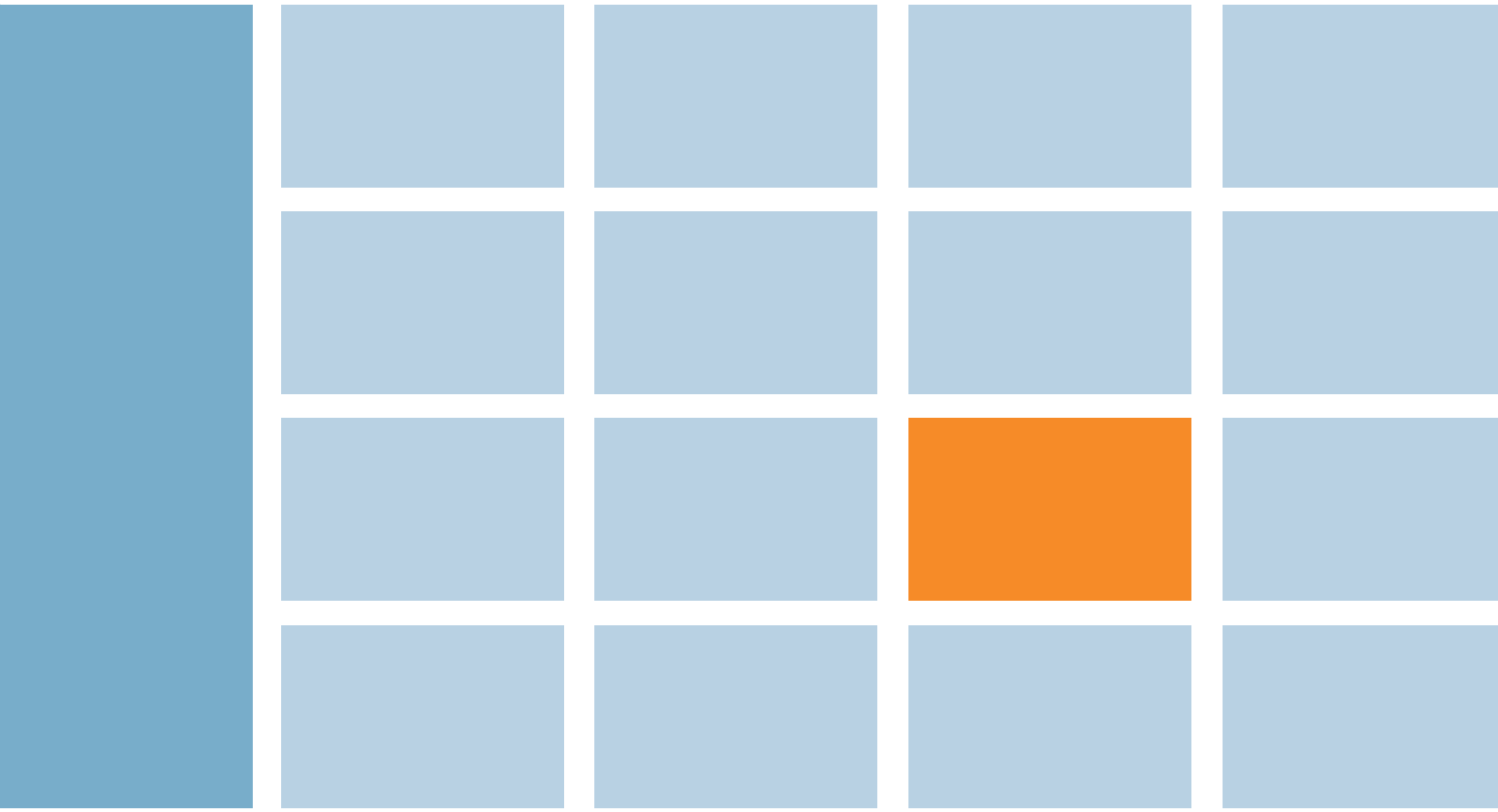
CervicalCheck
AN CLÁR NÁISIÚNTA SCAGTHÁSTÁLA CEIRBHEACS
THE NATIONAL CERVICAL SCREENING PROGRAMME

CervicalCheck Programme Report 2022-2023



An tSeirbhís Náisiúnta Scagthástála
National Screening Service

Contents

Introduction

CervicalCheck, our national cervical screening programme, began in 2008. In 2020 we changed from cytology-based screening to primary HPV testing, with follow-up cytology for those who need it. This was in response to evidence that HPV screening is better at detecting cervical abnormalities before they develop into cancer.

HPV cervical screening, together with HPV vaccination and access to timely treatment, will make cervical cancer rare in Ireland by 2040.

CervicalCheck is for women and people with a cervix, who are aged 25 to 65 and do not have symptoms of cervical cancer. We invite women aged 25 to 29 every three years, and those aged 30 to 65 every five years.

Cervical screening can save lives. It aims to:

- prevent cervical cancer by finding and treating changes to the cells in the cervix before they develop into cancer
- find cervical cancer at an early stage, before symptoms start, when it can be easier to treat.

We send women a letter inviting them to make a free screening appointment in primary care (a GP or clinic), where their sample taker will collect a cervical sample for HPV testing. The majority will have a normal (HPV negative) screening result and will be recalled for screening in three or five years.

Most people will get some type of HPV during their lives. For nearly all people, the virus goes away on its own and does not cause any harm. Your body's immune system can clear it in one to two years. Some types of HPV have a higher risk of causing cervical cancer.

When HPV is detected, the laboratory will test the sample using a cytology test. When cervical cell abnormalities are detected on cytology testing, women are referred to colposcopy for assessment. Colposcopy is the diagnostic arm of the screening service which enables a more detailed examination of the cervix. When HPV is detected and cytology testing is normal, we invite women to have a repeat cervical screening test in 12 months. If HPV is still present 12 months later, women are referred to colposcopy for assessment. After colposcopy, a woman is either discharged, offered further investigation such as cervical biopsies, or offered a colposcopy treatment, depending on her assessment.

The data presented in this report relate to women who received an invitation to take part in CervicalCheck between 1 April 2022 and 31 March 2023.

Message from the Clinical Director and Programme Manager

We are pleased to report that 269,550 women took part in cervical screening from April 2022 to March 2023. The five-year coverage for screening remains high, at 75% for the period of this report. This means that 75% of eligible women aged 25 to 65 had a cervical screening test in the five years preceding March 2023. Screening coverage is higher among younger women. Coverage in cervical screening is lower among women aged 55 and older. Screening coverage varies between counties.

11% of screened women tested positive for HPV. Almost 50% of these had no abnormalities found through reflex cytology testing. 44% had low-grade abnormalities found and 8% had high-grade abnormalities found through reflex cytology.

88% of women who were advised to have an early repeat test in 12 months attended within 15 months of being invited. 53.5% of women tested positive for HPV at this repeat test and were referred to colposcopy.

Cervical screening can prevent cervical cancer developing by finding and treating pre-cancerous abnormalities. Overall, we referred 22,112 women - 8.8% of all women who were screened - to colposcopy. In colposcopy, 10,660 women were diagnosed with low-grade pre-cancerous cells (CIN1). Most women with CIN1 do not need treatment. 5,670 women were diagnosed and treated for high-grade abnormalities (CIN2+).

Cervical cancer can be a treatable disease if found early. CervicalCheck aims to find changes to cells in the cervix that might become cancer if left untreated. It also finds cancer in some women, often at an earlier stage than it would have been found without screening. In 2022 to 2023, we identified 162 cases of cervical cancer in colposcopy, through cervical screening.

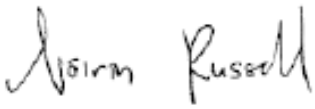
Quality assurance (QA) underpins every aspect of the CervicalCheck programme. Our programme performance is measured against standards in our *Standards for Quality Assurance in Cervical Screening.*[1] We performed well against these standards in 2022 and 2023, achieving the majority of our targets, which are outlined in this report.

We are committed to quality improvement. We completed several of our quality improvement projects in 2022 and 2023, including developing and beginning implementation of our Education Strategy, rolling out quality assurance visits of colposcopy clinics and designing our process for histology QA visits and QA visit schedules, and designing guidance for screening in women with clinical symptoms. We also introduced our interval cancer review process, called Personal Cervical Screening Reviews. The review process design was overseen by a multidisciplinary implementation committee, including representatives from our Patient and Public Partnership. We engaged directly with women who have been impacted by an interval cancer and had experience of receiving interval cancer review results to incorporate their insights and experience. Putting women and their experiences at the centre of our process design was an important part of our learning.

We continued to build new partnerships and strengthen existing relationships. In 2022, the new National Cervical Screening Laboratory at The Coombe Hospital in Dublin processed its first samples for our CervicalCheck programme. In January 2023 we partnered with the National Cancer Control Programme, the National Immunisation Office, the National Women and Infants Programme, and the National Cancer Registry Ireland to launch Ireland's roadmap to eliminate cervical cancer as a public health problem.

We continued to work to address the barriers to screening to maximise the public health impact of our cervical screening programme and to improve equity in screening. In 2022 we began researching the potential role of self-sampling in cervical screening. In 2023 we completed research to understand knowledge and awareness of cervical screening and cervical cancer. The findings provided insights into why some people may or may not take part in screening which we use to inform our communications campaigns. We also completed an age extension project, issuing bespoke invitations for HPV screening to approximately 107,000 women who were aged 60 to 65 in 2020, when the upper age eligibility for CervicalCheck was extended from 60 to 65 years. These women had not had the opportunity of free HPV screening under the previous age range.

Our focus on operational excellence ensures that we deliver high-quality, efficient and safe services. This could not be achieved without the dedication and professionalism of the people who work to ensure that all our services are delivered to high standards. We extend our thanks to our staff and all our partners in the screening pathway, from laboratory to primary and community care, to colposcopy and histopathology. The data in this report demonstrates that cervical screening is a vital tool in preventing cervical cancer. With early detection and timely treatment, we can save lives. We will continue to work together to improve people's health, and to enable more people to choose screening.



Professor Nóirín Russell

Clinical Director

Gráinne Gleeson

Programme Manager

CervicalCheck Charter: Our commitment to you

Our charter tells you what you can expect when you use our screening and colposcopy services. It shows you how you can help us make our services work better for you and for others. We worked with women who use our screening services, our staff and our partners to develop this charter.

Taking part

- We offer free screening every 3 or 5 years to women and people with a cervix aged 25 to 65.
- You can book your test at any clinic or GP practice registered with us for cervical screening.
- We work to make our services easy to access. Let us know if we meet your needs and if not, how we can make it better for you.
- We know that some people find it difficult to come for cervical screening. You can talk to your doctor or nurse about this or call us on 1800 45 45 55.
- We'll let you know if you need a free, follow-up hospital appointment at a colposcopy clinic.
- We ask sample takers and colposcopists to make sure you have privacy during your appointment. You can have a support person with you.

Communication and information

- We will send you a letter in the post when you are due your next screening test. You can also check online to find out when your next test is due. You don't need a letter to book a test.
- We will send you information when we invite you for screening, and when we send your results, to help you make an informed choice.
- We will send you and your doctor your test results and information about any next steps within 4 weeks of your screening appointment.
- We will invite you to colposcopy within 8 weeks of you receiving your test results, if you need further tests.
- Please let us know if you change your address. You can use our website to update your name and address, register for cervical screening or check when your test is due. You can also call us on 1800 45 45 55.

Responsibility

- We are part of the HSE's National Screening Service and provide regular reports on how we are doing.
- We will let you know if we find we have made a mistake, and we will do everything we can to prevent it from happening again to you or anyone else.
- We welcome your feedback. If you want to tell us about your experience with cervical screening, you can call us on Freephone 1800 45 45 55 or email us on info@cervicalcheck.ie.
- We will keep your feedback and consider it when making improvements to our programme.

Safe and effective services

- We have guidelines and standards for each part of the screening process that we track to ensure we are providing an excellent service.
- We make improvements to our programme to ensure we continue to save lives and improve people's health.
- We update our websites regularly with information for you about our service.

Respect and privacy

- We will listen to you, respect you and treat you with kindness.
- We support, educate and train our staff to treat everyone fairly, and to respect everyone's background and cultural identity.
- We will keep your personal information (name, address, date of birth, PPSN) safe and secure on our database.

Improving health

- We use the best available screening test. It screens for the HPV virus.
- We will give you information about the symptoms of cervical cancer. A small number of women who have regular cervical screening will develop cervical cancer, even after a normal screening result..
- You can ask us to review your screening history if you are diagnosed with cervical cancer.

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www.hse.ie/cervicalcheck

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Terms and abbreviations

Ablation	Heat treatment to destroy cervical cells
AGC	Atypical glandular cells
AIS	Adenocarcinoma in situ. A pre-cancer involving the columnar glandular (endocervical) cells rather than the squamous cells of the cervix
ASC-H	Atypical squamous cells for which a high-grade lesion cannot be excluded
ASCUS	Atypical squamous cells of undetermined significance
Cervical excision	Surgical removal of abnormal tissue from cervix
cGIN	Cervical glandular intra-epithelial neoplasia, which describes abnormal pre-cancerous changes of the glandular cells of the cervix
CIN	Cervical intra-epithelial neoplasia, which describes abnormal pre-cancerous changes of the squamous cells of the cervix
CIN1 (low-grade)	One-third of the thickness of the cervical surface layer is affected by abnormal cells
CIN2 (high-grade)	Two-thirds of the thickness of the cervical surface layer is affected by abnormal cells
CIN3 (high-grade)	Full thickness of the cervical surface layer is affected by abnormal cells
Clinically responsible doctor (CRD)	The clinician with overall responsibility for patient care during a screening appointment
Colposcopic impression	The colposcopist's visual assessment of the cervix made during a colposcopy procedure
Coverage	Coverage is the proportion of eligible women living in Ireland aged 25 to 65 years who have had a cervical screening test in the past 5 years
DNA	Did not attend
Excisional biopsy	The entire area of suspicious tissue is removed along with surrounding healthy tissue for further examination under a microscope and diagnosis
Excisional techniques	Methods used to completely remove suspicious tissue which includes removing a portion of surrounding healthy tissue
Failsafe	Processes that the programme follows to help ensure women receive colposcopy or follow-up screening appointments when these are recommended
HPV	Human papillomavirus
HSIL	High-grade squamous intraepithelial (moderate and severe) lesion
LSIL	Low-grade squamous intraepithelial lesion
LTFU	Lost to follow-up – where a woman does not attend her follow-up appointment even after failsafe measures have been taken
Positive predictive value (PPV)	Measure of the ratio of true positives to all positive (abnormal) results – it indicates the chance of having an abnormality if a person is told they have a positive (abnormal) result. It is dependent on the sensitivity, specificity and prevalence of the condition in the population
Reflex cytology	The use of cytology testing after a positive HPV test to triage patients who need immediate referral for colposcopy
RV	Referral value
Women	Women and people with a cervix

Executive summary

Cervical screening overview 2022-2023

269,550 women screened.
10,660 women diagnosed with low-grade pre-cancerous cells (CIN1). Most did not require treatment as the cells usually recover and return to normal without treatment
5,670 women diagnosed and treated for high-grade pre-cancerous cells (CIN2 and CIN3)
162 cervical cancers were diagnosed and treated
75% population coverage
Coverage decreased after age 55
Coverage varied between counties but has increased in all counties

Delivery of results

95% of women received their results within 4 weeks of their test.

Screening results

11% of women screened test positive for HPV.
• **4.8%** of women screened had a HPV positive / low-grade cytology result
• **0.8%** of women screened had a HPV positive / high-grade cytology result
Of the 25,736 women who screened positive for HPV on the initial screening round
• **49%** had no cytological abnormalities
• **44%** had low-grade cytological abnormalities
• **8%** had high-grade cytological abnormalities

We advise women who screen positive for HPV and have normal cytology to attend for a a repeat HPV test in 12 months' time (early repeat). 88% of these women attended within 15 months of being invited. We send a failsafe reminder to women who do not attend. We also send a failsafe reminder to the sample taker who took their last test.

We refer all women with a persistent HPV infection on their 12-month repeat colposcopy regardless of their cytology result. 53.5% of women test positive for HPV at this repeat test. The cytology results of the women who had an early repeat test were:

- **56%** no cytological abnormality
- **39%** low-grade cytological abnormalities (CIN1)
- **5%** high-grade cytological abnormalities (CIN2+)

Of the 269,550 women screened in the time period of this report, 22,112 women - 8.8% of those screened - were referred for colposcopic evaluation.

Colposcopy activity and outcomes

85% of women referred to colposcopy were referred for abnormal screening tests. The remaining 15% were referred for clinical reasons such as irregular vaginal bleeding or a suspicious cervical appearance.

The number of women attending colposcopy for the first time was 27,479 and 29,603 women were return attenders. We provided 57,082 colposcopy clinic appointments.

- **86%** of women referred to colposcopy with HPV positive/high-grade cytology were seen within 4 weeks
- **74%** of women referred with HPV positive/low-grade cytology were seen within 8 weeks
- Overall, **76%** of all women referred to colposcopy were seen within 8 weeks of referral.

The DNA rate at colposcopy was 8.6% and the new to return ratio was 1:1.1

The referral value (RV) examines the number of women that need to be referred to colposcopy to enable the detection of 1 case of high-grade cells (CIN2+) or invasive cervical cancer. The referral value was 3.54, which means that for every 3.54 people referred to colposcopy, one will be found to have CIN 2+.

Histology

46% of all attendances at colposcopy resulted in a histological biopsy.

The results of these biopsies were:

- 23% no evidence of CIN
- 50% low-grade CIN (CIN1)
- 27% high-grade CIN (CIN2+)
- 1% cervical cancer

Treatment at colposcopy

The majority of treatments performed in colposcopy are for pre-cancerous abnormalities. 97% of those who required treatment are treated under local anaesthetic as an outpatient.

  - 79% of treatments were large loop excisions of the transformation zone (LLETZ)
  - 21% of treatments were thermal ablation treatments of the transformation zone

- Approximately 1% of women were referred for treatment under general anaesthetic. These include people referred for a LLETZ, cone biopsy, trachelectomy, simple hysterectomy or radical hysterectomy.
- 1% cervical cancer

Women who attend for a first visit at colposcopy have a 5% chance of having a treatment performed on the day. Those who attend a follow-up visit have an 18% chance of having a treatment performed.

- 88% of those treated by excisional techniques at first visit had at least CIN1 confirmed on histology
- 90% of those treated by excisional techniques at any visit had at least CIN1 confirmed on histology

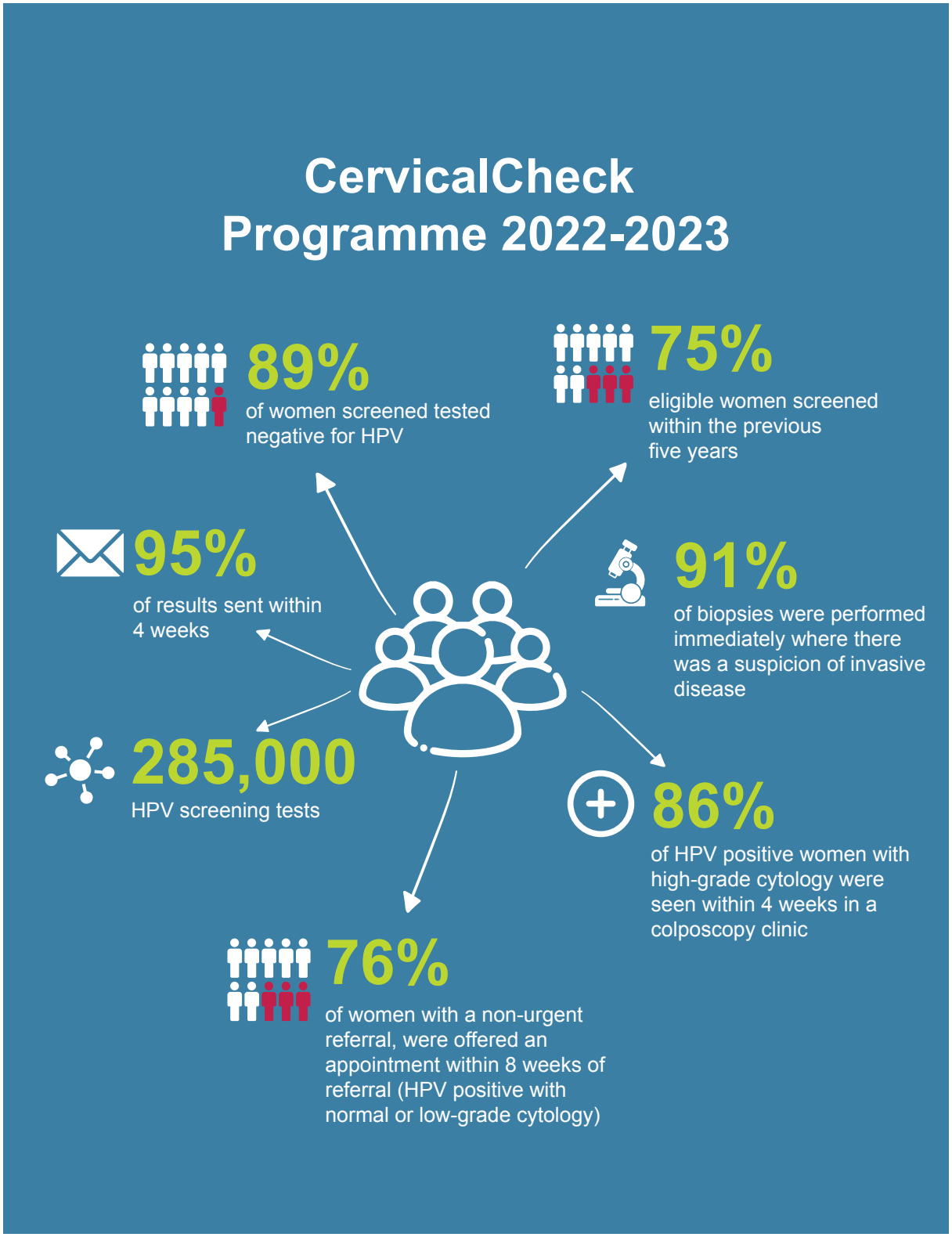
The positive predictive value of high-grade cytology was 78%. This means that for every 100 women referred with a HPV positive/ high-grade cytology screening result, approximately 78 will have confirmed high-grade CIN lesion or an invasive cancer.

The positive predictive value of a high-grade colposcopy was 60%. This is the likelihood that a colposcopic impression of high-grade disease will be confirmed as high-grade CIN or an invasive cancer on histological biopsy.

Quality improvement

Quality improvement is a systematic approach, guided by data, to improve the quality and safety of healthcare. Examples of our quality improvement projects for 2022/23 included: our Education Strategy, laboratory QA visit planning, colposcopy QA visit planning, interval cancer reviews, and pathways for women with clinical symptoms.

Highlights & infographic



Programme performance

The figures in this report relate to the women screened by CervicalCheck between 1 April 2022 and 31 March 2023. This report includes primary screening samples taken in non-primary care settings as well as those taken in colposcopy clinics.

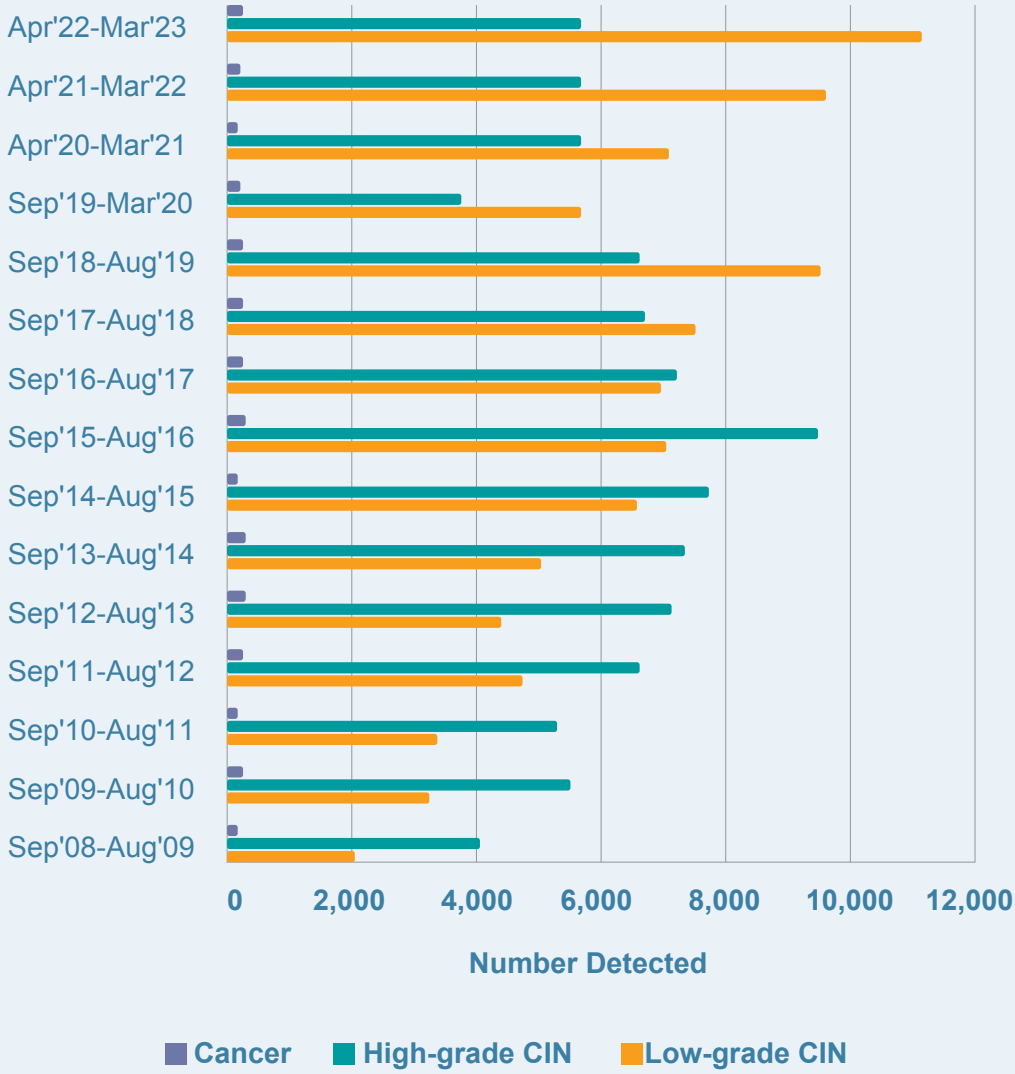
Table 1 and **Figure 1** show the numbers of women who have had pre-cancer and cancers detected via cervical screening since 2008. The follow-up treatment of pre-cancerous abnormalities and early-stage cancers occurs at colposcopy clinics. Approximately 80% of women diagnosed with cervical cancer who have previously attended for screening are diagnosed at stage 1.

Table 1. Numbers of pre-cancerous changes (cervical intra-epithelial neoplasia) and cancers detected since the CervicalCheck screening programme began (Sept 2008 to March 2023)

	Low-grade CIN	High-grade CIN	Cancer
Sep'08-Aug'09	2,036	4,037	100
Sep'09-Aug'10	3,212	5,518	145
Sep'10-Aug'11	3,253	5,296	129
Sep'11-Aug'12	4,666	6,462	151
Sep'12-Aug'13	4,439	5,421	160
Sep'13-Aug'14	5,407	7,034	175
Sep'14-Aug'15	6,492	7,649	222
Sep'15-Aug'16	7,114	8,885	187
Sep'16-Aug'17	7,264	7,503	131
Sep'17-Aug'18	7,585	6,656	120
Sep'18-Aug'19	9,454	6,308	110
Sep'19-Mar'20	5,510	3,748	88
Apr'20-Mar'21*	6,954	3,602	79
Apr'21-Mar'22	9,692	5,693	108
Apr'22-Mar'23	10,660	5,670	162

* Cervical screening was paused for three months from April-July 2020 due to government restrictions during COVID-19.

Figure 1. Pre-cancerous changes (cervical intra-epithelial neoplasia) and cancers detected since the CervicalCheck screening programme began (Sept 2008 - March 2023)



Screening activity overall

Table 2 shows the number of women screened each year by age group. This includes tests taken in the primary care settings, in secondary care clinics, and in colposcopy clinics. In total 269,550 screening tests were carried out in the period of this report. We invite women between the ages of 25 and 65 for screening. A small number of women under the age of 25 may attend under specific circumstances. Women aged 66 or above include women presenting for the first time at this age, as well as those who attended for post-colposcopy surveillance.

Table 2. Number of unique women who had a CervicalCheck screening (all locations*) test by age cohort from 1 April 2022 to 31 March 2023

Age group	2022-2023	
	N	%
<25**	411	0.2%
25 - 29	44,732	16.6%
30 - 34	39,298	14.6%
35 - 39	42,912	15.9%
40 - 44	44,420	16.5%
45 - 49	30,764	11.4%
50 - 54	26,702	9.9%
55 - 59	24,610	9.1%
60	4,340	1.6%
61 - 65	10,755	4.0%
>65***	606	0.2%
Total	**269,550**	**100.0%**

* *all locations is defined as screening tests taken in primary care settings, secondary care settings and colposcopy clinics.*

** *Cervical screening under the age of 25 may lead to women receiving unnecessary treatment for lesions that would never have developed into invasive cancer.*

*** *Screening after the age of 65 is not proven to have more benefits than harm. Exceptions may include women attending for post-colposcopy follow-up, women on renal dialysis or post-organ transplantation, women living with HIV and those who have had a previous abnormal test result and are within the recommended follow-up period.*

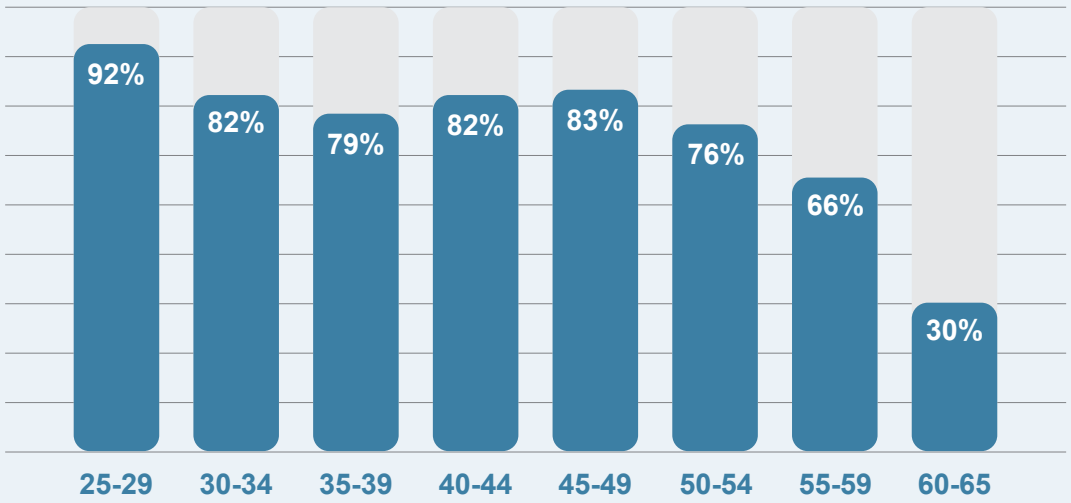
Programme coverage 2018-2023

Coverage is a key performance indicator. It represents the proportion of the target population* screened within a five-year period and indicates the effectiveness of the screening programme in reaching the target population. Our programme target is 80% coverage over a five-year period. The five-year coverage at the end of the previous reporting period (31 March 2022) was 73% for women aged 25 to 65 years.[2] This has increased to 75%, for the period of this report.

Prior to 2020, the age range for cervical screening was 25 to 60 years. To enable a direct comparison of our current coverage rate to previous years, we also report coverage for women aged 25 to 60. To enable comparison with previous years, we will continue to report coverage for both age ranges until we have invited the full cohort of women in this age range for screening. Ireland's eligible female population has increased by nearly 95,000 (an overall increase of approximately 1.9%) from 2022 to 2023 due to inward migration.[3] This data has also been included in the coverage calculation.

Figure 2 shows coverage by age group. Screening coverage is high in women up to age 54 and decreases in older cohorts. Coverage in women aged 60 to 65 is lower than other groups as they only became eligible for screening from 30 March 2020 and there has not been sufficient time (5 years) for the full cohort to be invited for screening. The programme continues to monitor coverage in this age group.

Figure 2. Five-year coverage of eligible women by age group on the cervical screening register* (as of 31 March 2023)



* *Population based on CSO 2016 projected to 2020, adjusted for those women who have had a total hysterectomy with complete removal of the cervix and therefore do not form part of the target population for cervical screening.*

Geographical coverage

The geographical spread of screening coverage by county is shown in Figure 3 and Table 3. The coverage calculations are based on population estimates from Census 2016 counts rolled forward to 2020 (as detailed below in Figure 4), and do not take into account estimates of emigration, immigration, hysterectomy status or deaths. Coverage varies across counties from 66% to 82% (Figure 4). Coverage trends between counties in 2021/22 and 2022/23 are compared in Table 3.

Figure 3. Five-year screening coverage (women age 25-65) by county 2018-2023

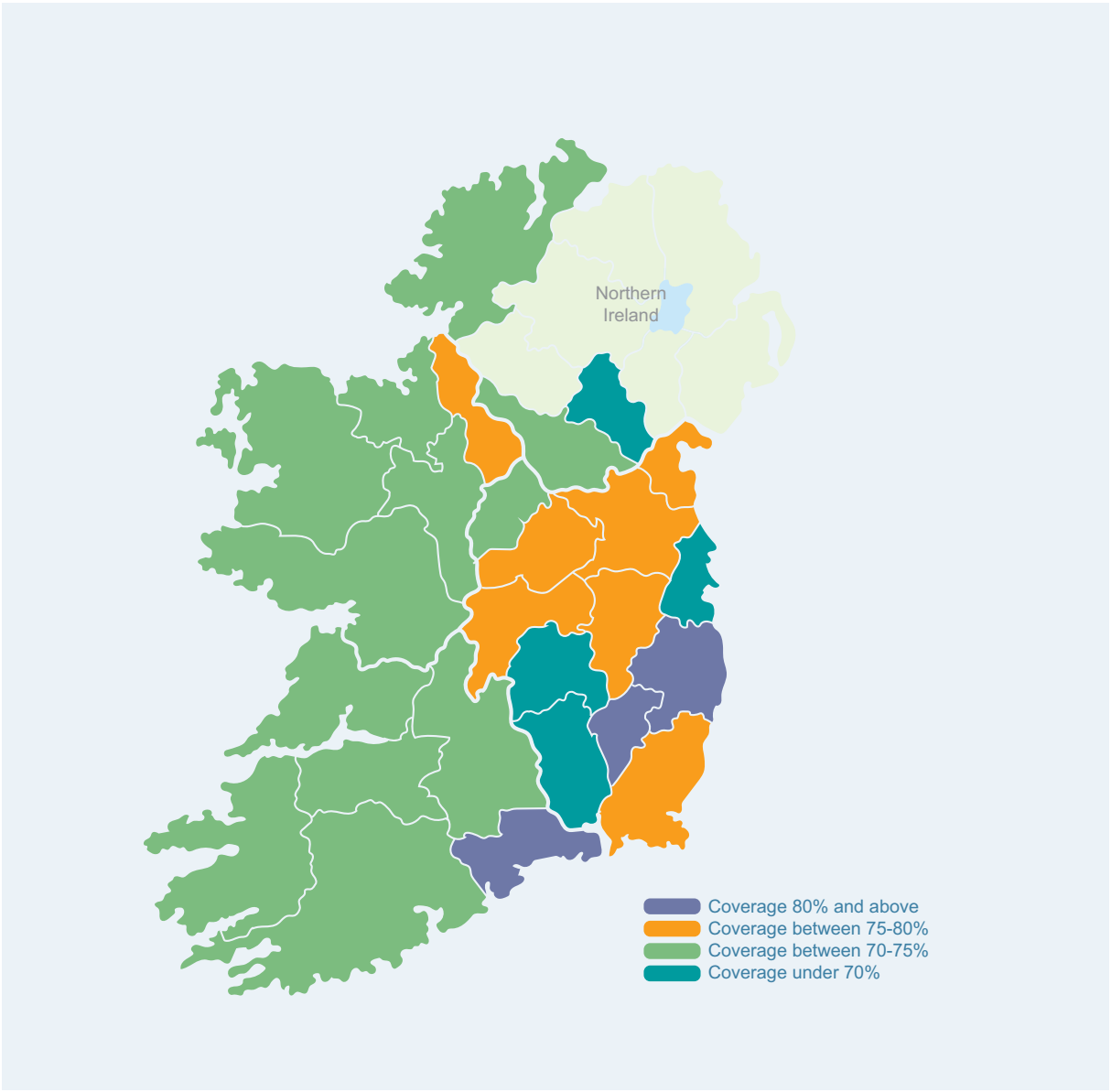
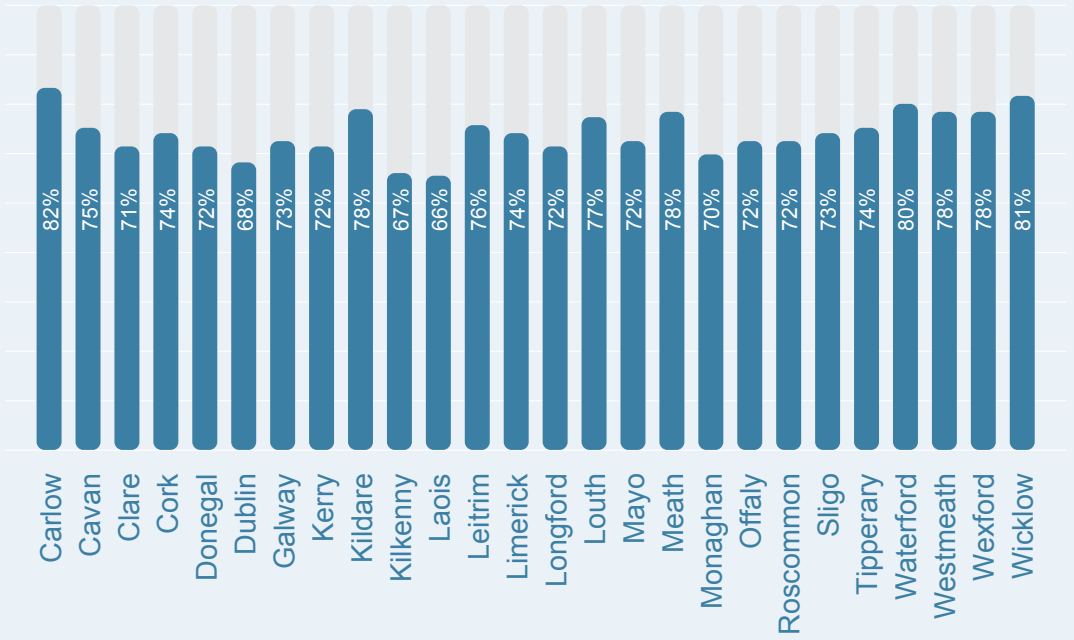


Figure 4. Five-year coverage (%) (women aged 25-65) based on county of residence* for period ending 31 March 2023



* *Population based on CSO 2016 figures projected to 2020, not adjusted for hysterectomy (hysterectomy data not available by geographical location). This refers to the proportion of individual women aged 25 to 65 screened during this period.*

Table 3. Coverage trends by county (women aged 25 to 65)

County	2021/2022	2022/2023	Trend
Carlow	82.6%	82.1%	→
Cavan	74.9%	74.6%	→
Clare	71.3%	71.3%	→
Cork	74.4%	74.0%	→
Donegal	72.5%	71.8%	→
Dublin	68.2%	67.8%	→
Galway	73.7%	73.3%	→
Kerry	71.2%	72.0%	→
Kildare	78.8%	78.4%	→
Kilkenny	67.5%	67.1%	→
Laois	66.9%	66.1%	→
Leitrim	76.0%	76.4%	→
Limerick	73.7%	74.0%	→
Longford	73.3%	72.0%	↓
Louth	77.8%	77.5%	→
Mayo	71.7%	72.1%	→
Meath	78.6%	78.2%	→
Monaghan	70.2%	69.9%	→
Offaly	72.4%	72.2%	→
Roscommon	71.3%	72.0%	→
Sligo	73.7%	73.3%	→
Tipperary	73.7%	74.0%	→
Waterford	80.6%	80.0%	→
Westmeath	78.9%	77.7%	↓
Wexford	78.0%	78.0%	→
Wicklow	80.9%	81.0%	→

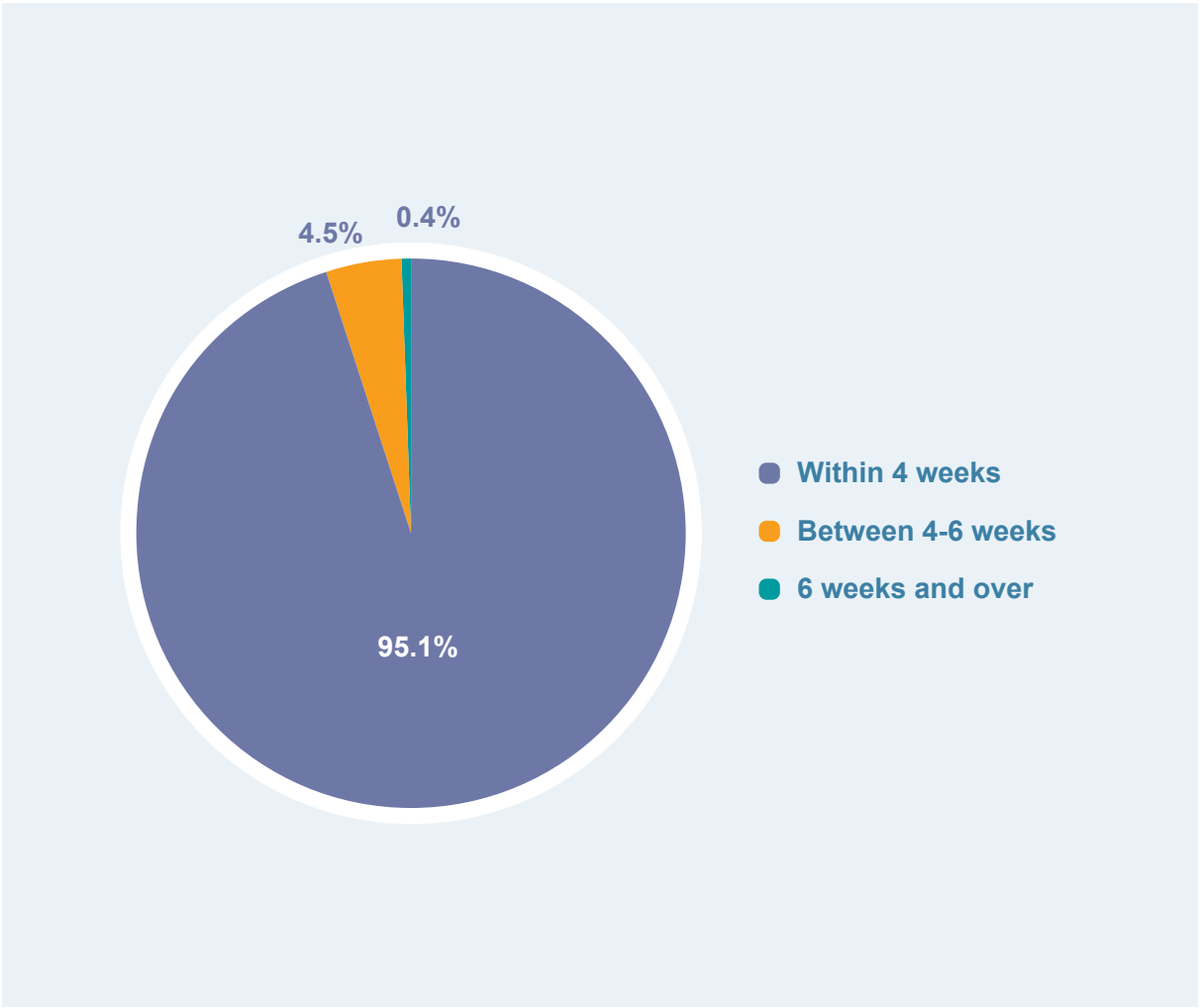
Trend Legend:

- → : 2022/23 figures are less than a 1% increase or less than a 1% decrease on 2021/22 figures
- ↓ : 2022/23 figures are a 1% or greater decrease on 2021/22 figures

Delivery of results

Figure 5 outlines the percentages of women sent results within our programme standard of four weeks of their screening test from 1 April 2022 to 31 March 2023.

Figure 5. Percentage of women sent results letter within specified timeframes from 1 April 2022 to 31 March 2023



Laboratory turnaround time

Our quality assurance standards require that screening results are authorised, released and transmitted to the programme within 10 working days of test samples being received by the laboratory. This enables women and their doctors to receive results in a timely manner. This is a quality measure for the programme and impacts on the experience of women who choose screening. It does not affect the accuracy of the result. The percentage of results returned to the programme within 10 working days of receipt of sample at laboratories for 2022/23 is shown in Table 4.

Table 4. Turnaround times between receipt of sample at laboratory to results being returned to programme

Performance parameter	2022/23	Target
Overall		
% results returned within 10 working days of receipt of sample at laboratory	84.5	>95%

Screening results

Screening outcomes for tests in 2022 to 2023 are shown in Table 5 and Figure 7. The overall prevalence of HPV among people screened is 11%. Overall, 0.8% of people screened had a HPV positive/high-grade cytology result and 4.8% had a HPV positive/low-grade cytology result. This is in line with internationally published reference ranges.[4]

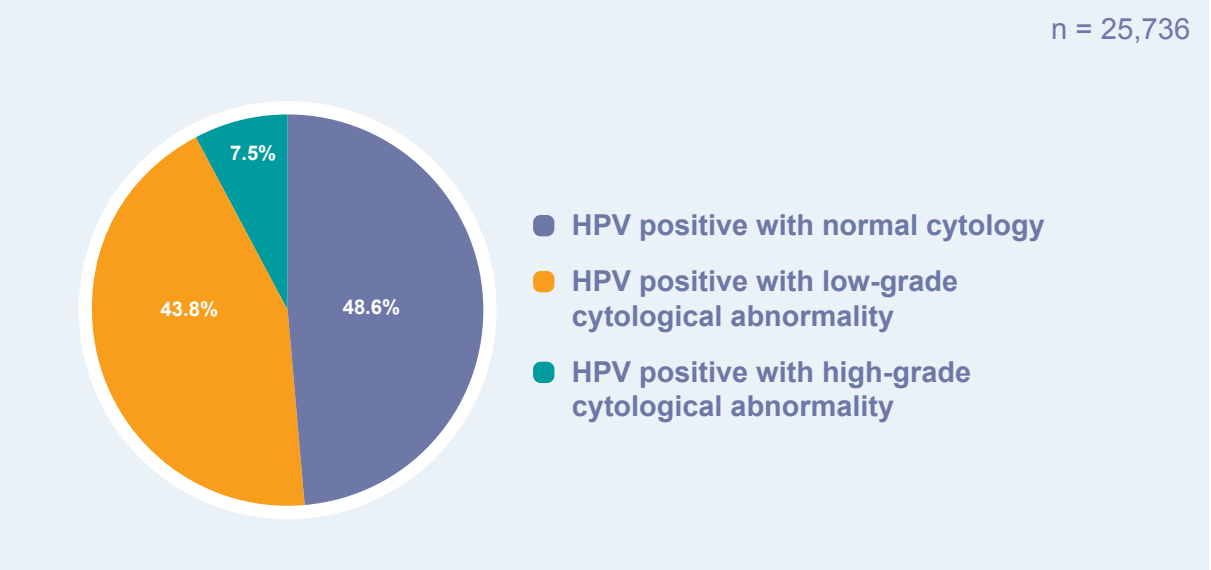
Primary screening

Approximately 49% of women with a HPV positive test result had no cytological abnormalities detected; 43.8% had low-grade abnormalities detected; and 7.5% had high-grade abnormalities detected (Table 5 and Figure 6). We refer women whose reflex cytology test is found to have cytological abnormalities to colposcopy for further examination. Those without cytological abnormalities are recalled for a follow-up HPV screening test 12 months later.

Table 5. Primary screening results* (HPV & cytology) for women aged 25 to 65 years

	2022/2023	
	Number	**% of all primary screening tests**
HPV screening result		
HPV negative**	207,207	89.0%
HPV positive	25,736	11.0%
Total	**232,943**	**100.0%**
Cytology result in HPV positive women		
HPV positive with normal cytology	12,518	5.4%
HPV positive with low-grade cytological abnormality	11,283	4.8%
HPV positive with high-grade cytological abnormality	1,935	0.8%
Total of HPV positive women	**25,736**	**11.0%**

Figure 6. Cytology results in HPV positive women aged 25 to 65 years



Early repeat

Table 6 shows the outcomes for women who had attended for their 12-month follow-up in 2022/23. 88% of women who were advised to attend for a repeat HPV test 12 months after a HPV positive/normal cytology result had attended within 15 months of being invited. For the time period of this report, 46.5% of the repeat HPV tests were negative, which indicated that these women had spontaneously cleared their HPV infection and were advised to return to routine screening. Of the 53.5% of women with persistent HPV infection at 12 months, the reflex cytology showed no evidence of a cytological abnormality in 56.1% of women. There were low-grade cytological abnormalities found in 38.9% of women and high-grade cytological abnormalities found in 4.9% of women.

All women with a persistent HPV infection are referred to colposcopy for further examination if they have two consecutive HPV positive results, regardless of the reflex cytology result.

Table 6. Follow-up screening result* in early repeat cohort at 12 months

	2022/23	
	Number	**%**
HPV negative	7,374	46.5
HPV positive	8,475	53.5
Cytology result in HPV positive women		
HPV positive with high-grade cytology	417	4.9
HPV positive with low-grade cytology	3,300	38.9
HPV positive with negative cytology	4,758	56.1
Total of HPV positive women	**8,475**	

**Excluding unsatisfactory screening tests*

Table 7 shows our rates of referral to colposcopy in the reporting period. In 2022/23, the referral to colposcopy rate was 8.8%. We measure and monitor this referral rate to ensure there is colposcopy capacity available to provide assessment for HPV positive women. In 2022/23, 22,112 women were referred for the first time to colposcopy as a result of an abnormal screening test result.

Table 7. Referral to colposcopy from screening tests

Time period	Number of screening tests performed in primary screening locations resulting in a referral to colposcopy
2022/23	22,112 (8.8%)

Failsafe

Attending screening at the recommended intervals and attending for follow-up assessment and treatment is the most effective way for women of screening age to reduce their risk of developing cervical cancer.

A key component of quality assurance in any screening programme is monitoring the appropriate follow-up of women with abnormal screening test results and women who have been discharged after colposcopic assessment. Screening programmes manage failsafe processes to minimise patients being lost to follow-up.[5] Failsafe actions are designed to ensure that all reasonable steps are taken to ensure women and their clinically responsible doctor receive the results of screening tests and that repeat screening tests or further investigation are offered as appropriate.

Through several failsafe mechanisms we communicate with the woman and her doctor when there is no evidence of action being taken after a recommendation for follow-up. Some examples include:

- when there is no evidence that a recommended repeat screening test (following an inadequate or ‘abnormal’ result) has been taken
- when there is no evidence that a recommended referral to colposcopy has happened
- when a post-colposcopy screening test has not happened when recommended

During the period of this report, we performed 31,536 failsafe processes to remind women and their doctors about screening and follow-up tests (Table 8).

Table 8. Failsafe process examples performed from 1 April 2022 to 31 March 2023

Failsafe type	Definition of failsafe
Awaiting colposcopy update	A referred to colposcopy following an abnormal screening test has been advised and her appointment has not been scheduled.
HPV positive/ normal cytology 12-month repeat	A repeat screening test in 12 months was recommended, and this test has not been taken.
Post colposcopy discharge 12-month repeat	A repeat test in 12 months in primary care was requested by the colposcopy clinic and this test has not been taken.
Discharge DNA	A follow-up test has been recommended (could be primary care or in colposcopy) and woman has not attended
3-month repeat	When test was not processed or inadequate - a recommended repeat test in 3 months has not happened.

Colposcopy activity and outcomes

In 2022/23, 27,479 women attended colposcopy for the first time. Colposcopy is the diagnostic arm of the screening service which enables a more detailed examination of the cervix (Figure 7). The majority (23,449; 85.4%) were referred with a positive HPV test (either a HPV test associated with abnormal cytology or a follow-up HPV test showing persistent HPV at 12 months). The number of women referred for clinical reasons is 14.6% (n=4,030). In addition, over 29,600 women attended colposcopy as return patients. These included women under surveillance for low-grade cell changes, and those having follow-up post-treatment of abnormal pre-cancerous cells.

Figure 7: Number of first and follow-up visits at colposcopy

Year	Number of new visits	Number of follow-up visits	Total
2022/23	27,479	29,603	57,082

New to return ratio

Table 9 details the new to return ratio. This is a measure of the number of follow-up visits generated by each new referral to colposcopy services.

Definition: The number of new patients who attend a service compared to the number of review patients who attend a service. The new to return ratio is expressed by setting out how many review patient attendances occur for each new patient attendance.

Standard: There is no agreed standard for this metric. This is a quality measure that helps ensure that colposcopy capacity is sufficient to meet the needs of the women referred.

Table 9. The new to return ratio

Year	New To Return Ratio
2022/23	1:1.1

Table 10 outlines reasons why women were referred to colposcopy for the first time. In 2022/23, over 85% were referred due an abnormal screening test result and the remainder were referred due to a clinical reason.

Table 10. Reason for a new referral to colposcopy

Referral Reason	Number	Percentage
Abnormal screening test (HPV positive +/-		
cytological abnormality)	23,449	85.3%
Clinical Indication - non urgent	2,481	9.0%
Clinical Indication - urgent	1,549	5.6%
Total	**27,479**	**100%**

Table 11 displays the screening results in patients referred to colposcopy for the first time in 2022/23. The most common screening result in newly referred patients is HPV positive/ low-grade cytology.

Table 11. HPV and cytology results in patients newly referred to colposcopy

Referral Reason	Number	Percentage
Clinical referrals/ screening not done	4,030	14.6%
HPV positive – high-grade cytology	2,599	9.5%
HPV positive – low-grade cytology	14,464	52.6%
Persistent HPV – normal cytology	6,345	23.1%
Unsatisfactory/inadequate sample	41	0.1%
Total	**27,479**	**100%**

Did not attend (DNA) rates for colposcopy services

Table 12 shows the rate of women who did not attend (DNA) their appointment at colposcopy. The target for outpatient DNA rates in HSE clinics is set at 5% to 8% in line with international best practice.[6] Our programme target is <10%. This increased target maintains our focus on reducing DNA rates as we have been consistently achieving the HSE clinical target.

Table 12. Programme Standard 2022-2023

Programme Standard	2022/23	Target
The DNA rate should be maintained at a low level to avoid the loss of women to follow-up and to maximise the efficiency of the colposcopy service	8.6%	<10%

Key points

The DNA rate was within our programme standard for the duration of this reported period.

Waiting times

Table 13 details the percentage of women seen within the programme standard for waiting times for colposcopy. Our programme standards are that women with high-grade cytology should be offered a colposcopy appointment within 4 weeks. Our standards are that over 90% of all women referred should be offered a colposcopy appointment within 8 weeks.

Definition: Colposcopy waiting time is a measure of the interval between the referral letter being received by the colposcopy clinic and the woman attending colposcopy.

Table 13. The percentage of women seen at colposcopy within the programme standard for waiting times 2022 to 2023

Referral Reason	Waiting Time Standard	% women seen within standard
HPV positive/ high-grade cytology	4 weeks	**85.9%**
HPV positive/ low-grade cytology	8 weeks	**74.2%**
HPV positive / normal cytology	8 weeks	**70.1%**
Cytology not recorded/ cytology unsatisfactory	8 weeks	**81.6%**
All referrals to colposcopy	8 weeks	**75.8%**

Histological biopsies

Where an abnormality is suspected at colposcopy, a biopsy is performed to confirm the diagnosis. Biopsies can be diagnostic, which involves sampling a portion of the abnormal area only, or therapeutic which involves excising the abnormal area in its entirety. The abnormal area is usually found on the transformation zone of the cervix.

Table 14 shows the quality of biopsy specimens taken at colposcopy clinic and sent for histological analysis. It shows that we are consistently meeting our programme standard that 95% of biopsies should be suitable for diagnosis. A biopsy should be performed in the presence of an atypical transformation zone in > 90% cases. This table also details the biopsy rates when invasive disease is suspected.

Cervical biopsies combined with colposcopic impression clarify the diagnosis and underpin clinical management. It is reassuring that the quality standard for these biopsies has been consistently met.

Table 14. Percentage of biopsy specimens that are suitable for histological examination and biopsy rates measured against colposcopy standards for 2022 to 2023

Performance parameter	2022/2023	Target
Biopsy specimens should be suitable for histological diagnosis	**98.7%**	**>95%**
A biopsy should be performed in the presence of an atypical transformation zone	**91.9%**	**>90%**
If there is a suspicion of invasive disease a biopsy must be performed.	**91.3%**	**>90%**

Number of biopsies performed at colposcopy

Table 15 details the number of biopsies performed at colposcopy clinics. HPV screening is associated with an increase in colposcopy activity due to an increase in the proportion of low-grade referrals. This is because HPV screening is more sensitive and less specific. An increase in colposcopy referrals is associated with an increase in the number of biopsies.

Table 15. Numbers of biopsies performed at colposcopy clinics

Period	Biopsies at new appointment	Biopsies at follow-up appointment	Total Biopsies	Total attendances at colposcopy
2022/23	**17,515**	**9,820**	**26,415**	**57,082**

Table 16 shows the histology results from histological biopsies taken in colposcopy clinics. Low-grade CIN is usually treated conservatively as it has a high rate of regression (returning to normal with no treatment). High-grade CIN is less likely to regress and is usually treated by excision or ablation.

Table 16. Histology results from histological biopsies taken in colposcopy clinics

	Totals	Histological findings in all samples	Histological findings (non-CIN samples excluded)
No CIN/Normal	4,839	22.7%	
Low-grade CIN	10,660	50.0%	64.6%
High-grade CIN	5,670	26.6%	34.4%
Cancer	162	0.8%	1.0%
Total	21,331	100%	100%

Treatment at colposcopy

Context

All colposcopists working in CervicalCheck clinics are accredited by the British Society of Colposcopy and Cervical Pathology (BSCCP) as per the programme quality assurance standards.[1] The majority of treatments performed at colposcopy clinics are performed to remove pre-cancerous cell abnormalities. Between 6,000 and 7,000 women receive treatment for pre-cancerous abnormalities every year at colposcopy clinics. These women are referred for increased surveillance as they have been identified as being at higher risk of developing further cervical abnormalities in the future. Approximately 10% of these women will require a repeat treatment within 10 years.[7] On average, between 100 and 150 women are diagnosed with cervical cancer in colposcopy clinics each year. Half of the women are diagnosed at stage 1A and are treated by excision of the transformation zone (LLETZ) under local anaesthetic during an outpatient visit colposcopy. The remainder are diagnosed at a higher stage and may need to be referred to gynae oncology services for treatment.

Table 17 shows the rates of women who had treatment performed as outpatients under local anaesthetic in 2022/2023. Approximately 1% of women required a procedure under general anaesthetic for treatment of their pre-cancer or cancer. Some women are recommended to have a risk-reducing simple hysterectomy for persistent pre-cancerous abnormalities. If there is evidence of cancer or persistent high-grade disease, some women are referred for a cone biopsy (wider excision of cervical tissue), trachelectomy (removal of entire cervix) or hysterectomy (removal of the entire uterus and cervix). These treatments are performed in theatre under general anaesthetic.

Table 17. Treatment under local anaesthetic

Performance parameter	2022/2023	Target
The majority of women should have treatment performed as an outpatient under local anaesthetic	**97.2%**	**>90%**

The programme continually monitors patients treated by ablation as well as those treated by cervical excision.[8] There is a body of international literature recommending conservative management of moderate CIN (CIN2).[9]

Table 18 shows the percentages and numbers of treatments performed for patients who attended colposcopy services. Most treatments were performed under local anaesthetic in colposcopy outpatient settings.

Table 18. Numbers of treatments for patients attending colposcopy

Treatments performed	2022/23	% of Total
LLETZ	**5,183**	**78.6%**
Ablation	**1,352**	**20.5%**
Referred for treatment under general anaesthetic		
Hysterectomy	**50**	**0.8%**
Cone biopsy	**12**	**0.2%**
Trachelectomy	**1**	**0.0%**
Total	**6,598**	**100.0%**

Table 19 shows the number of women who underwent treatment at first and follow-up visits to colposcopy. The majority of treatments were performed at follow-up colposcopy appointments. Some women were selected for treatment at first visit. Most appointments were diagnostic visits where a colposcopy with or without a diagnostic biopsy was performed. Treatment was required at 11.6% of visits and the majority of women who attended colposcopy did not require treatment.

Table 19. Number of treatments performed at first and follow-up visits to colposcopy

Treatments performed	2022/23
Total number of colposcopy appointments	**57,082**
Treatments at 1st appointment	**1,403**
Treatments at follow-up appointment	**5,195**
Total number of treatments performed	**6,598**
% of appointments where a treatment was performed - all visits	**11.6%**
% of new appointments where a treatment was performed	**5.1%**
% of follow-up appointments where a treatment was performed	**17.5%**

Treatment by excisional biopsies

Context

Cervical screening involves a balance of risks and benefits. Excisional treatments are less likely to result in treatment failure but are also associated with an increased risk of late miscarriage and preterm birth.[10] In order to minimise the risk of overtreatment, all excisional biopsies are histologically examined to confirm the presence of CIN. An excisional biopsy is the removal of abnormal cervical tissue which usually involves the transformation zone. The programme standard states that >90% of women treated for CIN on the first visit should have evidence of CIN on histological examination of the specimen (Table 20).

Table 20. The rate of CIN in women treated by excisional technique.

Performance parameter	N (%)	Target
Women treated by excisional technique at first visit should have at least CIN1 on histology performed as an outpatient under local anaesthetic	**874 (88.0%)**	**>90%**
Women treated by excisional technique at any visit should have at least CIN1 on histology performed as an outpatient under local anaesthetic	**3,876 (90.4%)**	**>85%**

Treatment on first visit

Context

The majority of women referred to colposcopy clinics do not have evidence of high-grade cervical abnormality or cancer at the time of assessment. Treatment at the first visit is rare – whether they are referred with clinical indications (either urgent or non-urgent) or with an abnormal screening test (HPV positivity +/- abnormal cytology).

Table 21 shows the referral reasons for women treated at their first colposcopy visit. In 2022/23, 5.1% of women were treated at their first visit. To avoid overtreatment, most women will first have a diagnostic biopsy performed to clarify diagnosis.

Table 21. Referral indications for patients treated at first visit 2022/23

Referral reasons for patients treated at first visit	Number of referrals	Number of treatments	% treated	% contribution to overall treatment rate
Abnormal screening test	**23,449**	**1,228**	**5.2%**	**4.5%**
HPV positive - atypical glandular cells	52	16	30.8%	**0.1%**
HPV positive – high-grade cytology	2,547	488	19.2%	**1.8%**
HPV positive – low-grade cytology	14,407	541	3.8%	**2.0%**
Persistent HPV – normal cytology	6,345	178	2.8%	**0.7%**
Inadequate cytology/not recorded	98	5	5.1%	**0.0%**
Clinical indication - non urgent	**2,481**	**108**	**4.4%**	**0.4%**
Clinical indication - urgent	**1,549**	**67**	**4.3%**	**0.2%**
Total	**27,479**	**1,403**	**5.1%**	**5.1%**

Table 22 shows the referral reasons for women treated at any colposcopy visit, as well as the numbers of women treated by referral reason. In 2022/23, 11.6% of women referred to colposcopy required a treatment at any visit.

Table 22. Referral indications for patients treated at any colposcopy visit 2022/23

Initial referral indications for patients treated at any visit	Number of referrals	Number of treatments	% treated within same referral	% contribution to overall treatment rate
Abnormal screening test	**48,819**	**6,063**	**12.4%**	**10.6%**
HPV positive - Atypical glandular cells	301	51	16.9%	**0.1%**
HPV positive - high-grade cytology	9,105	1,932	21.2%	**3.4%**
HPV positive - low-grade cytology	30,641	3,319	10.8%	**5.8%**
Persistent HPV - normal cytology	8,574	741	8.6%	**1.3%**
Inadequate cytology/Not recorded	198	20	10.1%	**0.0%**
Clinical Indication - non urgent	**5,559**	**365**	**6.6%**	**0.6%**
Clinical Indication - urgent	**2,704**	**170**	**6.3%**	**0.3%**
Total	**57,082**	**6,598**	**11.6%**	**11.6%**

Positive predictive value of high-grade cytology

The positive predictive value (PPV) is reported as the percentage of women referred with high-grade cytological abnormality who subsequently have a histological diagnosis of CIN2 or higher confirmed. Cervical screening programmes have to balance the early detection of high-grade abnormalities with the avoidance of unnecessary investigations and possible overtreatment. Internationally accepted performance measures have been developed to correlate referral cytology results with histological outcomes in organised, population-based screening programmes. For example, when the PPV is 78%, this means that for every 100 women who are referred with a HPV positive/ high-grade cytology screening result, approximately 78 will have a histological abnormality found that confirms high-grade CIN lesion or an invasive cancer. The other 22 women will have a biopsy that reveals normal or low-grade CIN which is expected to spontaneously regress and return to normal without intervention. The positive predictive values of high-grade cytology in HPV positive women for 2022/2023 are shown in Table 23.

Table 23. The positive predictive value of a high-grade cytology in HPV positive women

Performance parameter	2022/2023
Correlation between high-grade cytology and histologically proven high-grade CIN	**77.6%**

Positive predictive value of colposcopy

The PPV of colposcopy is the likelihood that a colposcopic impression of high-grade disease will be confirmed on histological biopsy. The correlation between the colposcopic impression and histological diagnosis is a useful marker of the quality of colposcopy. It indicates the likelihood that a colposcopic impression of high-grade disease will be confirmed by histological analysis. Table 24 displays the PPV value of colposcopy for 2022/2023.

Table 24. The positive predictive value of high-grade colposcopy impression

Performance parameter	2022/2023
Correlation between colposcopic impression of high-grade disease and histologically proven high-grade CIN	**59.9%**

Negative predictive value of colposcopy

The international evidence on the negative predictive value of colposcopy demonstrates that the likelihood that a patient with a negative (normal) colposcopy does not have high-grade CIN is 71%. International evidence reveals that up to 6 per 1,000 patients with a negative colposcopy may be subsequently diagnosed with a cervical cancer.[11] False negative colposcopy is a known potential limitation of this diagnostic test.

Referral value

The referral value (RV) correlates referral cytology results with histological outcome and is an important indicator of screening programme performance. It is also useful when planning colposcopy resources. This measure examines the number of women that need to be referred to colposcopy to enable the detection of one case of high-grade CIN or invasive cervical cancer (excludes referrals for inadequate cytology and referrals for clinical reasons). For example, when the RV is 3.0, this means that for every 3 women referred to colposcopy, 1 will have at least CIN2 detected, whereas 2 had either low-grade abnormalities or no abnormalities. Table 25 shows the referral values for 2022/2023.

Table 25. The referral value for colposcopy

Performance parameter	2022/2023
Referral value	**3.54**

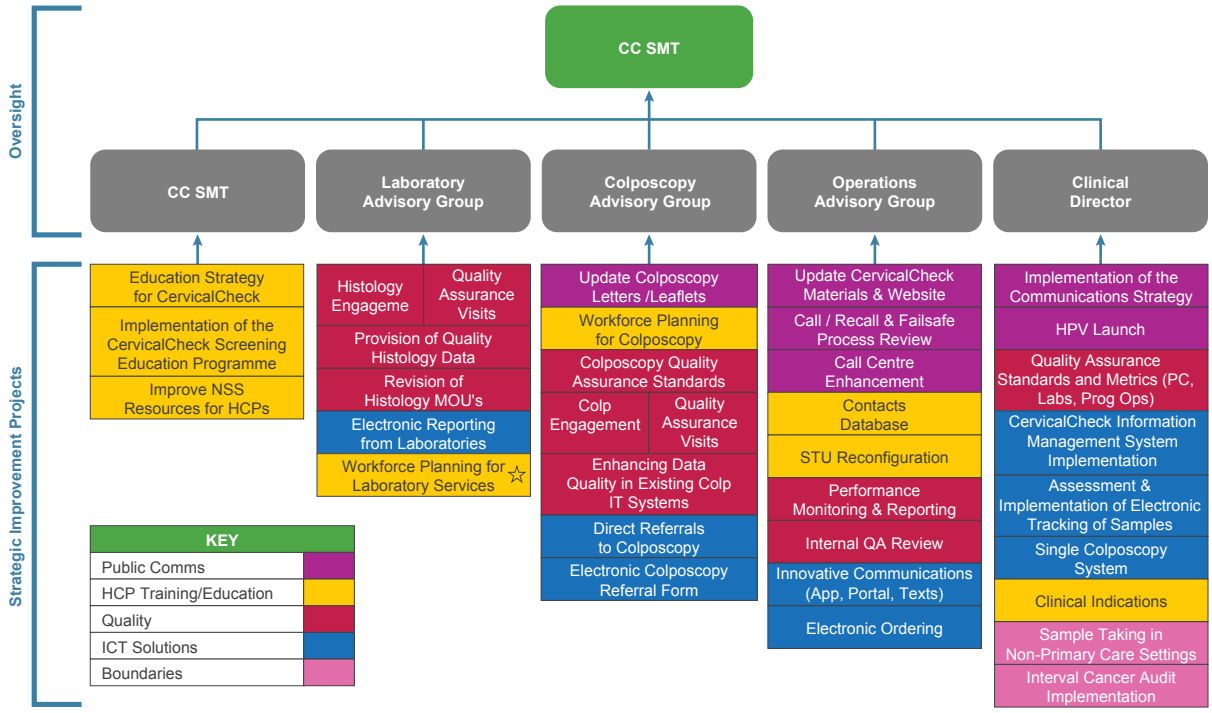
Quality Improvement

The CervicalCheck programme is committed to continuous quality improvement. Quality improvement (QI) is a systematic approach, guided by data, to improve the quality and safety of healthcare. It is particularly important to seek to assure and improve the quality of services if screening is to achieve the intended benefits for population health, while minimising unintended harms to those taking part. Due to the successful completion of QI portfolios between 2020 and 2022, we continued our QI project management approach.

The quality improvement initiatives within our portfolio are the responsibility of clinical and operational managers. Project teams meet regularly, and project managers provide status updates at a monthly project management meeting where risks and issues are addressed, and advice or support given. We had a defined escalation route through the governance structure (outlined below). We gave a quarterly progress report to our Senior Management Team and we informed our CervicalCheck Quality Assurance Committee of progress.

Below is a high-level summary of the CervicalCheck Quality Improvement portfolio and the status of December 2022.

Figure 8. CervicalCheck Project Governance (for approved QI projects). As of December 2022



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