

Programme Report  
**2014/2015**



# Contents

|                                          |    |
|------------------------------------------|----|
| Summary points                           | 2  |
| Introduction to the statistics 2014/2015 | 3  |
| <hr/>                                    |    |
| Part 1 – Cervical screening activity     | 3  |
| Programme coverage                       | 4  |
| Laboratory turnaround time               | 7  |
| Notification of results to women         | 7  |
| Cytology                                 | 8  |
| Referral to colposcopy                   | 9  |
| Cytology correlation measures            | 9  |
| <hr/>                                    |    |
| Part 2 – Diagnosis and treatment         | 10 |
| Reasons for referral                     | 12 |
| Waiting times for appointments           | 14 |
| Biopsy rate                              | 15 |
| Treatment at colposcopy                  | 16 |
| Colposcopy correlation measure           | 19 |
| Histology                                | 19 |
| <hr/>                                    |    |
| References                               | 22 |
| <hr/>                                    |    |

## Summary points

- Coverage in the 5-year period to the end of August 2015 increased to 78.7% of the target population of women aged 25 to 60 years of age (from 77% at the end of August 2014). The objective of the programme for coverage over five years remains at 80%.
- There was a decline in the number of women who received a letter notifying that the result of their smear test was available within four weeks of the smear test date (69.3%). Temporary resource shortages in programme laboratories and the programme office were the contributing factors.
- Five per cent (13,069 women) of the smear test results for non-colposcopy smear tests, (principally taken in the primary care setting) received a recommendation of referral to colposcopy.
- 16,549 new women were referred to and attended colposcopy for all reasons (abnormal cytology results and clinical indication), an increase compared to the previous year. However, the planned downward trend in the number of women attending for follow-up visits in colposcopy services continued. This reduction is a result of the successful introduction of HPV testing in combination with cytology to identify women at low-risk of high-grade CIN who are suitable for discharge earlier than would have been the case before the introduction of HPV testing.
- During the year, the targets for waiting times for appointments in colposcopy continued to be exceeded for all categories of referrals: clinical indication – urgent, clinical indication – non-urgent, high grade cytology and low grade cytology.
- The biopsy rates in colposcopy further increased relative to previous years, for both first appointments and all appointments.
- Treatments were performed in colposcopy services as an outpatient procedure under local anaesthetic in 97% of cases, well ahead of the target of 90%.
- Treatment at the first visit for women who presented with low-grade abnormalities was carried out in 1.9% of cases, well below the target which is to maintain treatment at the first visit for low-grade abnormalities below 10%.
- 95% of women treated at the first visit to colposcopy had CIN detected histologically (the standard is 90%). In addition, 91.7% of women who had an excisional treatment at any visit had CIN detected histologically (the standard is 85%).
- During the year the positive predictive value (PPV) of a colposcopic impression of high-grade disease was 75%, appreciably in excess of the programme's standard of >65%.
- 7,649 cases of high grade CIN (CIN2, CIN3 or AIS) were histology-detected, a further increase on the annual count to date for the programme. There were 6,492 cases of low grade CIN, also significantly higher than for the previous year and 5,134 cases with no CIN, a reduction relative to the previous year.
- For cytology-histology correlation, the positive predictive value (PPV) - measured as the percentage of women referred with high-grade cytological abnormality who have a histological diagnosis of CIN2 or higher - was 81.6%. The referral value (RV) - measured as the number of women referred to colposcopy for the detection of one case of CIN2 or higher - was 2.18.

# Introduction to the statistics 2014/2015

CervicalCheck - The National Cervical Screening Programme has been in operation since 1 September 2008. The figures reported in this section relate to the seventh year of the programme (1 September 2014 to 31 August 2015). During the reporting period a combination of "invitation / re-call" and "direct entry" was in operation. Women whose details were on the Cervical Screening Register could check their next smear test due date using an on-line facility on the CervicalCheck website. A separate facility is also available to health professionals for this purpose.

Quality assurance underpins every aspect of the CervicalCheck programme and programme performance is measured against key performance indicators (KPIs) as outlined in the Guidelines for Quality Assurance in Cervical Screening (Second Edition 2013)<sup>1</sup>.

## Part 1 – Cervical screening activity

The data in this section of the annual report is obtained from the Cervical Screening Register. The response to the programme was very positive with 281,928 women attending for a smear test in all locations (primary care and secondary care). Table 1 shows the number of women who had a smear test by age group. Women between the ages of 25 and 60 are invited for screening, but a small number of women under the age of 25 may attend under specific circumstances. Those women aged 61 or over include women presenting for the first time as well as those who first attended for a smear test before the age of 61 and who did not have the second successive normal result before the age of 61 which is required to exit the programme.

Table 1: Number of women who had a smear test (all locations) by age group

| Age group    | Number of women who had a smear test | %          |
|--------------|--------------------------------------|------------|
| <25*         | 798                                  | 0.3        |
| 25-29        | 48,251                               | 17.1       |
| 30-34        | 53,414                               | 18.9       |
| 35-39        | 53,293                               | 18.9       |
| 40-44        | 47,863                               | 17.0       |
| 45-49        | 32,314                               | 11.5       |
| 50-54        | 20,251                               | 7.2        |
| 55-59        | 13,920                               | 4.9        |
| 60           | 2,186                                | 0.8        |
| >=61         | 9,638                                | 3.4        |
| <b>Total</b> | <b>281,928</b>                       | <b>100</b> |

\* Based on evidence to date, there is no additional public health benefit in starting population screening below the age of 25. Screening in women under the age of 25 may lead to many women receiving unnecessary treatment for lesions that would never have developed into invasive cancer. Certain exemptions apply where some women over the age of 60 and under the age of 25 are considered eligible. Such exemptions may include women of any age who are post-colposcopy, women over the age of 60 who have never had a smear test and women aged 20 and over who are on renal dialysis, have HIV infection, are post organ transplant or who have had a previous abnormal smear test result and are within the recommended follow-up period.

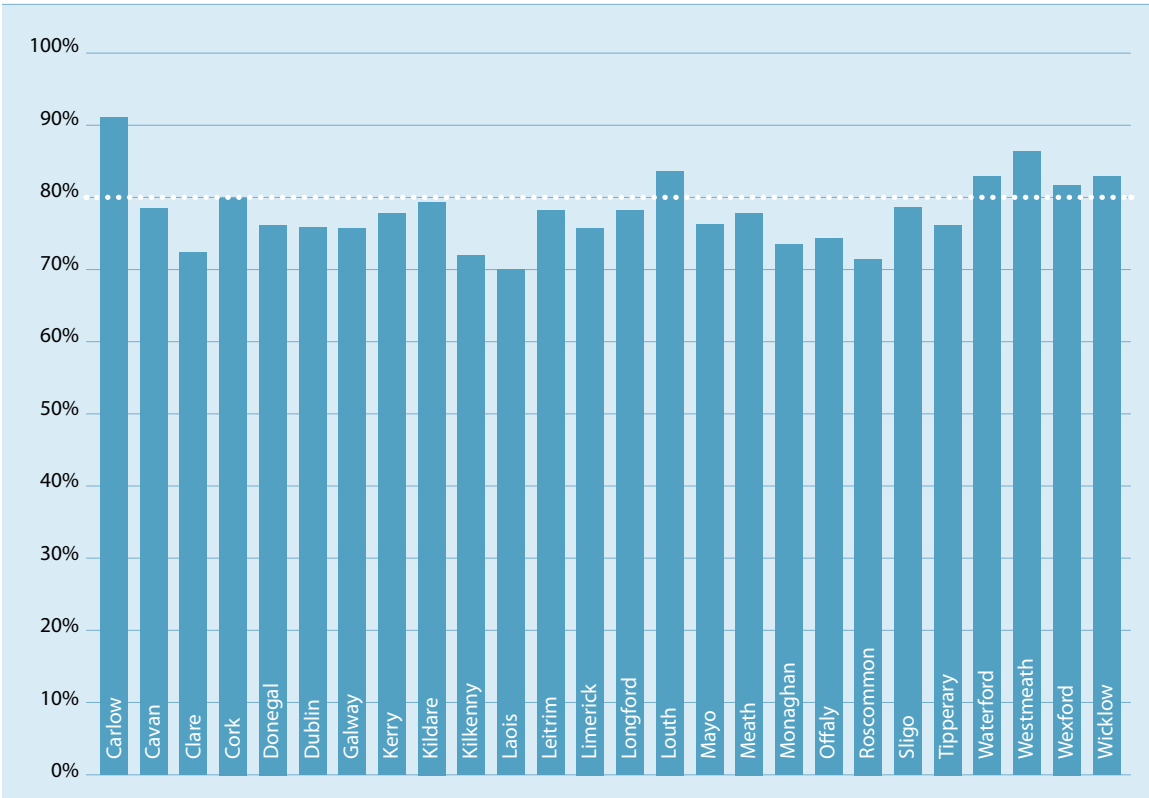
In the seventh year of the programme, most women (89.8 per cent) had their smear tests in a primary care setting with 93.6 per cent of these women attending a GP practice. For the remainder of women, the smear test occurred in a colposcopy clinic, gynaecology service or STI/GUM clinic.

## Programme coverage

Coverage, a key performance indicator for the programme, is a measure of the proportion of the eligible population screened within a period and indicates the effectiveness of the screening programme in reaching the target population. Coverage is measured by five-year screening round. The five-year coverage at the end of the reporting period (31 August 2015) was 78.7 per cent. This figure is adjusted for those women who have had a total hysterectomy and therefore do not form part of the target population for cervical screening. This rate reflects the continued increase in coverage over the first seven years as the programme approaches its goal of 80 per cent coverage over a five-year period.

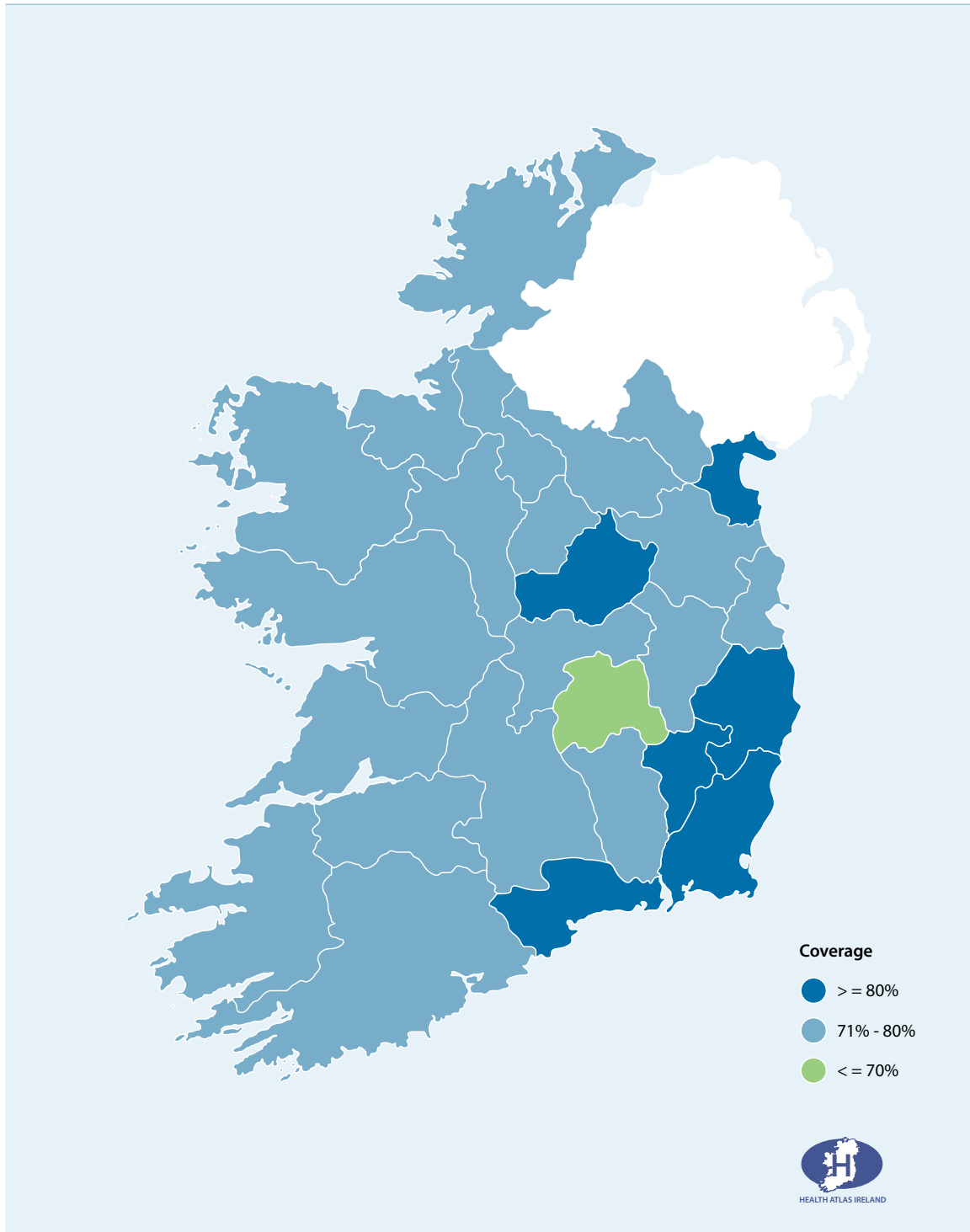
The geographical spread of screening coverage based on the eligible population of each county is shown in Figures 1 and 2. Six counties achieved the target of 80 per cent coverage over the five-year period and two of those counties achieved higher than 85 per cent during this time. Only one county had coverage below 70 per cent. Efforts continue to be made to improve coverage in counties where it is lower than the national average.

Figure 1: Five-year coverage (%) based on county of residence\* for period ending 31 August 2015



\* Population based on CSO 2011<sup>2</sup> figures projected to 2013, not adjusted for hysterectomy (hysterectomy data is not available by geographic location)

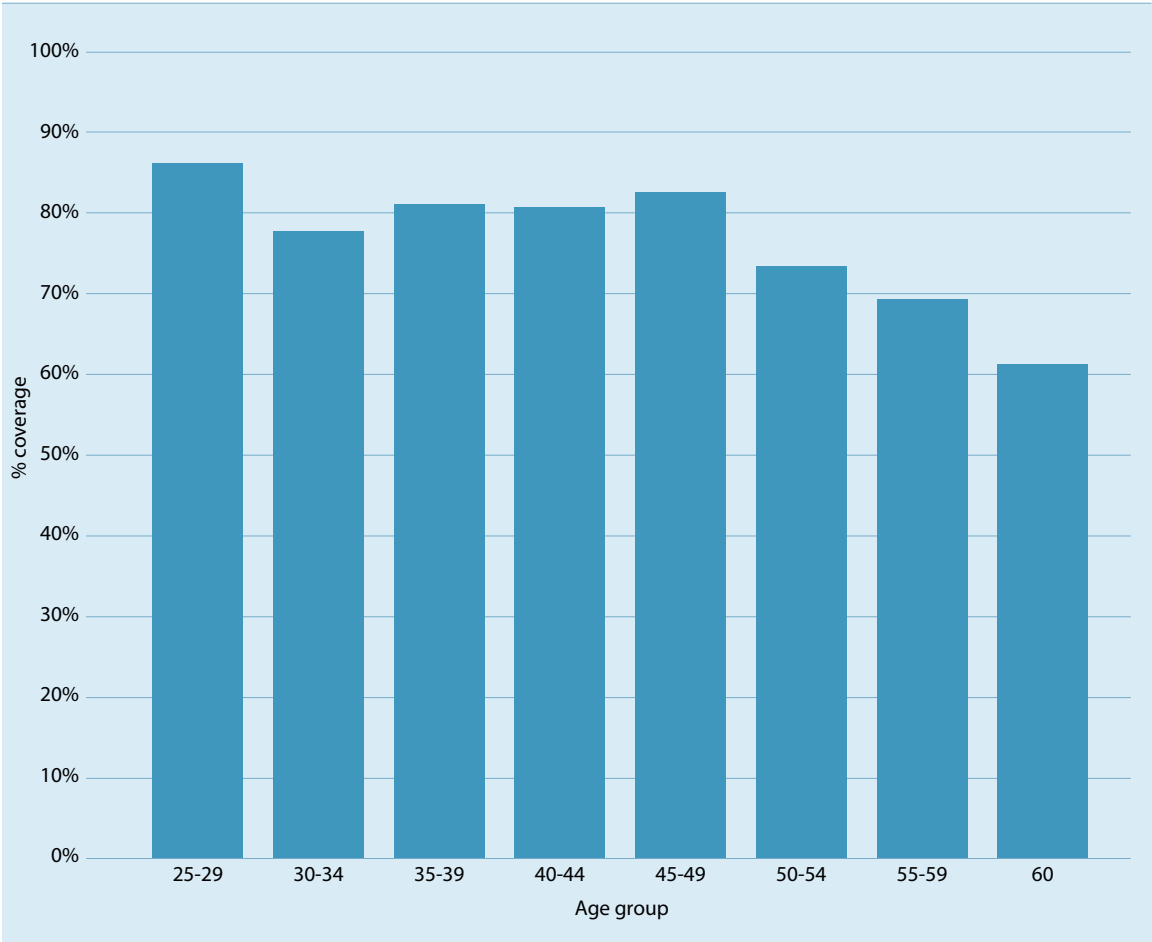
Figure 2: Five-year coverage (%) based on county of residence\* for period ending 31 August 2015



Data analysed using Health Atlas Ireland.

\* Population based on CSO 2011<sup>2</sup> figures projected to 2013, not adjusted for hysterectomy (hysterectomy data is not available for geographic location)

Figure 3: Five-year coverage of eligible women by age group\* for period ending 31 August 2015



\* Population based on CSO 2011<sup>2</sup> projected to 2013, adjusted for hysterectomy

Figure 3 demonstrates five-year coverage by age group for the period 1 September 2010 to 31 August 2015. A consistent pattern has been evident since the beginning of the programme with younger women more likely to have participated in screening (85.9 per cent of women aged 25-29 years screened compared to only 68.7 per cent of women in the 55-59 year old group). Women who have had a total hysterectomy with complete removal of the cervix are excluded from the target population.



## Laboratory turnaround time

In the CervicalCheck programme, it is important that cytology services process smear tests within 10 working days to facilitate the timely provision of results to doctors and women following their smear test.

A laboratory turnaround time of less than 10 working days in 95 per cent of cases is a programme standard. In this reporting year 78.6 per cent of results were received by the programme within 10 working days of the receipt of the sample being notified by the laboratory, which falls below the programme standard. A number of operational difficulties were experienced by one or more of the programme laboratories, which were addressed. The proportion of results returned within **three weeks** of receipt of sample at laboratory in the year was 88.6 per cent.

**Table 2: Laboratory turnaround time - time from notification of receipt of sample to the programme to results returned to the programme**

| Performance parameter                                                        | 2014/2015 | Target |
|------------------------------------------------------------------------------|-----------|--------|
| % results returned within 10 working days of receipt of sample at laboratory | 78.6%     | >95%   |

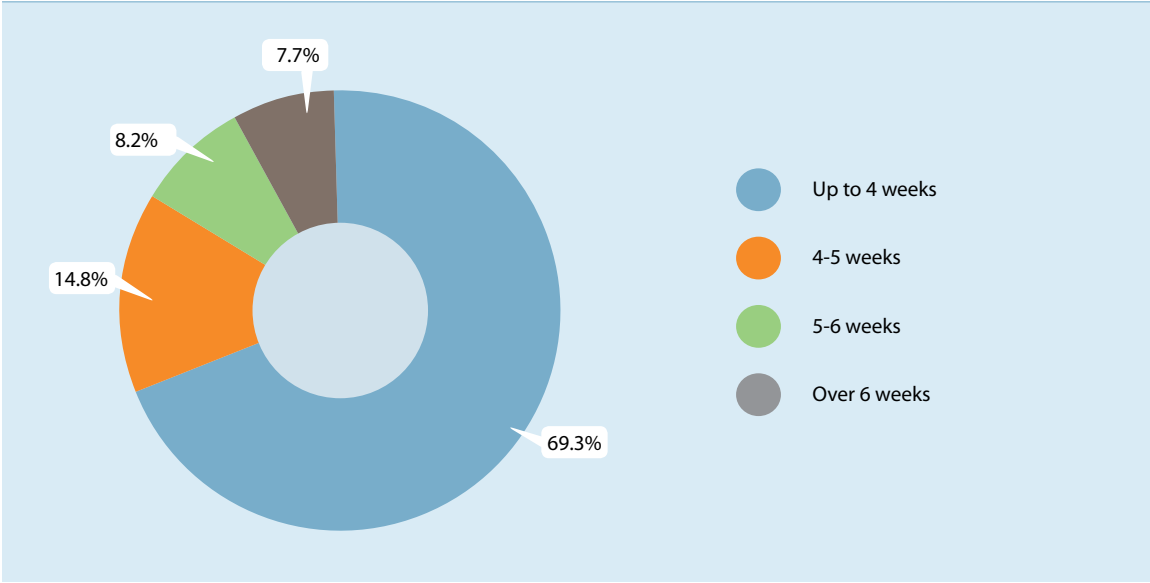
## Notification of results to women

The CervicalCheck Women's Charter includes the commitment that 'your result and any treatment recommendation will be provided to you by your smearer and by the programme within four weeks'. Table 3 illustrates the performance of the programme in issuing letters to women advising the availability of test results, with a notable improvement from 40 per cent in the first year to 69.3 per cent in the seventh year of the programme with the letter to the woman being issued within five weeks in 84.1 per cent of cases (Table 3 & Figure 4). Ongoing monitoring and actions include liaison with smear test locations on sample submission as well as ensuring turnaround times at laboratories. Such actions continue to make improvements in these response times.

**Table 3: Percentage of letters advising results available sent within four to six weeks of smear test date from 1 September 2014 to 31 August 2015**

| Time from smear test to results letter printed date | 2014/2015 | Target |
|-----------------------------------------------------|-----------|--------|
| Within 4 weeks                                      | 69.3%     | >90%   |
| Within 5 weeks                                      | 84.1%     |        |
| Within 6 weeks                                      | 92.3%     |        |

**Figure 4: Time in weeks for letter to be issued by the programme (%) from 1 September 2014 to 31 August 2015**



**Cytology**

Cytology findings reported in Tables 4 and 5 are based on smear test results received by the programme in the period 1 September 2014 to 31 August 2015, rather than the date on which the smear test was taken. Of the 295,354 smear tests examined, a small number (5,827; 2.0 per cent) were unsatisfactory (Table 4).

**Table 4: Cytology findings for smear test results received by the Programme from 1 September 2014 to 31 August 2015**

| Smear tests | Cytology findings                     |                                        |         |                                    |  |
|-------------|---------------------------------------|----------------------------------------|---------|------------------------------------|--|
|             | Total number of smear tests processed | Unsatisfactory/ Inadequate smear tests |         | Satisfactory/ adequate smear tests |  |
| N           | N                                     | %                                      | N       | %                                  |  |
| 295,354     | 5,827                                 | 2.0                                    | 289,527 | 98.0                               |  |

The outcomes of the remaining 289,527 satisfactory smear tests are reported in Table 5. Over 90 per cent of satisfactory smear test results were found to be negative or normal. Of the remainder, 8.2 per cent showed low-grade abnormalities (ASCUS, LSIL, AGC (borderline glandular)) and 1.7 per cent showed high-grade abnormalities (ASC-H, HSIL (moderate or severe), query invasive squamous carcinoma, AGC favour neoplasia or query glandular neoplasia). In previous years there was a higher than anticipated rate of ASCUS results, however in this year the ASCUS rate has fallen to 4 per cent.

**Table 5: Cytology results excluding unsatisfactory smear tests from 1 September 2014 to 31 August 2015**

| <b>Cytology results</b>                            | <b>N</b>       | <b>%</b>    |
|----------------------------------------------------|----------------|-------------|
| NAD (no abnormality detected)                      | 260,748        | 90.06%      |
| <b>Low grade</b>                                   |                |             |
| ASCUS                                              | 11,582         | 4.00%       |
| AGC (borderline glandular)                         | 366            | 0.13%       |
| LSIL                                               | 11,806         | 4.08%       |
| <b>High grade</b>                                  |                |             |
| ASC-H                                              | 1,290          | 0.45%       |
| HSIL (moderate)                                    | 1,813          | 0.63%       |
| HSIL (severe)                                      | 1,780          | 0.61%       |
| Query invasive squamous carcinoma                  | 39             | 0.01%       |
| AGC favour neoplasia                               | 54             | 0.02%       |
| Query glandular neoplasia / (AIS) / adenocarcinoma | 49             | 0.02%       |
| <b>Total</b>                                       | <b>289,527</b> | <b>100%</b> |

## Referral to colposcopy

Cytology results of smear tests performed on women outside colposcopy services are accompanied by a recommendation of referral to colposcopy for a) high-grade cytological abnormalities and b) persistent low-grade cytological abnormalities. During the reporting year, of the smear tests performed on women outside colposcopy clinics, 13,069 (5.0%) resulted in a referral to colposcopy.

## Cytology correlation measures

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<sup>3</sup>. These include the positive predictive value (PPV) and the referral value (RV).

The positive predictive value (PPV) is reported as the percentage of women referred with high-grade cytological abnormality who have a histological diagnosis of CIN2 or higher. During the current reporting year the PPV was 81.6 per cent.

The referral value (RV) looks at this in another way and examines the number of women referred to colposcopy for the detection of one case of CIN2 or higher. During the current reporting year, for every 218 women referred to colposcopy 100 had CIN2 or higher detected.

### Cytology-histology correlation

|     |       |
|-----|-------|
| PPV | 81.6% |
| RV  | 2.18  |

## Part 2 – Diagnosis and treatment

Quality assured colposcopy services with timely diagnosis and treatment are an important requirement for successful cervical screening programmes. Fifteen colposcopy services nationwide continue to work with the programme. Each has agreed an individualised service plan delivered by dedicated multidisciplinary teams. Information is collected electronically and a central data extraction performed. These data form the basis for this section of the report.

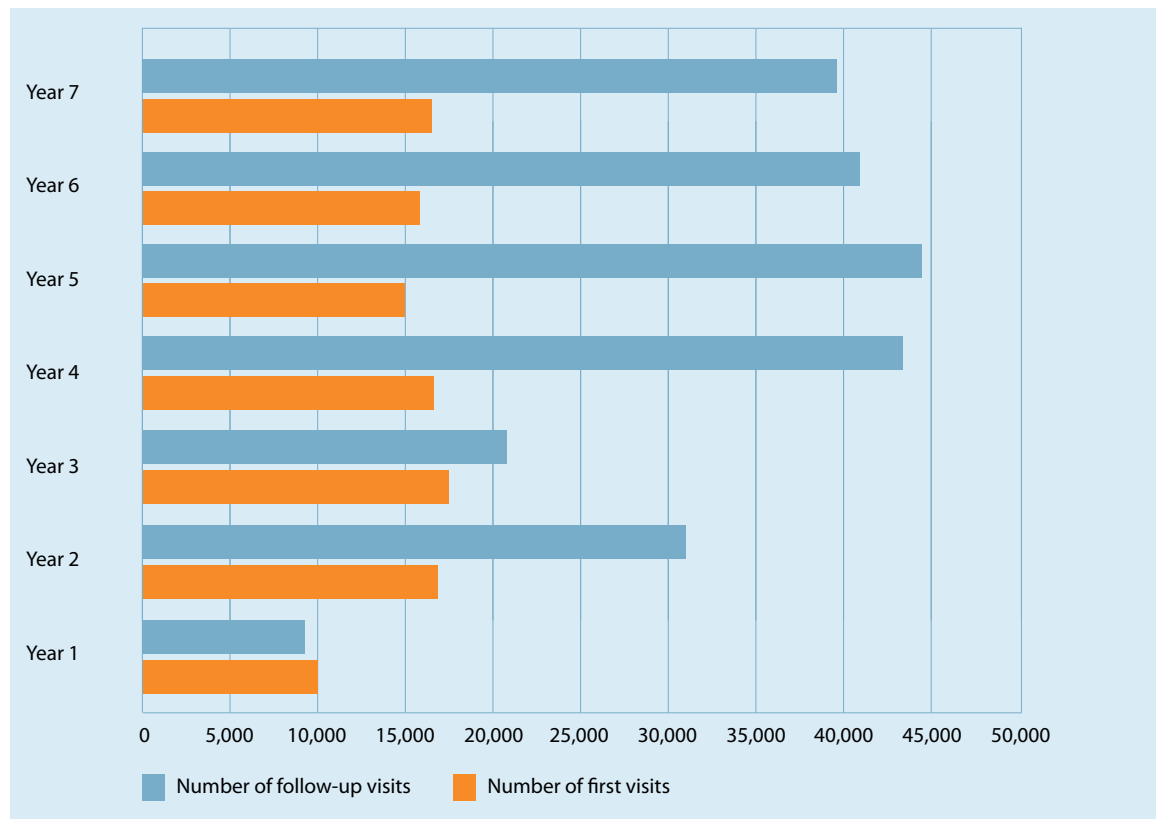
**Table 6: Outcome of appointments at colposcopy clinics from 1 September 2014 to 31 August 2015**

|              | First visits  |            | Follow-ups    |            | Total         |            |
|--------------|---------------|------------|---------------|------------|---------------|------------|
|              | N             | %          | N             | %          | N             | %          |
| Attended     | 16,549        | 72.9       | 39,557        | 57.0       | 56,106        | 60.9       |
| Cancelled    | 4,654         | 20.5       | 20,756        | 29.9       | 25,410        | 27.6       |
| DNA          | 1,492         | 6.6        | 9,140         | 13.2       | 10,632        | 11.5       |
| Not recorded | 5             | 0.02       | 0             | 0.0        | 5             | 0.01       |
| <b>Total</b> | <b>22,700</b> | <b>100</b> | <b>69,453</b> | <b>100</b> | <b>92,153</b> | <b>100</b> |

During the year, 16,549 women attended colposcopy for the first time representing an increase when compared to the previous year (Table 6 and Figure 5). By contrast, there was a reduction in the number of follow-up visits compared to the previous year. This is a result of the introduction of HPV testing in combination with cytology to identify women in colposcopy who are at low risk of high-grade CIN and who are suitable for discharge. This has reduced the number of follow-up visits required in colposcopy services.

It is important to note the number of women referred and the number of new referrals attended will not be the same in any given time period. This is because of the lead time between the colposcopy referral and the date of the first colposcopy visit as well as additional referrals for clinical reasons.

Figure 5: Attendance at colposcopy services from 1 September 2008 – 31 August 2015



Of the 16,549 new attendances at colposcopy, information on the age of the woman was available for 16,518 (99.8 per cent). The mean age at referral was 36 years. The majority of women (86 per cent) were aged between 25-49 years with 3.1 per cent under 25 years of age and 10.6 per cent aged 50 or over.

The Guidelines for Quality Assurance in Cervical Screening states that the rate of defaulted appointments where no prior notice was given (DNA) should be kept to a minimum. In 2013, this target was amended from below 15 per cent to below 10 per cent<sup>1</sup>. The recorded rate for the seventh year of the programme was 11.5 per cent. While this met the previous target it will be a focus of continued efforts to achieve the new target with the introduction of improved appointment reminder systems in colposcopy services.

Table 7: Attendance at colposcopy services

| Performance parameter                                                                                                                                                                               | 2014/2015 | Target |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| The percentage of women who do not attend and who do not notify the clinic should be maintained at a low level to maximise the efficiency of the clinic and to avoid the loss of women to follow-up | 11.5%     | <10%   |

The rate of DNA appointments is presented in Table 8 according to type of visit and age-group. The DNA rate is higher for return visits than for first visits possibly reflecting in part the longer lead time for these appointments. As in previous programme reports, younger women were more likely to default than older women.

**Table 8: DNA rates for appointments offered to women by age group**

| Age in years at first offered appointments | Number of first appointments | First visit DNA rate (%) | Number of follow-up appointments | Follow-up visit DNA rate (%) |
|--------------------------------------------|------------------------------|--------------------------|----------------------------------|------------------------------|
| <25                                        | 747                          | 9.9                      | 2,917                            | 17.0                         |
| 25 – 29                                    | 6,340                        | 6.8                      | 21,682                           | 14.5                         |
| 30 – 34                                    | 4,936                        | 7.4                      | 16,253                           | 13.8                         |
| 35 – 39                                    | 3,756                        | 6.9                      | 10,270                           | 12.7                         |
| 40 – 44                                    | 2,725                        | 5.3                      | 7,199                            | 12.2                         |
| 45 – 49                                    | 1,832                        | 5.5                      | 4,961                            | 10.5                         |
| 50 – 54                                    | 1,123                        | 6.1                      | 3,067                            | 9.5                          |
| 55 – 59                                    | 667                          | 4.8                      | 1,845                            | 8.2                          |
| 60                                         | 96                           | 5.2                      | 256                              | 9.8                          |
| 61+                                        | 504                          | 3.0                      | 1,007                            | 9.1                          |

## Reasons for referral

Women were referred to colposcopy either on the basis of an abnormal smear test result or for clinical reasons such as abnormal vaginal bleeding or suspicion of an anatomical abnormality of the cervix (Table 9). This table excludes 29 women (0.2%) for whom no consent information was recorded.

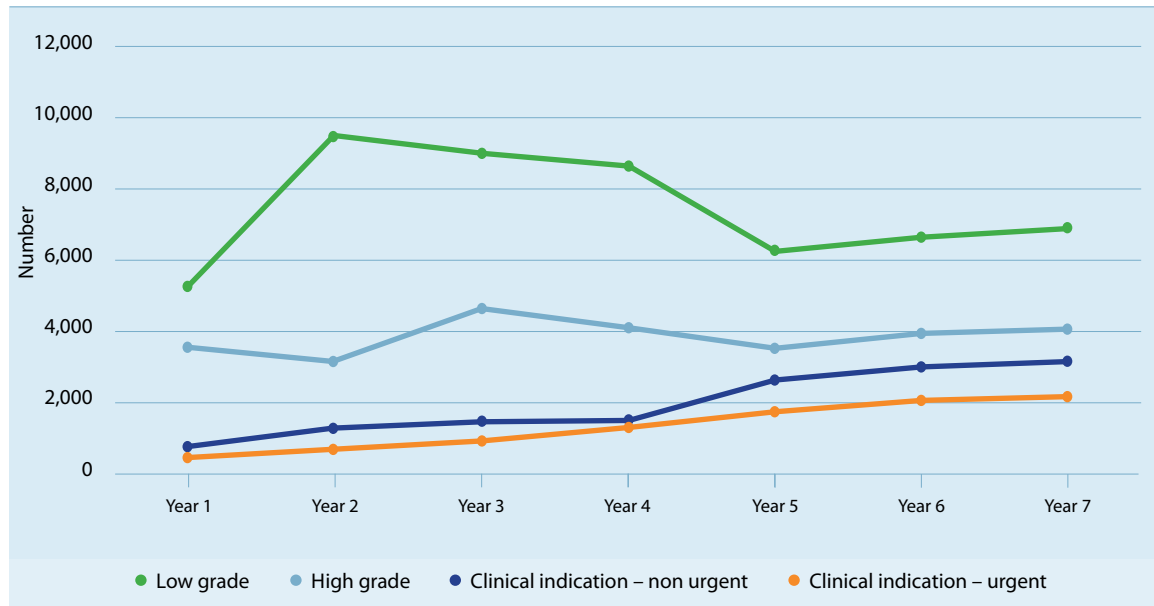
The reasons for referral to colposcopy for 16,520 of the 16,549 new referrals are presented in Table 9. Over two thirds of women were referred on the basis of an abnormal smear test result and 32.8 per cent were referred for clinical reasons. This relative increase in clinical referrals (women with anatomical abnormalities of the cervix or those with intermenstrual or post coital bleeding) represents the utilisation of capacity in colposcopy services to facilitate the inclusion of some women who previously would have been seen in outpatient gynaecology services (Figure 6).

**Table 9: Reason for referral to colposcopy from 1 September 2014 to 31 August 2015**

| Reason for referral to colposcopy | New referrals |            |
|-----------------------------------|---------------|------------|
|                                   | N             | %          |
| Abnormal Smear                    | 11,097        | 67.17      |
| Clinical Indication – non urgent  | 3,269         | 19.79      |
| Clinical Indication – urgent      | 2,154         | 13.04      |
| <b>Total*</b>                     | <b>16,520</b> | <b>100</b> |

\* The reason for referral was not recorded in five cases

**Figure 6: Reason for referral for women attending colposcopy services from 1 September 2008 – 31 August 2015**



Of the 11,097 women who attended for the first time with an abnormal smear test result, 4,010 (36.1 per cent) were referred following detection of a high-grade abnormality (Table 10). The detection of a low grade abnormality (LSIL or ASCUS) was the reason for referral in 6,679 (60.2 per cent) women and smear test showing AGC (atypical glandular cells) was the reason for referral in 328 cases (3.0 per cent). The number of women referred with persistently unsatisfactory or inadequate results (0.7 per cent) remained consistently low.

**Table 10: Reason for referral to colposcopy as a result of an abnormal smear test result from 1 September 2014 to 31 August 2015**

| Referral smear abnormality                       | New referrals |            |
|--------------------------------------------------|---------------|------------|
|                                                  | N             | %          |
| Unsatisfactory/inadequate                        | 80            | 0.7        |
| <b>Low grade</b>                                 |               |            |
| ASCUS                                            | 2,858         | 25.8       |
| AGC                                              | 328           | 3.0        |
| LSIL                                             | 3,821         | 34.4       |
| <b>High grade</b>                                |               |            |
| ASC-H                                            | 1,062         | 9.6        |
| HSIL (moderate)                                  | 1,333         | 12.0       |
| HSIL (severe)                                    | 1,547         | 13.9       |
| Query invasive squamous carcinoma                | 17            | 0.2        |
| Query glandular neoplasia / AIS / adenocarcinoma | 51            | 0.5        |
| <b>Total</b>                                     | <b>11,097</b> | <b>100</b> |

## Waiting times for appointments

One of the key challenges faced by the CervicalCheck programme has been the provision of access to colposcopy in a timely fashion for women. For the period 1 September 2014 to 31 August 2015 information on waiting times was available for 16,516 of the 16,549 new attendances (Table 11). For women referred to colposcopy with a smear test suggestive of CIN2/CIN3, 94.1 per cent were seen within four weeks which is an improvement on last year (91 per cent). Overall only 1.5 per cent of women experienced waiting times of longer than eight weeks and in only 0.5 per cent of cases the wait was longer than 12 weeks.

Table 11: Waiting times for colposcopy services 2014 to 2015

| Performance parameter                                                                                                                                                                         | 2014/2015 | Target |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| All women referred to colposcopy should be offered an appointment within 8 weeks of the date the letter was received at the clinic                                                            | 97.9%     | > 90%  |
| Women referred to colposcopy with a smear test result suggestive of CIN 2 or CIN 3 should be offered an appointment within 4 weeks of receipt of referral at the clinic                       | 94.1%     | > 90%  |
| Women referred to colposcopy with clinical suspicion of invasive cancer or AIS should be offered an appointment within 2 weeks of receipt of referral at the clinic                           | 100.0%    | > 90%  |
| All women referred to colposcopy with a smear test result suggestive of glandular neoplasia should be offered an appointment within 4 weeks of the date the letter was received at the clinic | 100.0%    | > 90%  |

Table 12: Waiting times for women referred to colposcopy grouped by grade of referral smear test

|                        | High grade*  |            | Low grade**  |            | Total         |            |
|------------------------|--------------|------------|--------------|------------|---------------|------------|
|                        | N            | %          | N            | %          | N             | %          |
| 2 weeks or less        | 1,908        | 47.6       | 1,954        | 27.9       | 3,862         | 35.1       |
| Between 2 and 4 weeks  | 1,844        | 46.0       | 1,717        | 24.5       | 3,561         | 32.3       |
| Between 4 and 8 weeks  | 232          | 5.8        | 3,200        | 45.7       | 3,432         | 31.2       |
| Between 8 and 12 weeks | 10           | 0.2        | 97           | 1.4        | 107           | 1.0        |
| Greater than 12 weeks  | 16           | 0.4        | 39           | 0.6        | 55            | 0.5        |
| <b>Total</b>           | <b>4,010</b> | <b>100</b> | <b>7,007</b> | <b>100</b> | <b>11,017</b> | <b>100</b> |

\* Includes ASC-H, Adenocarcinoma insitu and Query invasive carcinoma, AIS

\*\* Includes ASCUS, LSIL and AGC (Borderline glandular)



## Biopsy rate

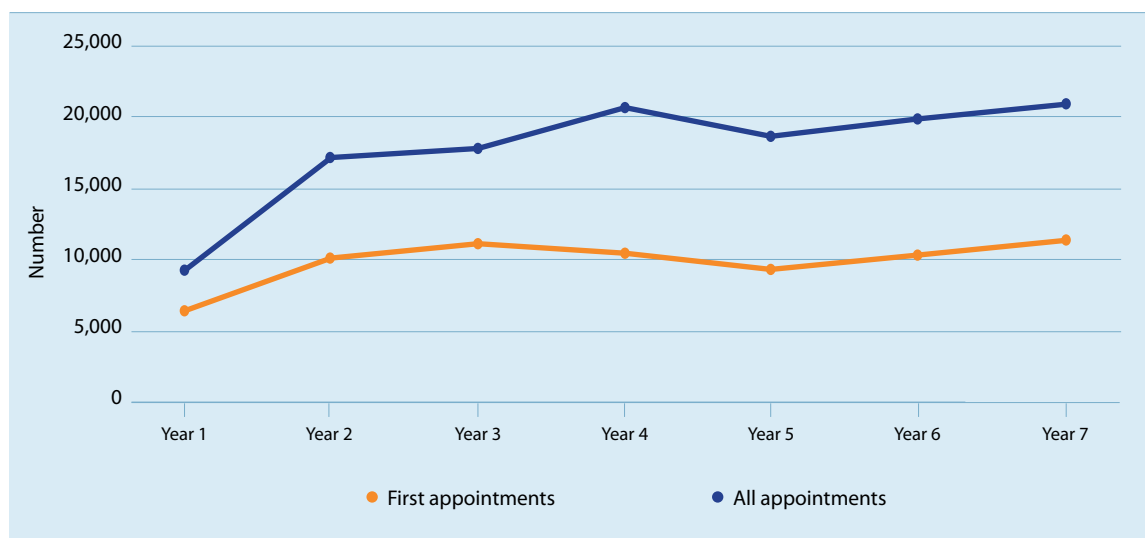
The role of colposcopy is to facilitate diagnosis and treatment of women with abnormal smear test results. Where an abnormality is suspected at colposcopy it is good practice to perform a biopsy to confirm the diagnosis. There are two main types of biopsy performed – a diagnostic biopsy, which involves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

During the reporting period, 14,619 diagnostic biopsies and 5,060 excisional biopsies were performed. The initial colposcopy visit determines the presence or absence of an atypical Transformation Zone (TZ) for women referred with an abnormal smear test result. A biopsy was performed in over 95 per cent of cases where the TZ was documented as atypical or abnormal. A biopsy was performed in all cases where an invasive cancer was suspected (Table 13 and Figure 7).

**Table 13: Biopsy rates measured against colposcopy standards**

| Performance parameter                                                              | 2014/2015 | Target |
|------------------------------------------------------------------------------------|-----------|--------|
| A biopsy should be performed in the presence of an atypical Transformation Zone    | 95.4%     | >90%   |
| If there is a suspicion of invasive disease a biopsy must be performed immediately | 100.0%    | >90%   |

**Figure 7: Number of women undergoing biopsy at colposcopy services**



Over 90 per cent of women presenting with a high grade cytological abnormality had a biopsy performed at the first visit compared with 74.9 per cent of women presenting with a low grade cytological abnormality. Over 74 per cent of women presenting with AGC (borderline glandular cells) had a biopsy at the first visit which included an excisional biopsy in 7.9 per cent of cases.

The biopsy rates according to the grade of the referral smear test and reasons for referral are presented in Table 14.

**Table 14: Biopsies performed during the first visit to colposcopy according to referral smear test result grade from 1 September 2014 to 31 August 2015**

|                                                 | Type of biopsy performed |            |                   |             |                 |             |               |            |
|-------------------------------------------------|--------------------------|------------|-------------------|-------------|-----------------|-------------|---------------|------------|
|                                                 | Excisional biopsy        |            | Diagnostic biopsy |             | No biopsy taken |             | Total         |            |
| Grade of cytology result of referral smear test | N                        | %          | N                 | %           | N               | %           | N             | %          |
| AGC                                             | 26                       | 7.9        | 217               | 66.2        | 85              | 25.9        | 328           | 100        |
| High Grade                                      | 928                      | 23.1       | 2,708             | 67.5        | 374             | 9.3         | 4,010         | 100        |
| Low Grade                                       | 127                      | 1.9        | 4,874             | 73.0        | 1,678           | 25.1        | 6,679         | 100        |
| Unsatisfactory / inadequate                     | 1                        | 1.3        | 21                | 26.3        | 58              | 72.5        | 80            | 100        |
| <b>Total</b>                                    | <b>1,082</b>             | <b>9.8</b> | <b>7,820</b>      | <b>70.5</b> | <b>2,195</b>    | <b>19.8</b> | <b>11,097</b> | <b>100</b> |

## Treatment at colposcopy

Effective treatment of high grade CIN and Adenocarcinoma in situ (AIS) 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 CIN from the cervix.

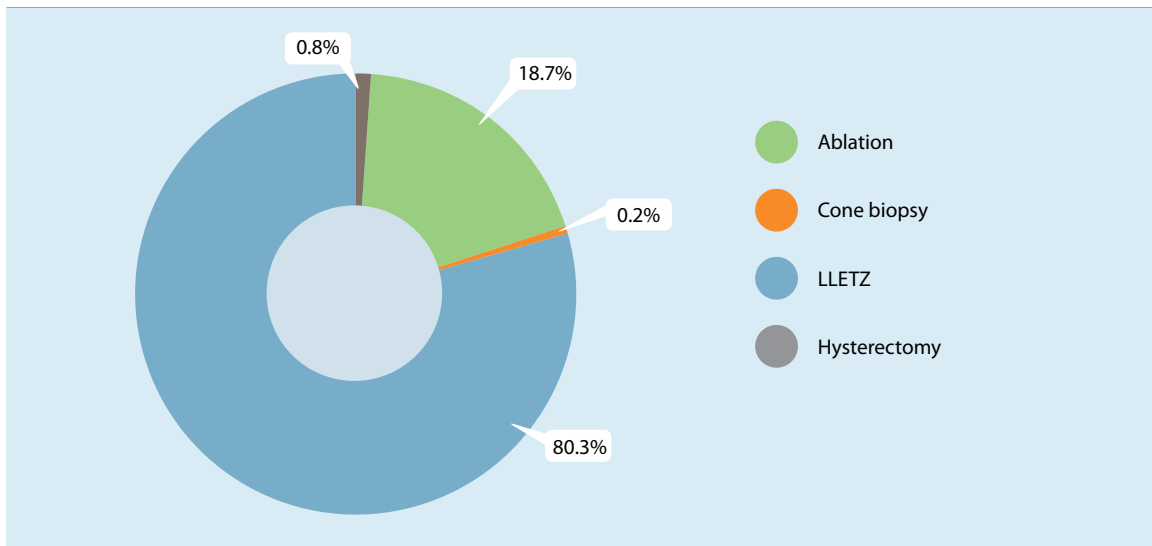
CervicalCheck programme standards state that treatments are performed as outpatient procedures under local anaesthetic at least 90 per cent of the time. During the seventh year of the programme, outpatient treatments occurred using local anaesthetic 97 per cent of the time surpassing this target (Table 15).

**Table 15: The outcome of use of local anaesthetic**

| Performance parameter                                                                          | 2014/2015 | Target |
|------------------------------------------------------------------------------------------------|-----------|--------|
| The majority of women should have treatment performed as an outpatient under local anaesthetic | 97.0%     | ≥90%   |

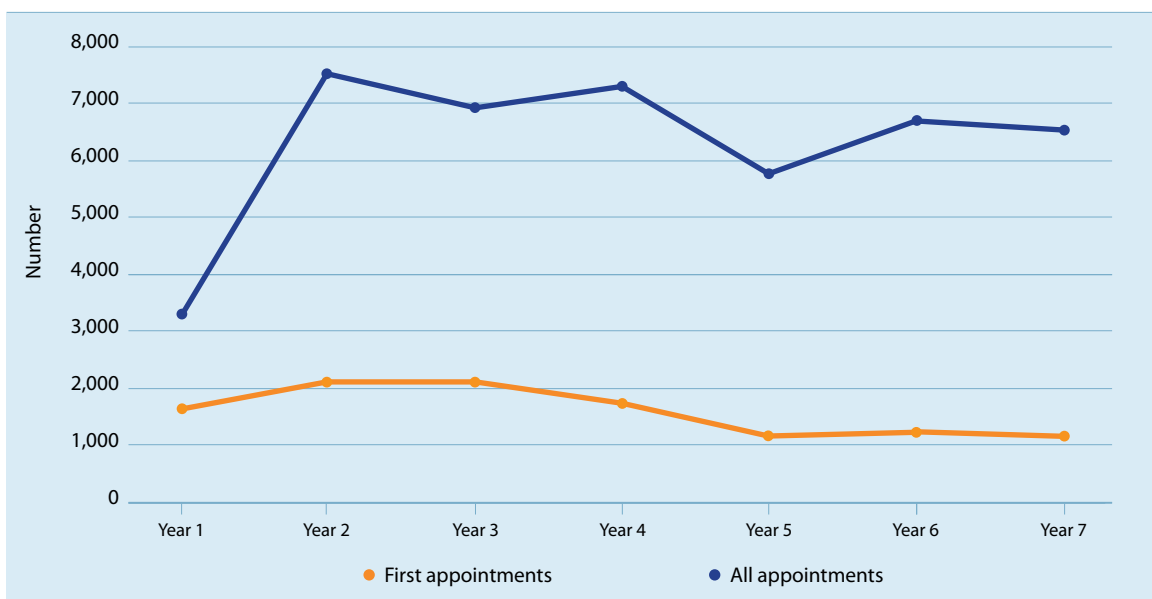
During the reporting period, 6,560 treatments were recorded at colposcopy. Large Loop Excision of the Transformation Zone (LLETZ) was performed in 5,269 (80.3%) cases and ablative treatment was used in 1,224 (18.7%) cases (Figure 8). Sixteen cone biopsies (0.2%) and 51 hysterectomies (0.8%) were performed.

**Figure 8: Treatments at colposcopy services from 1 September 2014 to 31 August 2015**



The number of treatments performed annually has grown markedly since the start of the CervicalCheck programme due to increased capacity at colposcopy as well as the prioritisation of women with high grade cytological changes (Figure 9).

**Figure 9: Number of women undergoing treatment at colposcopy services**



One of the principles of screening is the avoidance of overtreatment. This is of particular relevance to cervical screening because of the potential adverse effect of some treatments on future fertility. In this regard, treatment at the first visit for women who present with low grade abnormalities should be avoided and kept below 10 per cent. During the seventh year of the programme, this figure was within the target at 1.9 per cent (Table 16).

**Table 16: Avoidance of treatment at the first visit for women who present with low grade abnormalities**

| Performance parameter                                                                                                                                                                                                      | 2014/2015 | 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 | 1.9%      | <10%   |

**Table 17: Treatment at first visit to colposcopy from 1 September 2014 to 31 August 2015**

| Reason for referral to colposcopy | No treatment on first visit |             | Treatment on first visit |            | Total number of women attended |            |
|-----------------------------------|-----------------------------|-------------|--------------------------|------------|--------------------------------|------------|
|                                   | N                           | %           | N                        | %          | N                              | %          |
| Clinical indication – non urgent  | 3,186                       | 97.5        | 83                       | 2.5        | 3,269                          | 100        |
| Clinical indication – urgent      | 2,104                       | 97.7        | 50                       | 2.3        | 2,154                          | 100        |
| AGC (borderline glandular)        | 306                         | 93.3        | 22                       | 6.7        | 328                            | 100        |
| High Grade                        | 3,105                       | 77.4        | 905                      | 22.6       | 4,010                          | 100        |
| Low Grade                         | 6,553                       | 98.1        | 126                      | 1.9        | 6,679                          | 100        |
| Unsatisfactory / Inadequate       | 79                          | 98.8        | 1                        | 1.3        | 80                             | 100        |
| <b>Total</b>                      | <b>15,333</b>               | <b>92.8</b> | <b>1,187</b>             | <b>7.2</b> | <b>16,520</b>                  | <b>100</b> |

More than 90 per cent of women who undergo excisional procedures should have histologically-proven CIN detected on the excised specimen if the procedure is performed at the first visit to colposcopy. During the seventh year of the programme, 95.0 per cent of women treated at the first visit had CIN detected which met this target. In addition, 91.7 per cent of women who had an excisional treatment at any visit had CIN histology, meeting the target of greater than 85 per cent.

**Table 18: Women treated by excisional technique with CIN on histology**

| Performance parameter                                                             | 2014/2015 | Target |
|-----------------------------------------------------------------------------------|-----------|--------|
| Women treated by excisional technique at first visit should have CIN on histology | 95.0%     | >90%   |
| Women treated by excisional treatments at any visit should have CIN on histology  | 91.7%     | >85%   |

### Colposcopy correlation measure

The correlation between the colposcopic impression and histological diagnosis is a useful marker of the quality of colposcopy. During the year the positive predictive value (PPV) of a colposcopic impression of high grade disease was 75 per cent which is in excess of the programme’s target of >65%.

**Table 19: The positive predictive value of colposcopy**

| Performance parameter                                                                                    | 2014/2015 | Target |
|----------------------------------------------------------------------------------------------------------|-----------|--------|
| Compliance between colposcopic impression of high grade disease and histologically proven high grade CIN | 75%       | >65%   |

### Histology

The objective of a cervical screening programme is the detection and treatment of high grade CIN and the yield of these abnormalities is one of the hallmarks of success. The histology is presented by year in Figure 10. The proportion of high grade abnormalities remains consistently high.

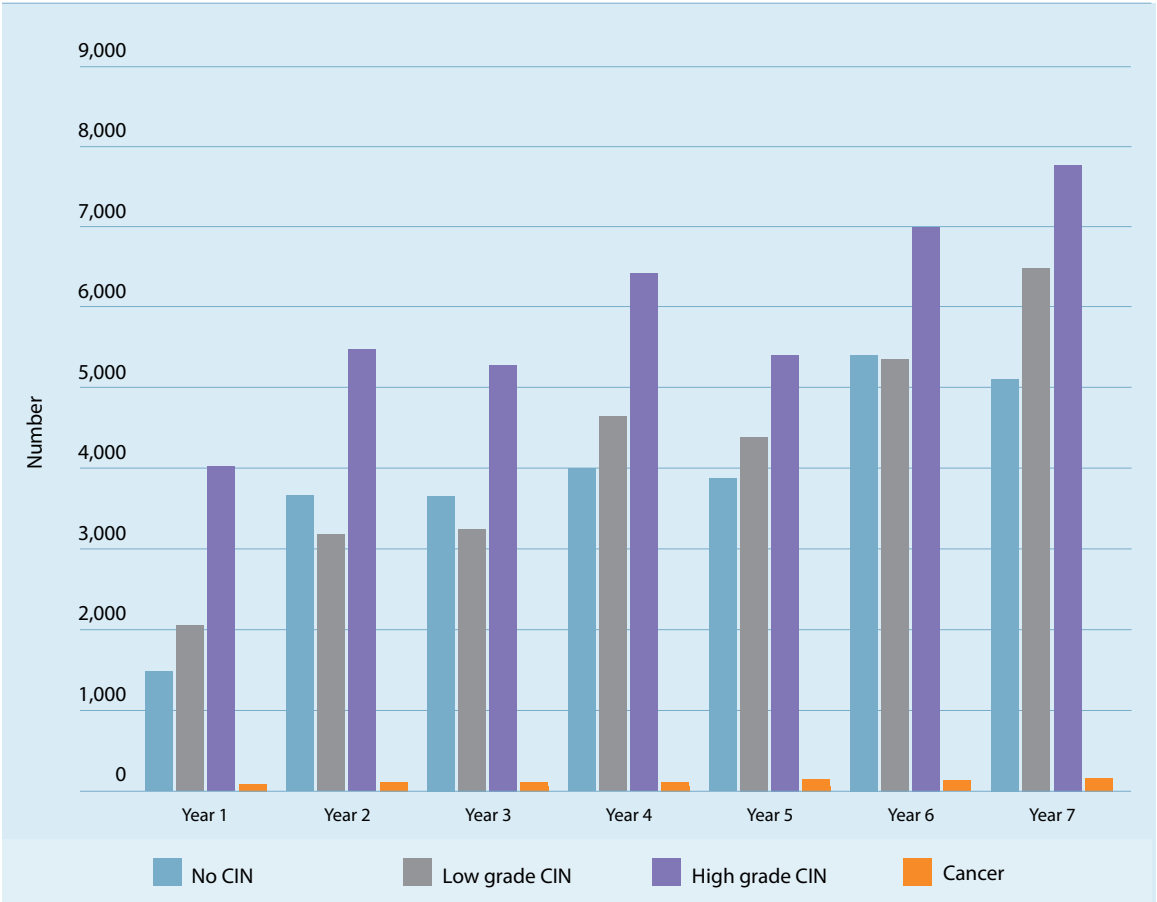
Overall, for all women who attended colposcopy in the seventh year of the programme (both new and follow up appointments), there were 222 cancers detected, 7,649 high grade CIN (CIN2, CIN3 or AIS), 6,492 low grade CIN and 5,134 women with no CIN (Figure 10). The specimen was suitable for histological analysis in 98.0 per cent of women biopsied (target >95%).

**Table 20: Biopsy specimen suitable for histological diagnosis**

| Performance parameter                                          | 2014/2015 | Target |
|----------------------------------------------------------------|-----------|--------|
| Biopsy specimens should be suitable for histological diagnosis | 98.0%     | >95%   |

In the first seven years of CervicalCheck, there have been 29,505 low grade CIN, 41,417 high grade CIN and 1,082 cancers detected.

Figure 10: Detection of CIN and cancer for the seven-year period ending 31 August 2015



**Table 21: Histology results for women who had a satisfactory biopsy at first visit to colposcopy from 1 September 2014 to 31 August 2015**

| Grade of cytology result of referral smear test | No CIN/No HPV (normal) |      | HPV/Cervicitis only |      | CIN 1 |      | CIN 2 |      | CIN 3 |      | Adenocarcinoma in situ/CGIN |      | Cancer (including micro invasive) |      | Total |   |
|-------------------------------------------------|------------------------|------|---------------------|------|-------|------|-------|------|-------|------|-----------------------------|------|-----------------------------------|------|-------|---|
|                                                 | N                      | %    | N                   | %    | N     | %    | N     | %    | N     | %    | N                           | %    | N                                 | %    | N     | % |
| ASCUS                                           | 460                    | 23   | 136                 | 6.9  | 939   | 47.9 | 293   | 14.9 | 130   | 6.6  | 1                           | 0.1  | 1                                 | 0.1  | 1,960 |   |
| AGC (borderline glandular)                      | 71                     | 30.2 | 25                  | 10.6 | 77    | 32.8 | 18    | 7.7  | 18    | 7.7  | 21                          | 8.9  | 5                                 | 2.1  | 235   |   |
| LSIL                                            | 512                    | 17.6 | 179                 | 6.2  | 1,400 | 48.2 | 538   | 18.5 | 271   | 9.3  | 5                           | 0.2  | 0                                 | 0.0  | 2,905 |   |
| ASC-H                                           | 94                     | 10.4 | 64                  | 7.1  | 256   | 28.4 | 207   | 22.9 | 264   | 29.3 | 13                          | 1.4  | 4                                 | 0.4  | 902   |   |
| HSIL (moderate or severe)                       | 111                    | 4.2  | 67                  | 2.5  | 311   | 11.8 | 594   | 22.6 | 1,482 | 56.3 | 27                          | 1.0  | 40                                | 1.5  | 2,632 |   |
| Query invasive squamous carcinoma               | 0                      | 0.0  | 0                   | 0.0  | 0     | 0.0  | 0     | 0.0  | 8     | 53.3 | 0                           | 0.0  | 7                                 | 46.7 | 15    |   |
| Query glandular neoplasia AIS / adenocarcinoma  | 2                      | 4.3  | 0                   | 0.0  | 5     | 10.6 | 4     | 8.5  | 9     | 19.1 | 17                          | 36.2 | 10                                | 21.3 | 47    |   |
| Unsatisfactory/ inadequate                      | 9                      | 42.9 | 4                   | 19.0 | 7     | 33.3 | 1     | 4.8  | 0     | 0.0  | 0                           | 0.0  | 0                                 | 0.0  | 21    |   |
| Total                                           | 1,259                  | 14.4 | 475                 | 5.4  | 2,995 | 34.4 | 1,655 | 19.0 | 2,182 | 25.0 | 84                          | 1.0  | 67                                | 0.8  | 8,717 |   |

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