CervicalCheck
AN CLÁR NÁISIÚNTA SCAGTHÁSTÁLA CEIRBHEACS
THE NATIONAL CERVICAL SCREENING PROGRAMME

CervicalCheck Colposcopy Services September 2017-March 2020: A comparative analysis

Programme Evaluation Unit,
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Executive summary

Each year, approximately 290 women are diagnosed with cervical cancer and almost 90 women die of cervical cancer. Almost half of the women in Ireland diagnosed with cervical cancer are aged 45 years or under, and 40% of cervical cancers occur in women who have never participated in screening. Cervical cancer is principally caused by persistent, high-risk human papillomavirus (HPV) infections which cause changes to the cervical cells. If the virus persists in a woman's cervix (neck of the uterus), chronic inflammatory changes in the cells lining the cervix may lead to precancerous changes, known as cervical intraepithelial neoplasia (CIN), and may go on to develop into cancer over time. Fortunately, early changes in these cells can be detected through screening. Referral to colposcopy can lead to investigation and treatment and prevent more serious disease. When women are diagnosed through screening, they have an 80% chance that their cancer will be detected at stage 1. By the time women develop symptoms and present to gynaecology clinics, their cancer is usually stage 2 or higher.

From September 2008 to March 2020, CervicalCheck provided almost 3.2 million cervical screening tests. Since 2008, 64,110 cases of high-grade pre-cancerous cells (CIN2 and CIN3) and 60,650 cases of low-grade pre-cancerous cells (CIN1) have been identified[1].

During the time frame of this report, 59,182 biopsies were performed consisting of 47,509 diagnostic and 11,691 excisional LLETZ biopsies. Many of these women could have developed cervical cancer if the abnormalities were not detected and treated through cervical screening. In the absence of screening, cervical cancer would not have been detected in these women until they developed physical signs or symptoms of disease. In addition, 1,786 cases of asymptomatic cancer have been detected by the CervicalCheck programme[1]. Since CervicalCheck started in 2008, the number of women who developed cervical cancer decreased by 7% year-on-year from 2010-2015. More recent data shows that the decreasing incidence has been sustained as the programme matures, with a 2.8% annual percentage decrease from 2010-2018[2].

Colposcopy clinics aim to see 90% of new referrals within 8 weeks. This was achieved in 2017/2018 (93%) but not met in 2018/2019 (59.4%) and 2019/2020 (69.6%). The reasons for this are detailed in the annual report[1].

Introduction

The provision of quality-assured colposcopy services with timely access to diagnosis and treatment for women is a key priority for the CervicalCheck programme.

This document presents a comparison between the services using indices relating to access, management of default and diagnostic and treatment indices. It provides an in-depth picture of the quality of CervicalCheck colposcopy services from the tenth to the 12th year of the programme. Additional data for the first nine years are also presented, which is helpful in looking at trends. It is also very important to note that Year 12 is not a complete 12 months; it covers the 7-month period 1 September 2019 to 31 March 2020 which coincided with the end of primary cytology screening. Caution is advised when making comparisons with previous years.

The analysis is based on meeting the standards outlined in the second edition of the Standards for Quality Assurance in Cervical screening[3]. This analysis aims to assess colposcopy units in line with the programme standards, and compare units with each other, a quality improvement exercise to improve the service provided to women.

1.Appointment times and programme key performance metrics

One of the key achievements of the CervicalCheck programme has been the provision of timely access to colposcopy for women. The programme Quality Assurance Standards state that 90% of women with high-grade cytological abnormalities should be offered an appointment for colposcopy within four weeks of receipt of referral and 90% of all women with low-grade cytological abnormalities should be offered an appointment within eight weeks of receipt of referral.

For the period 1 September 2017 to 31 March 2020, information on waiting times was available for 56,647 of the 56,806 new attendances. Table 1 shows the percentage of women offered appointments within target time for different cytology results within each service.

Standard 6-1	Waiting times	Target
	Women referred to colposcopy should be offered a timely appointment following receipt of referral.	**> 90%**
	• Women with a clinical suspicion of invasive cancer or adenocarcinoma in situ	**within 2 weeks**
	• Women with a smear test suggestive of CIN2 or CIN3 (HSIL)	**within 4 weeks**
	• All other women	**within 8 weeks**

TABLE 1 PERCENTAGE OF NEW WOMEN OFFERED APPOINTMENTS WITHIN TARGET TIME FOR DIFFERENT CYTOLOGY RESULTS FROM 1 SEPTEMBER 2017 TO 31 MARCH 2020

Service	All women referred to colposcopy – new appointments Sep'17 To Aug'18	All women referred to colposcopy – new appointments Sep'18 to Aug'19	All women referred to colposcopy – new appointments Sep'19 To Mar'20
Target	**>90% of women offered appointment within 8 weeks**	**>90% of women offered appointment within 8 weeks**	**>90% of women offered appointment within 8 weeks**
National Totals	**93.3%**	**59.4%**	**69.6%**
Clonmel	100.0%	86.6%	76.2%
Coombe	82.9%	30.4%	44.6%
Cork	98.6%	40.6%	49.1%
Dundalk	99.3%	68.5%	89.4%
Galway	98.4%	69.7%	74.6%
Letterkenny	98.1%	87.1%	99.2%
Limerick	95.2%	48.5%	45.9%
NMH	97.9%	64.8%	98.5%
Rotunda	99.3%	65.6%	75.6%
Sligo	97.2%	36.2%	48.3%
Tallaght	94.1%	67.3%	97.8%
Tralee	98.7%	96.2%	98.4%
Waterford	98.1%	80.4%	83.4%
Wexford	97.5%	33.0%	30.9%

2.Diagnosis and treatment

Colposcopy plays a key role in the diagnosis and treatment of women with abnormal screening test results. Where an abnormality is suspected, it is good practice to perform a biopsy to confirm the diagnosis. There are two main types of biopsy performed – a diagnostic biopsy, which involves sampling a portion of the abnormal area only, and an excisional biopsy which removes the abnormal area in its entirety.

Standard 6-6a	Biopsy A biopsy should be performed in the presence of an abnormal Transformation Zone (TZ).	Target >90%

BIOPSY RATES BY COLPOSCOPY SERVICE AGAINST STANDARDS FROM 1 SEPTEMBER 2017 TO 31 MARCH 2020

During the time frame of this report, 59,182 biopsies were performed consisting of 47,509 diagnostic and 11,691 excisional LLETZ biopsies. The initial colposcopy visit determines the presence or absence of an atypical Transformation Zone (TZ) for women referred with an abnormal smear test result.

Biopsies Performed	Oct 2017-Sep 2018	Oct 2018-Sep 2019	Oct 2019 - Mar 2020*	Totals
Diagnostic	16,715	19,039	11,755	**47,509**
Excisional	4,631	4,398	2,662	**11,691**
Totals	**21,346**	**23,419**	**14,417**	**59,182**

FIGURE 1 BIOPSIES PERFORMED IN THE PRESENCE OF AN ABNORMAL TRANSFORMATION ZONE (STANDARD 6-6A1) FOR YEAR 10

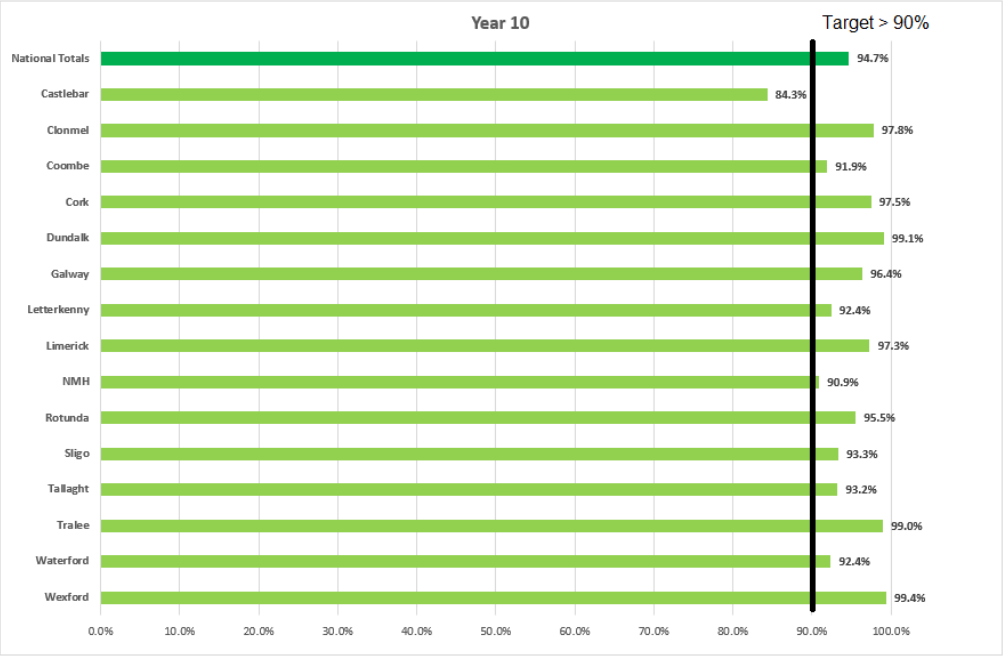


FIGURE 2 BIOPSIES PERFORMED IN THE PRESENCE OF AN ABNORMAL TRANSFORMATION ZONE (STANDARD 6-6A1) FOR YEAR 11

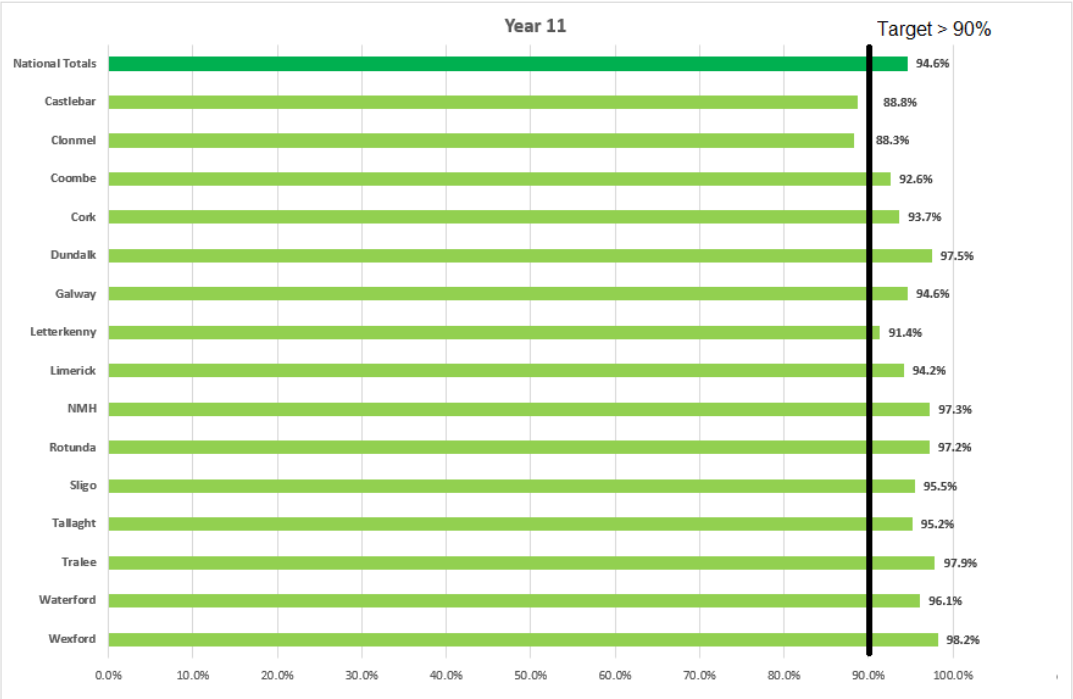
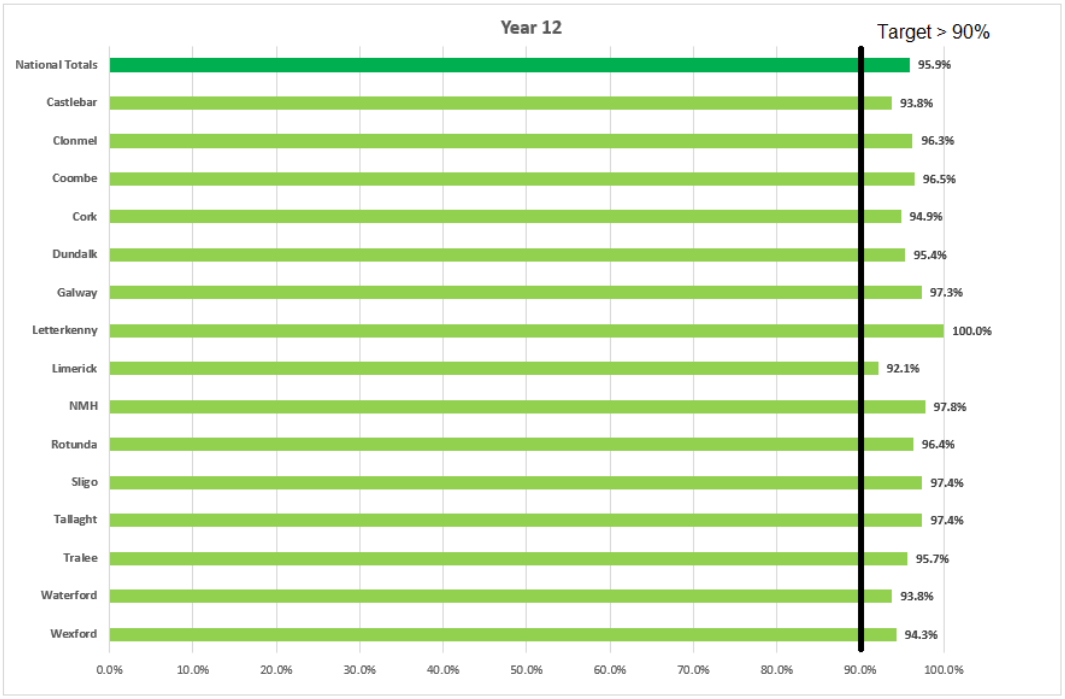


FIGURE 3 BIOPSIES PERFORMED IN THE PRESENCE OF AN ABNORMAL TRANSFORMATION ZONE (STANDARD 6-6A1) FOR YEAR 12



3. Treatment of cancer precursors at colposcopy

Effective treatment of cancer precursors such as high-grade CIN and adenocarcinoma in situ, with subsequent reduction of the risk of invasive cancer, is vital to the success of any cervical screening programme. Treatments should be effective, safe and acceptable and should aim to eradicate all identifiable cancer precursors from the cervix.

Standard 6-9[3] requires treatment performed as an outpatient under local anaesthetic at least 90% of the time. During the 12th year of the programme, outpatient treatments under local anaesthetic were recorded 98% of the time. In the 3 years 2017-2020, all colposcopy services reached this standard (Figure 2).

It is important to acknowledge that some units offering cold coagulation do not mandate that women must have local anaesthetic administered prior to treatment. It is unclear if all treatments that occur for patients diagnosed in colposcopy, but treated surgically by the Gynaecology teams, are captured in this data. The recording of this data will be reviewed for subsequent reports.

Standard 6-9	The majority of women should have treatment performed as an outpatient under local anaesthesia.	Target ≥90%

FIGURE 4 PERCENTAGE OF TREATMENTS PERFORMED UNDER LOCAL ANAESTHETIC BY COLPOSCOPY SERVICE FOR YEAR 10

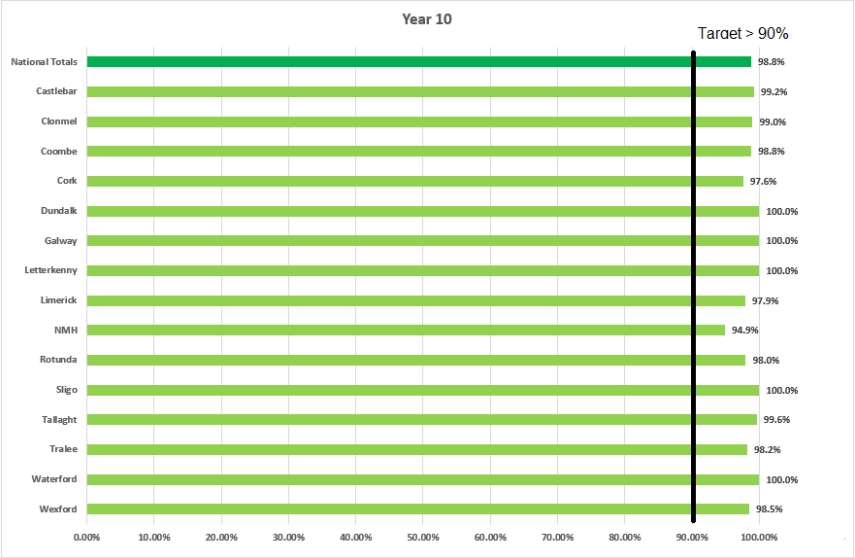


FIGURE 5 PERCENTAGE OF TREATMENTS PERFORMED UNDER LOCAL ANAESTHETIC BY COLPOSCOPY SERVICE FOR YEAR 11

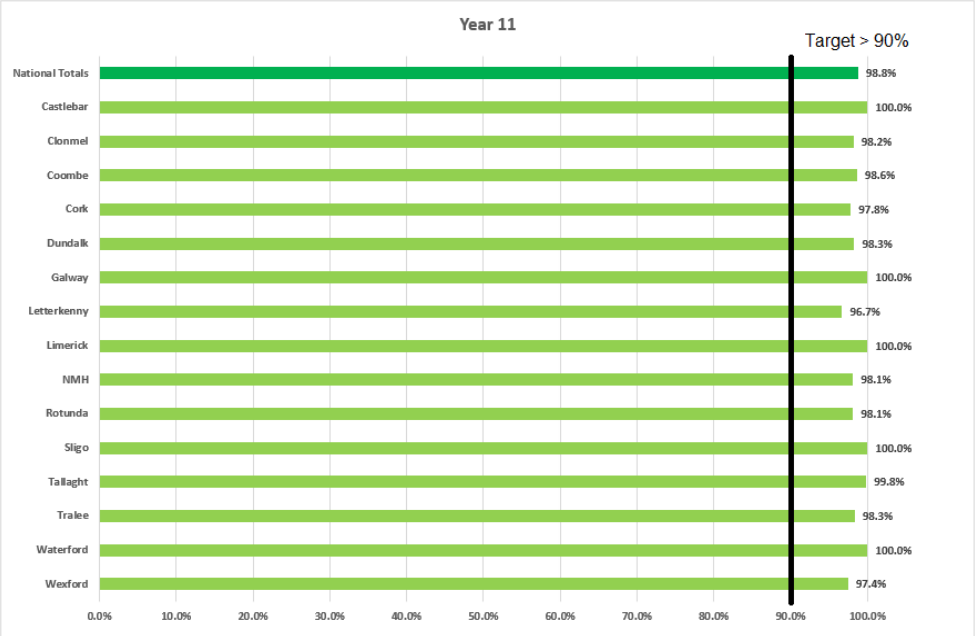
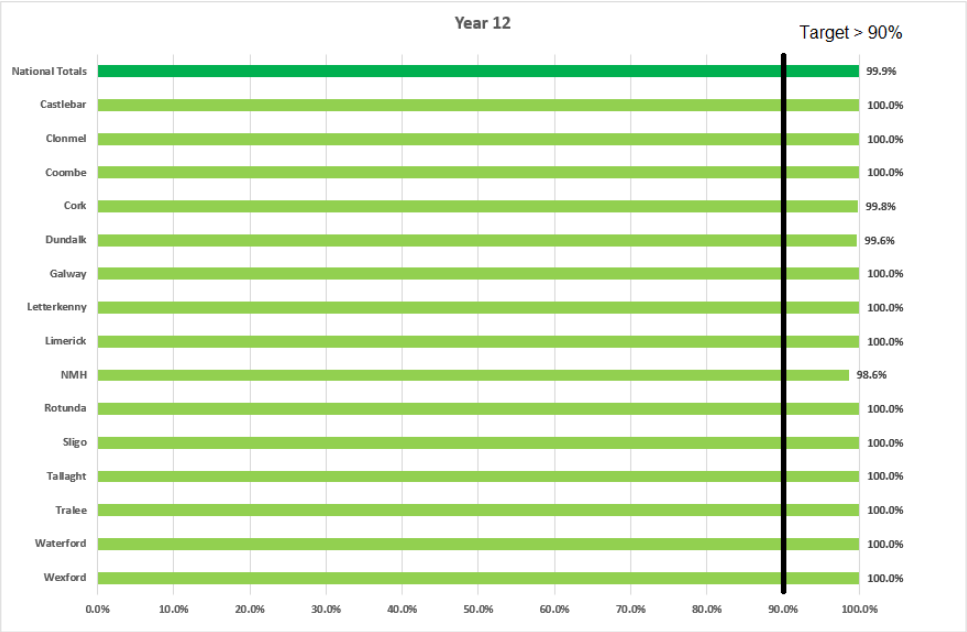


FIGURE 6 PERCENTAGE OF TREATMENTS PERFORMED UNDER LOCAL ANAESTHETIC BY COLPOSCOPY SERVICE FOR YEAR 12



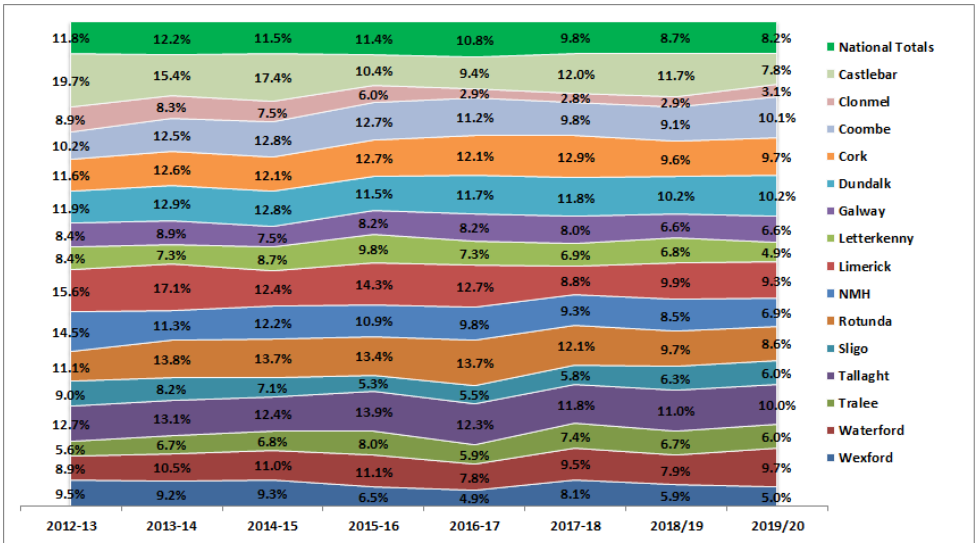
4. Attendance at colposcopy

Between 1 September 2017 and 31 March 2020, 56,806 women attended colposcopy for the first time and there were 85,191 follow-up appointments, a new to follow-up ratio of 1:1.5.

The rate of defaulted appointments where no prior notice is given (DNA) should be kept to a minimum and below 10% (Standard 6-2[3]. Figure 7 shows the overall DNA rate of CervicalCheck within clinics since the fifth year of the programme.

Standard 6-2	Women who default	Target
	The percentage of women who do not attend and who do not notify the colposcopy service should be maintained at a low level to maximise the efficiency of the colposcopy service and to avoid the loss of women to follow-up.	<10%

FIGURE 7 THE VARIATION IN OVERALL DEFAULT RATE BY SERVICE SINCE THE FIFTH YEAR OF CERVICALCHECK – 1 SEPTEMBER 2012 TO 31 MARCH 2020*



***Target 2012-13: <15%; 2013-20: <10%**

The average number of women referred to colposcopy annually between 2012 and 2017 was 16,632 new referrals. This increased to 20,357 new referrals in 2017/2018 and 22,915 in 2018/2019. The majority of the increase was due to an increase in referrals for clinical reasons (post coital and intermenstrual vaginal bleeding, suspicious cervix etc). The overall number of referrals for clinical indications increased from 5,500 per annum in 2012-2017 to approximately 10,500 per annum in 2018/2019. (Reference annual report ref 1)

5. Avoiding overtreatment

One of the guiding principles of screening is the avoidance of overtreatment. This is of particular relevance to cervical screening because of the potential adverse effects of multiple LLETZ treatments on the risk of late miscarriage and preterm birth.

Standard 6-8b	When to treat	Target
	Treatment at the first visit to colposcopy should not be performed on women who present with low grade cytological change (even if there is a colposcopic suspicion of high-grade disease) except in special circumstances.	<10%

FIGURE 8 WOMEN WHO PRESENTED WITH LOW-GRADE CYTOLOGY AND WERE TREATED AT THE FIRST VISIT BY SERVICE DURING THE TWELVE YEARS OF THE PROGRAMME †

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Target
National Totals	**6.9%**	**6.7%**	**4.5%**	**4.1%**	**2.9%**	**2.9%**	**1.9%**	**1.9%**	**3.3%**	**4.0%**	**4.2%**	**4.2%**	**10.0%**
Castlebar	1.7%	1.3%	3.2%	8.9%	0.8%	4.3%	3.7%	16.0%	10.8%	11.9%	11.8%	7.4%	10.0%
Clonmel	3.1%	2.6%	3.3%	2.3%	4.1%	2.3%	0.0%	0.7%	7.1%	3.6%	4.4%	3.3%	10.0%
Coombe	0.2%	10.8%	4.4%	2.8%	7.8%	7.8%	6.0%	4.3%	6.3%	5.1%	9.3%	9.4%	10.0%
Cork	4.2%	0.2%	4.1%	2.4%	1.1%	0.0%	0.0%	0.7%	5.4%	4.5%	5.9%	6.9%	10.0%
Dundalk	6.1%	3.9%	0.4%	0.0%	1.5%	0.5%	0.9%	0.0%	0.0%	0.3%	1.2%	0.3%	10.0%
Galway	12.8%	14.4%	9.2%	7.8%	6.1%	4.5%	5.3%	4.8%	1.7%	1.5%	1.7%	0.5%	10.0%
Letterkenny	0.2%	6.0%	0.4%	0.0%	0.0%	0.0%	1.2%	0.6%	6.0%	4.2%	3.3%	3.7%	10.0%
Limerick	14.6%	12.8%	4.7%	4.0%	0.6%	0.5%	1.2%	1.2%	1.6%	5.4%	5.2%	4.6%	10.0%
NMH	1.5%	3.0%	1.1%	1.5%	1.1%	1.7%	1.4%	1.3%	1.5%	2.9%	1.6%	1.6%	10.0%
Rotunda	14.2%	7.3%	2.6%	3.0%	4.4%	3.1%	0.7%	0.5%	0.7%	3.9%	2.3%	2.7%	10.0%
Sligo	20.3%	27.1%	1.8%	1.7%	0.7%	1.7%	0.0%	0.0%	2.5%	3.9%	2.4%	3.3%	10.0%
Tallaght	3.0%	5.1%	3.0%	1.3%	3.3%	2.2%	1.3%	1.4%	3.1%	4.9%	2.4%	1.9%	10.0%
Tralee	15.3%	0.2%	8.9%	9.7%	0.0%	0.0%	0.0%	0.5%	7.3%	7.6%	7.0%	11.1%	10.0%
Waterford	4.9%	6.0%	2.2%	3.1%	2.1%	2.4%	0.4%	0.5%	2.5%	1.1%	0.9%	0.7%	10.0%
Wexford	7.0%	11.6%	6.6%	1.9%	2.9%	5.4%	3.2%	1.0%	4.8%	5.6%	9.2%	7.0%	10.0%

Most women treated by excisional techniques should have histologically proven CIN detected on the excised specimen. This is particularly true for treatments carried out at the first visit to colposcopy.

Standard 6-11a[3]states that over 90% of women treated by excisional technique at first visit should have CIN on histology.

Standard 6-11a	Results	Target
	Women treated by excisional technique at first visit should have CIN on histology.	**>90%**
Standard 6-11b	Women treated by excisional techniques should have CIN on histology.	>85%

Continued focus on the selection of women for treatment at the first visit to colposcopy should allow the services that did not meet the target to meet this target in the future. This report enables the programme and individual units to explore this data more fully. It also ensures that the programme works closely with units to ensure that they meet the programme standards and address any resources that are required to do so.

FIGURE 9 PERCENTAGE OF WOMEN TREATED BY EXCISIONAL TREATMENTS AT FIRST VISIT WHO HAD CIN ON HISTOLOGY FOR YEARS 10, 11 AND 12 OF THE CERVICALCHECK PROGRAMME

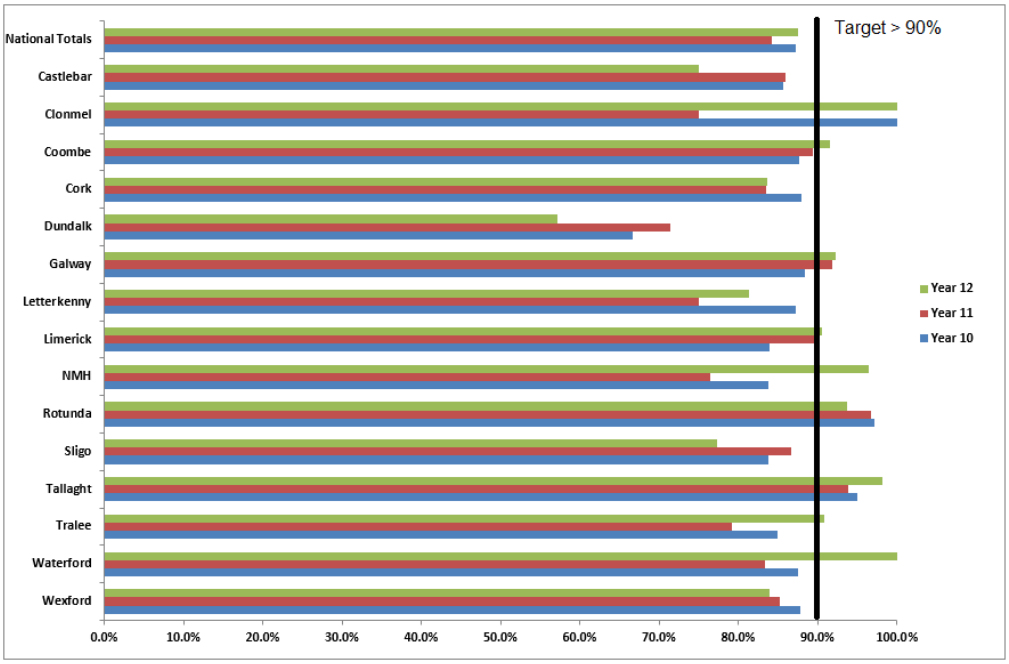


FIGURE 10 PERCENTAGE OF WOMEN AGED LESS THAN 40 TREATED BY EXCISIONAL TREATMENTS AT ANY VISIT WHO HAD CIN ON HISTOLOGY FOR YEARS 10,11 & 12 OF THE CERVICALCHECK PROGRAMME

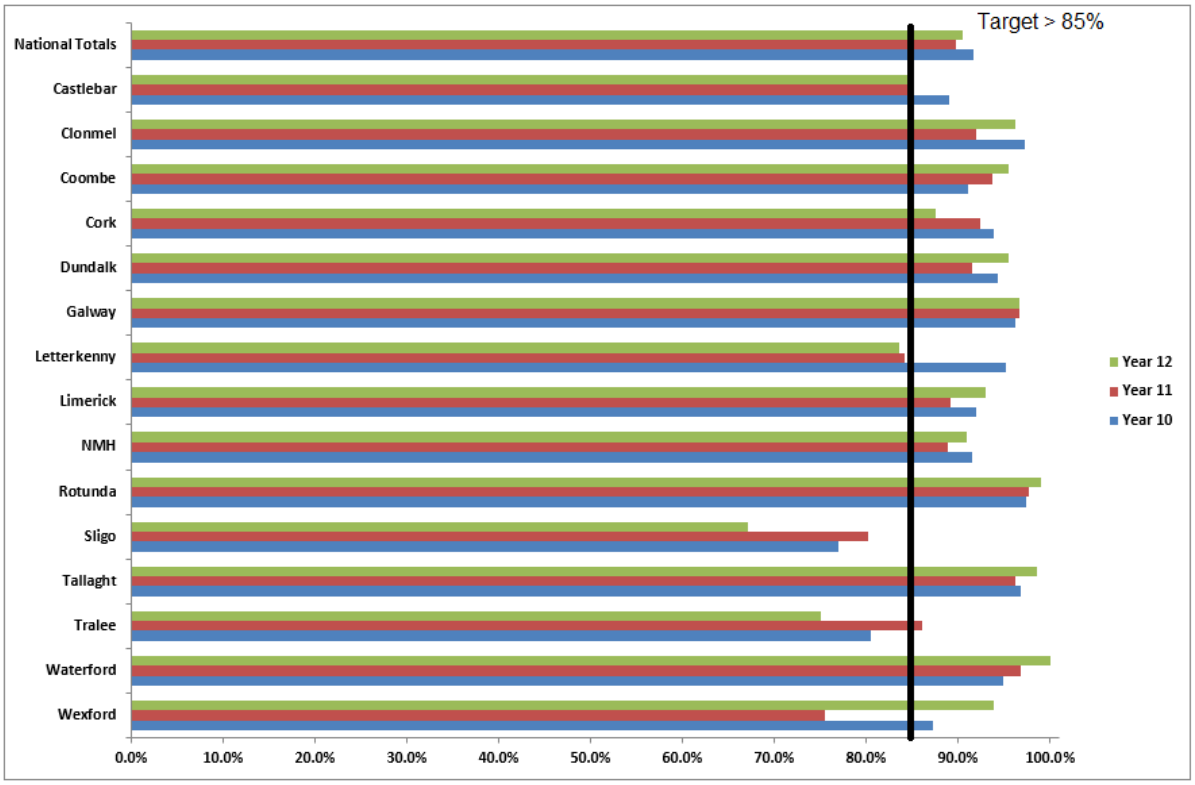
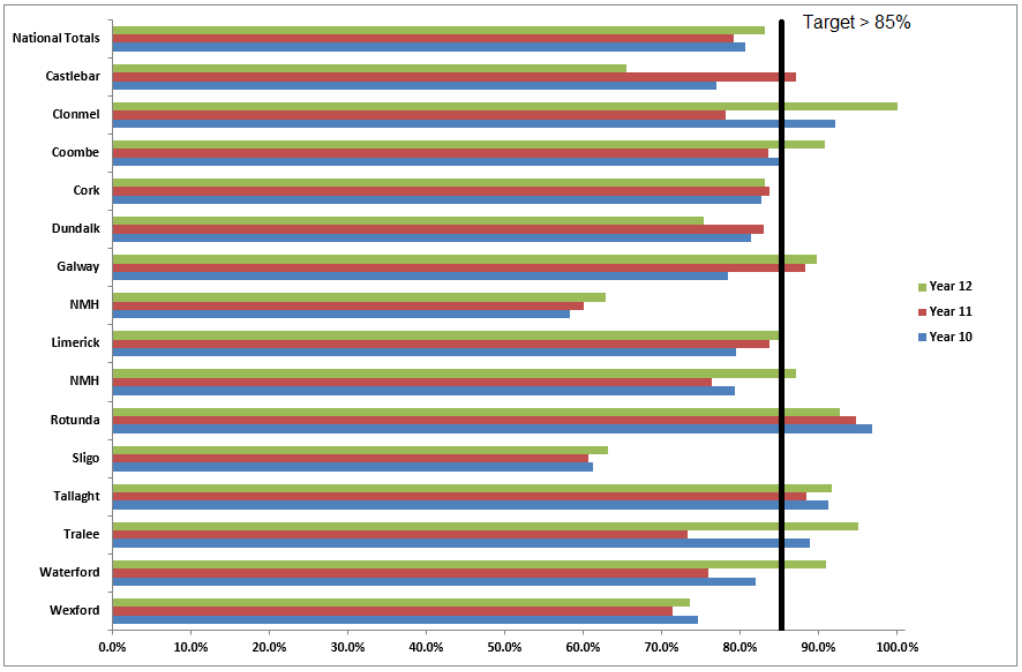


FIGURE 11 PERCENTAGE OF WOMEN AGED 40 AND OVER TREATED BY EXCISIONAL TREATMENTS AT ANY VISIT WHO HAD CIN ON HISTOLOGY FOR YEARS 10,11 & 12 OF THE CERVICALCHECK PROGRAMME



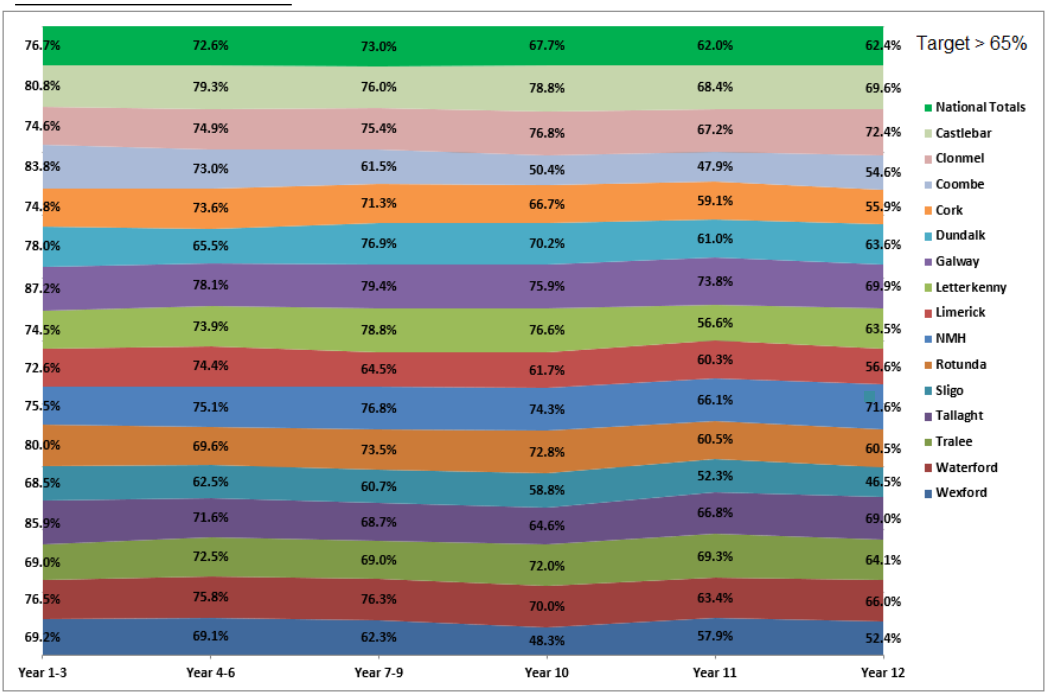
6.The positive predictive value of colposcopy

The correlation between the colposcopic impression and histological diagnosis is a useful marker of the quality of colposcopy.

During the twelfth year of the programme, the overall positive predictive value (PPV) of compliance between colposcopic impression of high-grade disease and histologically proven high-grade CIN was 62.4%, in year 11 it was 62.0% and in year 10 it was 67.7%. Year 11 and year 12 have fallen below the agreed standard of >65% (Standard 6-5). Figure 12 shows how PPV has changed since the start of the programme.

Standard 6-5	Positive predictive value	Target
	Compliance between colposcopic impression of high grade disease and histologically proven high grade CIN	**>65%**

FIGURE 12 POSITIVE PREDICTIVE VALUE (PPV) FOR COLPOSCOPIC IMPRESSION OF HIGH-GRADE DISEASES BY SERVICE FOR THE TWELVE YEARSOF THE PROGRAMME



Average percentage for Years 1-3 combined, Years 4-6 combined, and Years 7-9 combined

The programme does not collect data on the negative predictive value of colposcopy and there is no programme standards to measure against. This may an interesting audit area for individual units to look at to establish how predictive is a negative colposcopy for the non-development of HG CIN or higher in the future.

7. Conclusion

The quality of colposcopy services is fundamental to the success of any cervical screening programme. The hard work and commitment of 15 dedicated multi-disciplinary teams are reflected in the results presented in this document.

CervicalCheck began using HPV testing in colposcopy clinics in 2012. It was introduced initially for post-treatment women (test of cure) in and subsequently from 2014 for women with persistent low-grade abnormalities (management of uncertainty). The programme introduced HPV reflex testing of low-grade abnormalities for screened women (HPV triage) in May 2015. The colposcopy services accommodated the increase in referrals for HPV-triage positive women, while continuing to offer appointments to referred women within short target times. They also continued to manage women attending both first and follow-up appointments in accordance with the quality standards for the colposcopy services.

Cervical screening in Ireland came under scrutiny in 2018 when it emerged that women with cervical cancer were not given the results of a cytology slide audit done as part of a quality assurance process. This resulted in a government offer of a free, out-of-programme screening test for all eligible women. Around 100,000 women availed of this offer. The volume of out-of-programme screening tests taken a short timeframe put intense pressure on existing service capacity. It led to long delays in all women receiving their results.

By presenting these annual figures in one combined report, we aim to provide as complete a picture as possible of women's experience of waiting for results during this time, and the continued and valued contribution of our colposcopists in improving the health of our population. CervicalCheck is proud of the achievements of the services to date in the provision of quality-assured colposcopy services, and looks forward to building continued and sustained improvements in the future.

Further details about the impact of the 2018 events can be found in the annual report[1]. The period that this report covers brings us to the end of cytology screening in Ireland in March 2020. Primary HPV screening was introduced in March 2020 and data from the new programme will be presented in the next edition of this report.

References

1. CervicalCheck Programme Report September 2017-March 2020, National Screening Service, 2022.
2. Cancer in Ireland 1994 – 2019: Annual report of the National Cancer Registry, National Cancer Registry of Ireland, 2019
3. Standards for Quality Assurance in Colposcopy, National Screening Service, 2021