical Cancer		*0.1*	*0.1*	*3.2*	*3.0*
CIN3 & Adenocarcinoma in Situ		*5.2*	*5.0*	*56.5*	*55.8*
CIN2		*9.3*	*8.9*	*24.2*	*24.5*
CIN1		*26.6*	*25.6*	*8.1*	*8.9*
Non Cervical Cancer		*0.0*	-	*0.1*	*0.1*
	HPV Only	*14.9*	*15.1*	*2.9*	*2.7*
	No CIN/No HPV	*8.9*	*8.7*	*3.0*	*2.8*
Other	Seen in Colposcopy – result n/k	*0.3*	*0.3*	*0.1*	*0.2*
	Inadequate Biopsy	*1.8*	*1.7*	*0.3*	*0.4*
	Colposcopy – No Abnormality Detected	*33.0*	*34.6*	*1.5*	*1.6*

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

Figure 17: Outcome of referral to colposcopy, by reason for referral (cytology result)
England, April 2017 to June 2017



NB: The sum of components may not equal totals due to rounding.
* See Table L 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[21]. 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[22] of the distributions of key indicators. The ranges for 2017-18 are set out in Table M. 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.

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

[22] 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 M: Achievable standards for laboratory reporting

England, 2016-17 and 2017-18 — Numbers and *Percentages/Rates*

Indicator	5th - 95th percentile range	
	2016-17	**2017-18**
Positive Predictive Value (PPV) for CIN2 or worse*	*76.7 - 92.3%*	*76.2 - 92.3%*
Referral Value (RV) for CIN2 or worse*	*2.0 - 5.0*	*2.1 - 4.4*
Abnormal Predictive Value (APV) for CIN2 or worse*	*6.8 - 26.7%*	*7.3 - 26.8%*
Number of laboratories whose results were used to calculate PPV/RV/APV	53	50
Inadequate as a % of all samples**	*1.0 - 4.3%*	*1.0 - 4.8%*
Number of laboratories whose results were used to calculate % inadequate	51	49

* 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 2017-18 is based on data from 2016-17. 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.

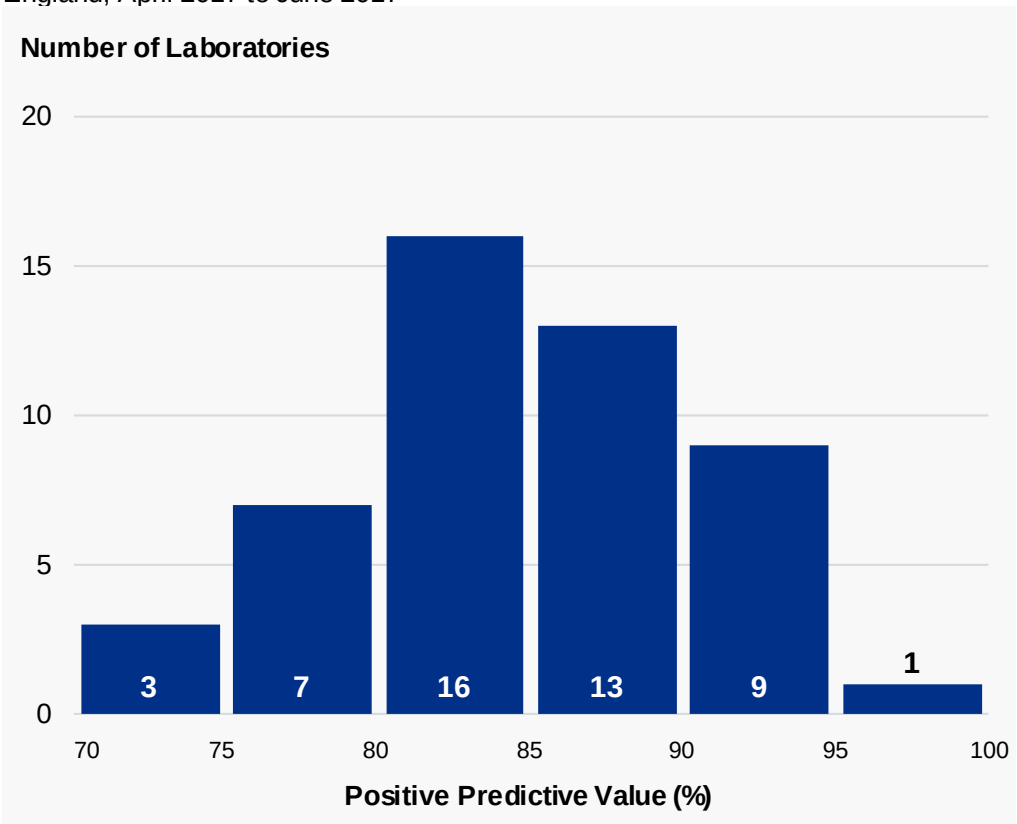
3.4.2 A positive predictive value (PPV) is calculated for each laboratory. The positive predictive value (PPV) is a measure of the accuracy of cytological prediction of CIN2, CIN3, adenocarcinoma in situ / cervical glandular intraepithelial neoplasia (CGIN) or cervical cancer.

A high PPV can indicate accurate prediction although other factors need to be taken into account such as Abnormal Predictive Value (APV).

The PPV calculation for cervical screening is outlined in the Definitions section of Appendix B. Reported PPVs for laboratories in the first quarter of 2017-18 ranged from 72.7% to 95.0% with the majority (45 out of 49 labs) lying between 75% to less than 95% (see Figure 18). The range and distribution of PPV values in the first quarter of 2017-18 are similar to those for the period April 2016 to March 2017 (the latest complete year for which data are available).

Figure 18: Positive Predictive Value, by laboratory

England, April 2017 to June 2017

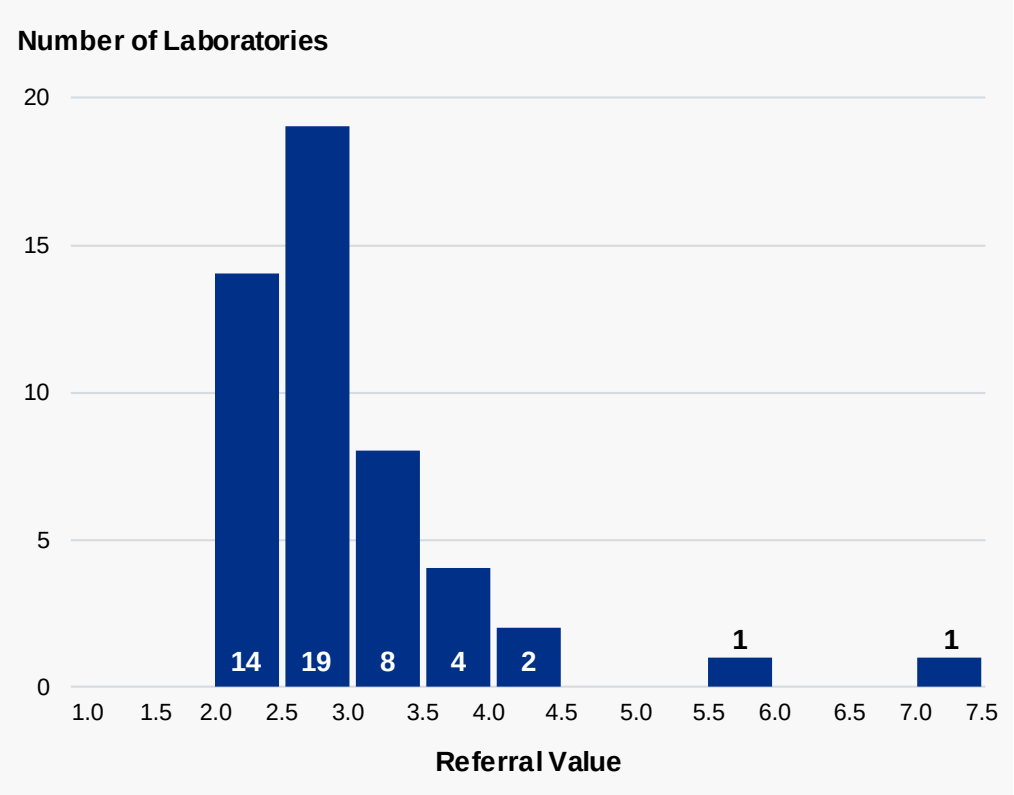


Source: KC61, NHS Digital. See Table 19a in the Data Tables.

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 2017-18 ranged from 2.1 to 7.0 with the majority lying below 3.0 (see Figure 19).

Figure 19: Referral Value, by laboratory

England, April 2017 to June 2017



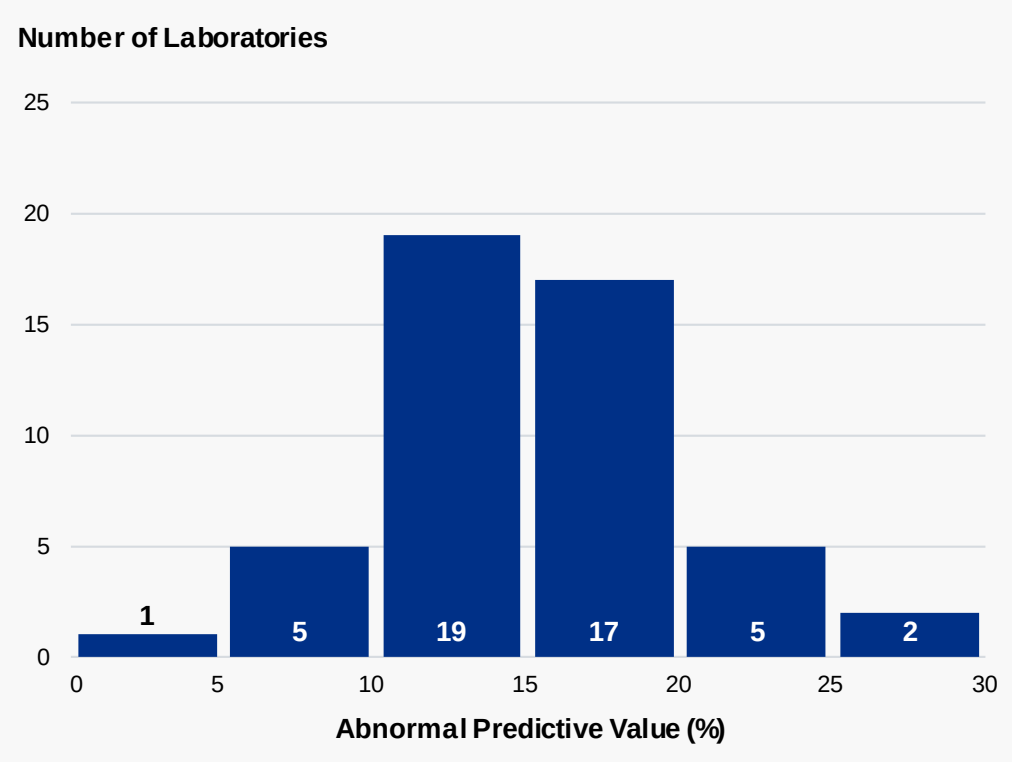
NB: Women with negative cytology but who test positive for HPV and are referred to colposcopy, are not currently included in the calculation of referral value. See Appendix B - Definitions for more information.
Source: KC61, NHS Digital. See Table 19a in the Data Tables.

The range and distribution of RV values in the first quarter of 2017-18 are similar to those for the period April 2016 to March 2017 (the latest complete year for which data are available).

3.4.4 An Abnormal Predictive Value (APV)[23] 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 2017-18 ranged from 4.4% to 28.5% with the majority lying between 10% and 20% (see Figure 20).

Figure 20: Abnormal Predictive Value, by laboratory

England, April 2017 to June 2017



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

[23] 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

Colposcopy

A colposcopy is a procedure to examine the cervix. Biopsies of tissue may be taken during this procedure.

This section reports on referrals to colposcopy clinics. Women in the screening programme are referred for colposcopy where it is indicated by the result of their test. This section includes women who were referred from outside the screening programme.

4.1 Referrals for colposcopy

4.1.1 Details of the first referrals of each quarter to each clinic were recorded. A total of 175,995 referrals to colposcopy were reported in 2017-18, a fall of 4.4% from 2016-17 (184,098 referrals[24]).

Of all the referrals to colposcopy in 2017-18, 64.6% were reported as being triggered by a screening test and 27.0% were clinically indicated (i.e. women were referred because they had symptoms of a cervical abnormality). Breaking down the referrals from screening tests further, 45.2% of referrals followed findings of borderline change or low-grade dyskaryosis; 7.4% of referrals followed findings of high-grade dyskaryosis (moderate) and 11.2% followed findings of high-grade dyskaryosis (severe) or worse (see Table N).

The proportion of referrals to colposcopy for 'Other' reasons fell from 10.7% in 2016-17 to 8.4% in 2017-18. 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.

[24] North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown for 2016-17 have been calculated using revised data and may not match last year's published figures.

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

England, 2016-17 and 2017-18 Numbers and *Percentages*

	2016-17*	2017-18
Total number of referrals	184,098	175,995
	%	%
Screening sample - total**	*63.2*	*64.6*
Inadequate	*0.8*	*0.8*
Borderline changes	*17.6*	*18.2*
Low-grade dyskaryosis	*26.5*	*27.0*
High-grade dyskaryosis (moderate)	*7.3*	*7.4*
High-grade dyskaryosis (severe)	*10.0*	*10.2*
High-grade dyskaryosis/?invasive carcinoma***	*0.3*	*0.3*
?Glandular neoplasia***	*0.7*	*0.6*
Clinical indication – urgent	*7.4*	*7.6*
Clinical indication – non urgent	*18.7*	*19.5*
Other	*10.7*	*8.4*
Total	*100.0*	*100.0*

NB: the sum of components may not equal totals due to rounding.

* North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown for 2016-17 have been calculated using revised data and may not match last year's published figures.

** 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'. It refers to ?Glandular neoplasia of endocervical type.

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 2017-18, where women were referred to colposcopy, 40.6% were offered an appointment within 2 weeks of referral compared to 39.2% the previous year (see Table O). This percentage rose to 69.3% for those offered an appointment within 4 weeks, also an improvement on the 68.1% seen in 2016-17.

69.3% 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 0.6% of women referred in 2017-18. 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 O: Women referred to colposcopy – Time from referral to first offered appointment by indication

England, 2016-17 and 2017-18 Number and *Percentages*

	2016-17*	2017-18
Total number of referrals	184,098	175,995
Waiting time	%	%
All referrals		
less than or equal to 2 weeks	*39.2*	*40.6*
less than or equal to 4 weeks	*68.1*	*69.3*
less than or equal to 8 weeks	*98.6*	*98.5*
less than or equal to 12 weeks	*99.4*	*99.4*
High-grade dyskaryosis (moderate or severe)		
less than or equal to 4 weeks	*99.2*	*99.5*
High-grade dyskaryosis / ?invasive carcinoma**		
less than or equal to 2 weeks	*99.3*	*99.0*
?Glandular neoplasia**		
less than or equal to 2 weeks	*97.4*	*98.7*

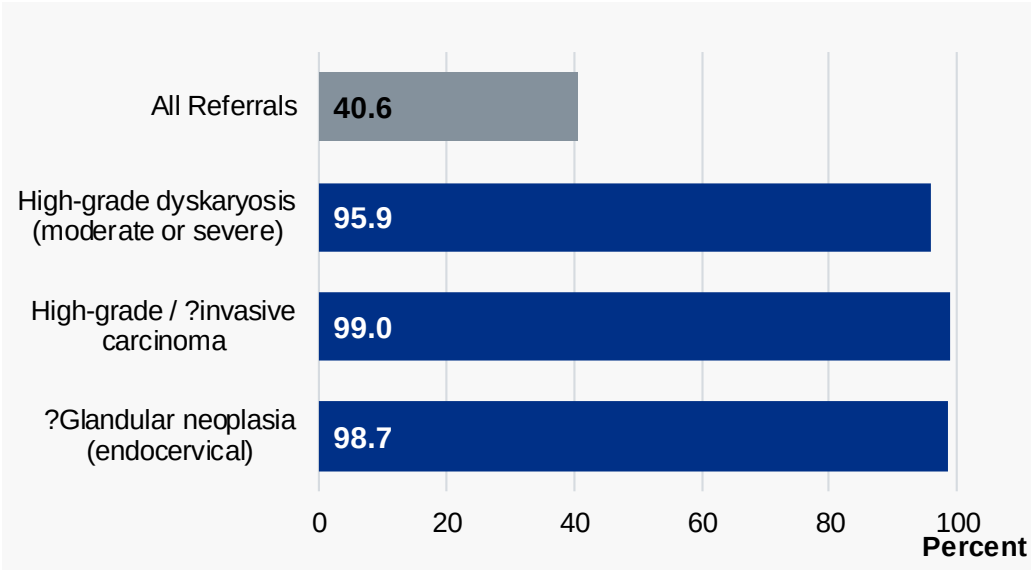
* North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown for 2016-17 have been calculated using revised data and may not match last year's published figures.

** ?invasive carcinoma means 'suspected invasive carcinoma', ?glandular neoplasia means 'suspected glandular neoplasia of endocervical type'.
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 21.

Figure 21: Women referred to colposcopy – Women offered an appointment within two weeks of referral by indication

England, 2017-18



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

4.1.3 Table P 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 96.0% in the North West to 99.7% in London.

For those with high-grade dyskaryosis (moderate or severe), the proportion offered an appointment within 4 weeks ranged from 99.1% in Yorkshire & the Humber to 99.8% in the West Midlands.

For those with high-grade dyskaryosis/?invasive carcinoma, the proportion offered an appointment within 2 weeks was above 98% in all but three regions (North West at 97.4%, London at 97.8%, and South West at 97.8%), this compares to last year when all regions met or exceeded 98%. For those with ?glandular neoplasia of endocervical type, the proportion offered an appointment within 2 weeks ranged from 96.7% in the North West to 100% in the North East, East Midlands, East of England and the South West.

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

England by reporting region*, 2017-18 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	***40.6***	*49.7*	*43.3*	*53.1*	*40.7*	*44.1*	*44.7*	*44.8*	*29.6*	*40.1*	*32.5*	*45.7*
less than or equal to 4 weeks	***69.3***	*76.6*	*69.1*	*80.6*	*66.3*	*74.7*	*78.0*	*76.7*	*57.8*	*68.6*	*55.7*	*78.0*
less than or equal to 8 weeks	***98.5***	*98.5*	*97.4*	*99.1*	*96.0*	*97.3*	*98.2*	*99.3*	*99.7*	*99.2*	*99.2*	*99.2*
less than or equal to 12 weeks	***99.4***	*99.2*	*98.3*	*99.7*	*98.5*	*99.0*	*98.9*	*99.8*	*99.9*	*99.8*	*99.9*	*99.7*
High-grade dyskaryosis (moderate or severe) (%)												
less than or equal to 4 weeks	***99.5***	*99.2*	*99.5*	*99.1*	*99.3*	*99.2*	*99.8*	*99.6*	*99.6*	*99.7*	*99.8*	*99.7*
High-grade dyskaryosis/ ?invasive carcinoma (%)**												
less than or equal to 2 weeks	***99.0***	*100.0*	*100.0*	*100.0*	*97.4*	*100.0*	*100.0*	*100.0*	*97.8*	*98.6*	*100.0*	*97.8*
?Glandular neoplasia (endocervical)* (%)**												
less than or equal to 2 weeks	***98.7***	*98.6*	*100.0*	*97.8*	*96.7*	*100.0*	*98.3*	*100.0*	*98.7*	*99.6*	*99.2*	*100.0*

*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 reporting region is broken down to show the South East and South West 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 2017-18, a total of 394,776 appointments were reported at colposcopy clinics, a decrease of 5.7% on 2016-17 (418,836 appointments). Of these, 55.8% were new appointments (i.e. all appointments offered for a first visit), representing a 1.2% increase from 54.6% in 2016-17. Return for treatment appointments made up 8.0% of the total, and 36.3% of appointments were follow-ups (see Table Q).

Table Q: Appointments for colposcopy - Appointment type

England, 2016-17 and 2017-18 Numbers and *Percentages*

	2016-17*		2017-18	
Appointment type	Number	%	Number	%
New appointments	228,501	*54.6*	220,214	*55.8*
Return for treatment	33,311	*8.0*	31,410	*8.0*
Follow up	157,024	*37.5*	143,152	*36.3*
Total	**418,836**	***100.0***	**394,776**	***100.0***

* North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown for 2016-17 have been calculated using revised data and may not match last year's published figures.

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

4.2.2 Table R shows that although 71.2% of all appointments in 2017-18 were attended, 2.5% were cancelled by the patient on the day and in the case of 8.2% of appointments, the patient did not attend and gave no advance warning. 4.2% of total appointments were cancelled by the clinic.

8.2% of patients did not attend colposcopy appointments and gave no prior warning

The lowest attendance was seen in follow-up appointments, where only 64.0% were attended; in 10.9% of follow up appointments the patient failed to attend with no advance notice.

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

England, 2017-18 Numbers and *Percentages*

Attendance status	New appointments	Return for treatment	Follow up	All appointments
Total appointments	220,214	31,410	143,152	394,776
	%	%	%	%
Attended	*74.6*	*80.0*	*64.0*	*71.2*
Cancelled by patient - in advance	*13.3*	*11.6*	*15.3*	*13.9*
Cancelled by patient - on the day	*2.3*	*1.9*	*2.8*	*2.5*
Cancelled by clinic	*2.6*	*2.4*	*6.9*	*4.2*
Did not attend - no advance warning	*7.0*	*4.0*	*10.9*	*8.2*
Did not attend - arrived late	*0.0*	*0.0*	*0.0*	*0.0*
Did not attend - left without being seen	*0.0*	*0.0*	*0.0*	*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 2017-18, a total of 165,606 first attendances at colposcopy were reported, a fall of 4.1% from 2016-17 (172,651 attendances[25]) – see Table S. Most first attendances will relate to a referral in that year, although some women attending may have been referred in a previous

[25] North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown for 2016-17 have been calculated using revised data and may not match last year's published figures.

year and some of the women referred in 2017-18 will attend in the next year.

Of all first attendances at colposcopy, 58.1% 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 62.0%.

The most common treatment or procedure at first attendance was diagnostic biopsy, which was carried out at 45.1% of all first attendances. The use of this procedure was most common amongst those referred with low-grade abnormalities (60.3%), with only 1.3% 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 (52.6%), followed by diagnostic biopsy (34.8%).

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

England, 2017-18 — 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	165,606	1,380	75,122	31,673	12,646	31,342
	%	%	%	%	%	%
No procedure	*41.9*	*76.3*	*38.0*	*12.4*	*58.4*	*61.7*
Procedure used	*58.1*	*23.7*	*62.0*	*87.6*	*41.6*	*38.3*
Diagnostic biopsy	*45.1*	*22.0*	*60.3*	*34.8*	*35.1*	*31.0*
Excision	*11.2*	*0.1*	*1.3*	*52.6*	*1.6*	*1.5*
Ablation without biopsy	*0.4*	*0.1*	*0.0*	*0.0*	*0.7*	*1.3*
Ablation with biopsy	*0.1*	*0.1*	*0.0*	*0.1*	*0.1*	*0.3*
Other	*1.4*	*1.4*	*0.3*	*0.1*	*4.1*	*4.2*

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 of endocervical type'.
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 68.6% in the South West (see Table 23 in the Data Tables).

The use of diagnostic biopsy for those attending with high-grade abnormalities ranged from 22.1% in the South East to 74.8% in London. For low-grade abnormalities, the equivalent range was 43.3% in the East of England to 74.9% in the North East.

The use of excision at first attendance was more common for those attending with high-grade abnormalities. In regions outside London this ranged from 52.0% in Yorkshire and Humberside to 64.1% in the North West. In London the value was lower at 9.5%.

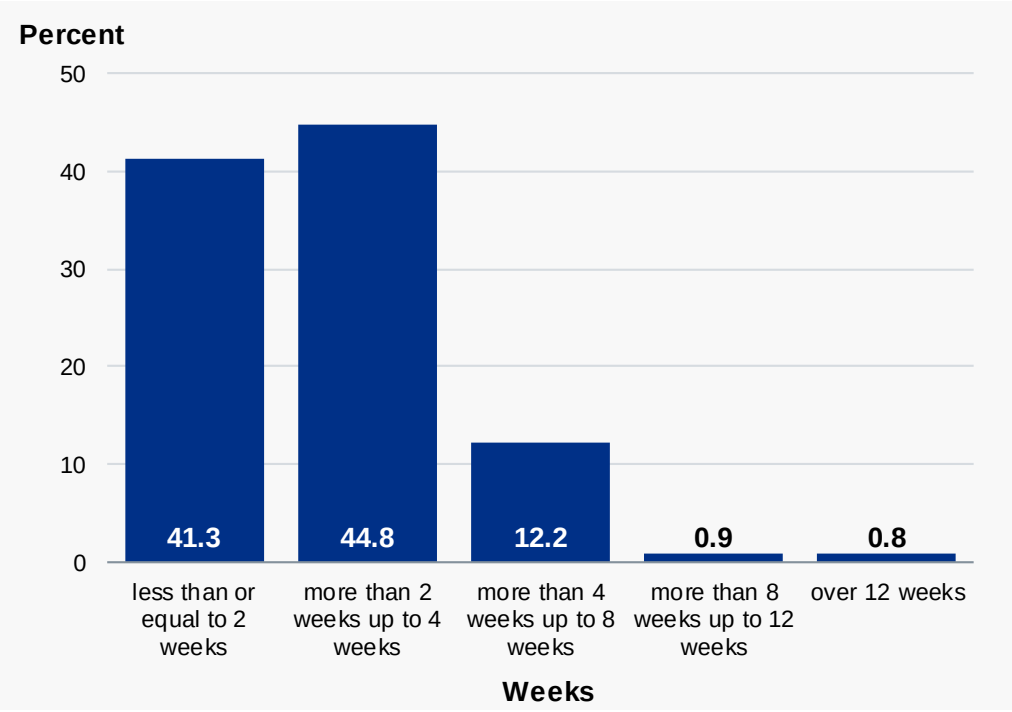
It is likely that the majority of those women presenting with high-grade abnormalities and reported as having either no treatment or a diagnostic biopsy went on to receive therapeutic treatment at a subsequent attendance.

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 2017-18, a total of 44,715 biopsies were reported by clinics in the four sample months. These represent approximately one third of the total annual workload. 44,712 of those biopsies had time to result recorded. The woman was informed of her result within 2 weeks in 41.3% of all cases, and in a further 44.8% of cases, women were informed within 4 weeks. In 0.8% of cases, women had not been informed of their results within 12 weeks (see Figure 22). This latter figure includes cases where the result had yet to be reported to the clinic.

Figure 22: Biopsies taken at colposcopy - Time from biopsy until patient informed of result (4 month sample)
England, 2017-18



NB: The sum of components may not equal totals due to rounding.
This chart is based on a total of 44,712 biopsies with a time to result recorded, three biopsies recorded no time to result and are not included.
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, 67.3% were diagnostic, 31.2% were excision and the remaining 1.5% were other non-diagnostic biopsies (see Table T).

Table T: Biopsies by type (4 month sample)

England, 2016-17 and 2017-18 — Numbers and *Percentages*

		Diagnostic		Excision		Other non-diagnostic	
Year	Total biopsies	Number	%	Number	%	Number	%
2016-17	46,340	31,228	*67.4*	14,381	*31.0*	731	*1.6*
2017-18	44,715	30,098	*67.3*	13,945	*31.2*	672	*1.5*

* North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown have been calculated using revised data and may not match last year's published figures.

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 2017-18, where the result was known, 85.4% showed evidence of cervical intra-epithelial neoplasia (CIN) or worse[26]. This is a decrease from 2016-17, when the equivalent proportion was 85.6% (see Table U). CIN2 or worse was found in 73.4% of non-diagnostic biopsies. The proportions at regional level are shown in Table 25 in the Data Tables.

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

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

England, 2016-17 and 2017-18	Numbers and *Percentages*	
Outcome	**2016-17***	**2017-18**
Number of biopsies reported	15,112	14,617
Biopsies with unknown result	30	17
Biopsies with known result (=100%)	**15,082**	**14,600**
	%	%
Cancer	*2.0*	*2.0*
Adenocarcinoma in situ	*2.9*	*2.7*
CIN3	*44.4*	*43.7*
CIN2	*24.8*	*24.9*
CIN1	*11.5*	*12.1*
HPV / Cervicitis only	*5.6*	*5.3*
No CIN / No HPV	*8.5*	*9.0*
Inadequate / unsatisfactory biopsy	*0.3*	*0.2*
Total showing CIN or worse	***85.6***	***85.4***

* North Middlesex University Hospital (London) has re-submitted their KC65 data for 2016-17 since publication last year. Figures shown have been calculated using revised data and may not match last year's published figures.

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[27]. 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[28].
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[29].
Carcinoma in	This is an early form of carcinoma. There are

[27] 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

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

[29] 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[30]. 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 (CIN). This is sub-divided in to CIN1, CIN2, CIN3. 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).[31]
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[32].
Dysplasia	Dysplasia is an abnormality of development.

[30] NHS Choices: http://www.nhs.uk/Conditions/Cancer-of-the-cervix/Pages/Diagnosis.aspx
[31] NHS Choices: http://www.nhs.uk/conditions/colposcopy/Pages/Introduction.aspx
[32] 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

	Cervical dysplasia refers to abnormal changes in 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'[33].
Histology	The study of the form of structures seen under the microscope[34].
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.
HPV Primary Screening	HPV Primary Screening has been used in six pilot sites and is starting to be implemented as the preferred method of screening. Cervical samples are first tested for the presence of HPV. Only those samples that test positive for HPV will go on to have cytology testing for abnormal cells.
HPV Triage Screening	HPV Triage screening is used on cervical samples that have first had a cytology test result of 'borderline' or 'low grade dyskaryosis'. The sample is further tested for the presence of HPV and if positive indicates the women should be referred for colposcopy.
KC 53 Return	Information collected from the call and recall system. 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.

[33] NHS Choices: http://www.nhs.uk/conditions/biopsy/pages/introduction.aspx
[34] MedicineNet.Com, https://www.medicinenet.com/script/main/art.asp?articlekey=7318

Koilocytosis	Koilocytosis is a type of change to cervical cells caused by HPV infection.
Liquid Based Cytology (LBC)	Liquid based cytology (LBC) is a way of preparing cervical samples for examination in the laboratory[35].
Non-diagnostic biopsy	A biopsy taken with the intention of excising/treating the cervical abnormality.
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 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.

[35] http://www.cancerscreening.nhs.uk/cervical/lbc.html

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Published by NHS Digital,
part of the Government Statistical Service