

Quarterly Report 11

National Cervical Screening Programme

April to June 2003

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1. Executive Summary

This report provides data on performance indicators of the National Cervical Screening Programme. For reasons described, not all indicators are included in this report. For the indicators used, there has been little change, for better or worse, in any of the indicators. Where changes have occurred, these are described in the text.

Follow-up of women with HSIL cytology

In total, 4,397 women had a high grade cytology result recorded on the NCSP Register between 1 July 2001 and 30 June 2002. More than three-quarters (77.7%) of these women were recorded as having had a histology specimen taken within 12 weeks of their high grade smear being taken. This was less than the target of 90%. For 253 of the 4,397 women, a subsequent histology result was not recorded on the NCSP Register. This is similar to the number reported in the last quarter. The proportions of women who had no histology recorded on the NCSP-Register varied amongst the NCSP regions and by ethnicity.

Laboratory smear reporting

Thirteen laboratories reported cervical cytology during this quarter. Overall, of the 97,488 satisfactory or satisfactory but limited smears processed during the quarter, 7.3% were reported as abnormal, which was within the target of not more than 10%. The two-hospital based laboratories reported abnormalities in 14% and 26% of the smears they read.

Laboratory cytology turn around time

Eight of the thirteen laboratories reporting cervical cytology met the 7-day cytology turn around time target, unlike last quarter when all 12 laboratories met this target. All laboratories either met or were very close to achieving the 14-day target.

Laboratory histology turn around time

Twenty-nine laboratories reported cervical histology during the quarter. Seven laboratories did not meet the 5-day histology turn around time target. Most laboratories had reported all or almost all histology results within 10 working days, but two laboratories had reported under 90% of their specimens in this time.

Satisfactory but limited and unsatisfactory smears

The proportion of smears reported as satisfactory but limited varied considerably among the laboratories. Three laboratories exceed the target of not more than 20% satisfactory but limited smears. All smear taker groups (lay, medical, nurse, specialist and midwife) met the target for satisfactory but limited smears. When split by annual smear taking volume, smear taker subgroups who took more than 30 smears appeared to do better in terms of satisfactory but limited smears compared to those with a low annual volume.

Four laboratories reported less than 0.5% of smears as unsatisfactory. Almost all smear taker groups and subgroups split by annual smear volume met the target for the proportion of unsatisfactory smears.

Positive Predictive Value of high grade cytology

Overall, the PPV of the programme (72.5%) was within the recommended target range (65 to 85%). Three laboratories fell below the lower limit of this target.

Waiting time for colposcopic assessment

Five colposcopy units did not provide any data on the number of women referred for colposcopic assessment or the number waiting for assessment for more than four weeks (high grade cytology) or more than 26 weeks (low grade cytology), compared to six in the last quarter. The five units were Good Health Wanganui, Hutt Valley Health, Northland Health, Pacific Health Whakatane and Tairāwhiti Healthcare. A further three units (South Auckland Health, Southern Health and Waitemata Health) did not provide complete data on the numbers of women referred or waiting times for these women. Of these eight, four also reported incomplete or no data in the last quarter (Pacific Health Whakatane, South Auckland Health, Southern Health and Waitemata Health).

Of those units which did report data, some had no women waiting for longer than the recommended time. Three units reported large numbers of women waiting for longer than the recommended time.

2. Background

The Independent Monitoring Group (IMG) of the National Cervical Screening Programme (NCSP) has been responsible for providing independent quantitative monitoring of the NCSP since 2001. Part of this responsibility was to produce quarterly reports of national indicators for the NCSP. These indicators were established in 2000 by the National Screening Unit (NSU). The latest report (Report 10) for the period January to March 2003 was published in July 2003.

In May 2004, NSU approached the Centre for Public Health Research (CPHR), Massey University, with a request to provide independent advice on the quality indicators for the NCSP for the period April to June 2003. This document is the resulting report, and forms Quarterly Report 11. All data included in this report were provided to CPHR by NSU. The restricted number of indicators included in the report are a result of the short time frame within which this report was produced. These indicators were chosen by NSU, not by CPHR.

3. Abbreviations

The following abbreviations are used throughout this report

| | |
|-----------|---|
| ASCUS: | Atypical squamous cells of undetermined significance |
| ASCUS-HG: | Atypical squamous cells of undetermined significance, possible high grade |
| CIN I: | Cervical intra-epithelia neoplasia, low grade |
| HPV: | Human papilloma virus effect |
| HSIL: | High grade squamous intra-epithelial lesion |
| LSIL: | Low grade squamous intra-epithelial lesion |
| NSU: | National Screening Unit of the Ministry of Health |
| PPV: | Positive predictive value |

4. Recommendations

4.1 Data Issues

1. Some further analysis e.g. confidence intervals is to be undertaken on the PPV reporting for the laboratories before reporting this information to the laboratories.
2. A suitable process to collect data required for calculating the colposcopy waiting time indicators is urgently required in order to monitor colposcopy services.
3. Efforts to collect data from those DHB colposcopy units who have not provided data should continue. In this quarter, the recommendation is that particular attention should be paid to the following units, which have failed to provide complete colposcopy data for follow-up of both high and low grade cytology smears in two consecutive quarters: Northland Health, Pacific Health Whakatane, South Auckland Health, Southern Health, Tairāwhiti Healthcare and Waitemata Health.

4.2 Services Issues

1. That colposcopy reports are generated from colposcopy units to identify the outcome of colposcopy as part of the implementation of the Health (NCSP) Amendment Act by March 2005.
2. Reasons why 253 women with a high grade cytology report have no subsequent histology result recorded on the NCSP Register need to be examined by the National Screening Unit. This needs to be considered in particular in relation to Maori and Pacific.
3. Analysis by ethnicity and region is required in relation to the timeliness of the histology report and utilise this information to consider the actions to be undertaken.
4. Reasons for the poor timeliness (i.e. below 75% at 12 weeks) of reporting of histology on the NCSP Register from the following regions needs to be examined by the National Screening Unit: Bay of Plenty, Taranaki, Waikato, Wellington.
5. The following laboratories should work towards achieving and maintaining the 7-day cytology turn around time target: Pathlab Waikato, Medlab Wellington, Medlab Bay of Plenty and Valley Diagnostic Laboratory. This is particularly important for Valley Diagnostic Laboratory, which falls well below the recommended target.
6. The National Screening Unit should seek an explanation from Auckland Hospital Laboratory for the relatively low proportion of histology specimens reported within 5 working days and the lack of improvement from 60.9 in the previous quarter to 60.7 in this quarter.
7. The process around managing histology reporting in Rotorua Hospital Laboratory needs to be reviewed in detail.
8. The National Screening Unit should seek an explanation why, in addition to Auckland Hospital Laboratory and Rotorua Hospital Laboratory, Hutt Hospital Laboratory and Wellington Hospital Laboratory fell below the targets on two consecutive reporting periods.

9. The following laboratories should continue to work towards achieving their 5-day histology turn around time target: Waikato Hospital, Medical Laboratory Hamilton, Northland Pathology.
10. The NSU should investigate the following laboratories whose reporting of PPV for HSIL is below the target: Canterbury Health Laboratories, Pathlab Waikato and Valley Diagnostic.
11. NSU need to investigate why there appears to be a backlog of colposcopic assessments for high grade cytology results in Hawke's Bay, where there is a particularly high number of women waiting longer than the recommended four weeks.
12. Efforts to reduce the waiting time in other units with women waiting longer than four weeks following a HSIL or ASCUS-HG cytology result need to continue.
13. Efforts to reduce the number of women with low grade cytology waiting more than 26 weeks for colposcopic assessment should continue.
14. NSU should investigate why so many women with a low grade smear are waiting longer than the recommended time for colposcopic assessment at Lakeland Health and Health Waikato.
15. The NSU needs to consider if the resource allocated to this area is a national issue.

5. Methods

The National Screening Unit (NSU) of the Ministry of Health (MoH), through a committee of experts and a consultation process, established national indicators for the National Cervical Screening Programme (NCSP) in 2000. Where it was considered appropriate and feasible, the NSU set targets for some indicators.

This report includes data on the majority of the indicators which were set to be reported quarterly, and one indicator which is reported 6-monthly. Because of the short time period over which this report was produced, some quarterly and 6-monthly indicators have not been included. Annual indicators are also not included. Indicators which are not included in this report are listed and defined in Appendix 1.

Each indicator is described in the results section under the separate headings that identify the specific indicators. The results for each indicator are discussed in relation to the set targets. For indicators with no target, changes over time are described. Recommendations are made on the basis of the set targets for each indicator

The data were analysed and provided to Massey University for interpretation and comment. To calculate the indicators for this report, anonymised data of women enrolled on the NCSP Register were used. Aggregate anonymised data for women referred to DHB colposcopy units were also used. This report includes results for Māori and Pacific women. Both the National Kaitiaki Group and the Pacific Women's Data Advisory Group approved the use of data for enrolled women recorded as identifying with the Māori and Pacific ethnic groups, respectively, on the NCSP Register. For the purposes of monitoring reports, women recorded on the NCSP Register as being not Māori or Pacific were grouped together as the non-Māori, non-Pacific group. This group includes women whose ethnic group was unknown, estimated as 9% of the total number of women in the NSCP Register.

Unless otherwise stated, women's ages at the end of the reporting quarter were used when calculating the indicators. The registration status and demographic details of each woman at the time of the data download were used for all calculations. Women were assigned to both a NCSP region and a District Health Board (DHB) area by the NCSP Register. Each woman was allocated to the NCSP region and DHB area in which they lived, with two exceptions. Women whose address was unknown were allocated to the NCSP region according to their previously known address. Women who usually had their smears in a NCSP region other than the one where they lived were allocated to the NCSP region where they usually had their smears. For women in either of these situations, if the NCSP regions to which they were allocated had boundaries identical to a DHB area, then they were allocated to that DHB, otherwise the DHB area in which they lived was recorded as unspecified.

6. Results

6.1 Follow-up of women with high grade cytology

Definition

High grade cytology is defined as a cytology result of ASCUS possible high grade (ASCUS-HG), HSIL or more serious abnormality according to the hierarchy of codes (Appendix 2). Follow-up of women with a high grade cytology result is estimated using the timeliness with which a histology specimen is taken following the high grade cytology result.

Target

The targets for the follow-up of women with high grade cytology are as follows:

- 90% of women should have a histology specimen taken within 12 weeks of the smear being taken

and

- 99% of women should have a histology specimen taken within 52 weeks of the smear being taken.

Calculation

The number of enrolled women aged 20-69 years at 30 June 2003 who had a high grade cytology result recorded on the NCSP Register between 1 July 2001 and 30 June 2002 was calculated. For each of these women the time between the date that the smear was taken and the date that the subsequent histology specimen was taken was calculated. The numbers of women with a histology specimen taken within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and more than 52 weeks after their ASCUS possible high grade, HSIL or more serious cytology result were expressed as proportions of the total number of women with high grade cytology smear taken between 1 July 2001 and 30 June 2002. The numbers and proportions of women with no histology result recorded on the NCSP-Register following their high grade cytology smear were also calculated. Women without subsequent histology recorded were also described in two ways: whether they had been signed back into the programme since their high grade smear and whether they had a subsequent smear taken by a non-specialist or specialist. This indicator was calculated for women of all ethnic groups, and separately for Māori, Pacific and non-Māori, non-Pacific women separately. It was also calculated for each NCSP region.

Results

The timeliness with which a histology specimen was taken amongst women who had a high grade cytology result is shown in Table 1. Between 1 July 2001 and 30 June 2002, 4,397 women had a high grade cytology result. Of these, 77.7% had a histological specimen taken within 12 weeks of the abnormal cytology, compared to the target of 90%. This value is almost identical to that reported in the previous quarter (77.2%). The proportion of women who had a histological specimen taken within 52 weeks of the high grade cytology was 92.9%, compared to the target of 99%. This value is almost identical to that reported in the previous quarter (92.3%).

There was no histology reported on the NCSP Register for 253 (5.8%) women who had a high grade cytological abnormality.

The timeliness of having a histological specimen taken following a high grade smear differed by ethnicity, as shown in Table 2. Compared to non-Māori, non-Pacific women, Māori and Pacific women were less likely to have a histological specimen taken within the recommended time periods. For example, at 12 weeks, 80.2% of non-Māori, non-Pacific women had had a histological specimen taken, compared to 66.6% of Māori and 65.5% of Pacific women. These figures are similar to those reported in the last quarter (79.6%, 66.3% and 68.8% respectively). The differences by ethnicity persisted for all time periods following a suspected high grade smear.

A relatively large number of women (n=253, 5.8%) had no histology report recorded on NCSP Register following a high grade smear. Absence of such a report was much more common in Pacific (15%) and Māori (8.3%) women compared to non-Māori, non-Pacific women (5%), see Table 2. There were also differences by region in the absence of a histological report following a high grade smear, see Table 3. Such an absence was most common in Tairāwhiti, Taranaki and Auckland, and least common in Nelson / Marlborough.

The timeliness of having a histological specimen taken following a high grade smear differed by NCSP region, see Table 3. No region achieved the target of 90% of women having a histological specimen taken within 12 weeks of the smear. The Otago / Southland region achieved 87.6% specimen recording within 12 weeks of a high grade smear. The poorest performer was the Wellington region (72.2%).

In all regions, the proportion of women who had a high grade smear result with a subsequent histology taken within 52 weeks was more than 90%. Only one region (Nelson / Marlborough) reached the target of 99% of women having histological specimens taken within 52 weeks of a high grade smear. In this indicator, the Auckland region fared the poorest (90.8%). Many of the regions have similar timeliness in reporting histological results for women with high grade smears compared to the previous quarter. The region with noticeably better timeliness compared to data reported from January to March 2003 is Bay of Plenty, which improved its 12-week reporting from 63.9% to 72.4% and its 52-week reporting from 87.6% to 93.1%.

Table 4 summarises the status of the women who had no histology result recorded on the NCSP-Register following a high grade smear. There were 253 such women, of whom 76 (30%) had no subsequent smear recorded and 63 (25%) had a follow-up smear taken by a non-specialist. Of the 139 women who had either no follow-up smear or a smear taken by a non-specialist, 100 were recorded on the register as having been 'signed in' following their high grade smear result, suggesting that clinical management of an abnormality had been completed. The remaining 39 women did not appear to have been signed in, indicating that their follow-up was less clear.¹

¹ Analysis undertaken following the recommendation made in IMG Report 5 revealed that all 356 women with high grade cytology had indeed been followed up, but histology results for these women were not recorded on the NCSP-Register at the time of the data download for that report. There were several reasons for this. For many of the 356 women, histology results were recorded on the NCSP-

Explanation of divergence

Some women with no histology recorded may have had further investigations and treatment, but their histology reports were not recorded on the NCSP-Register. Some women may have moved overseas and had follow-up there, some women may not have had indications for biopsy at colposcopic examination or were pregnant at the time of their colposcopy appointment and some women may have chosen to not have their histology results to be recorded on the NCSP-Register.

Recommendations

Service Issues

1. That colposcopy reports are generated from colposcopy units to identify the outcome of colposcopy as part of the implementation of the Health (NCSP) Amendment Act by March 2005.
2. Reasons why 253 women with a high grade cytology report have no subsequent histology result recorded on the NCSP Register need to be examined by the NSU. This needs to be considered in particular in relation to Maori and Pacific.
3. Analysis by ethnicity and region is required in relation to the timeliness of the histology report and utilise this information to consider the actions to be undertaken.
4. Reasons for the poor timeliness of reporting of histology to the NCSP-Register from the following regions needs to be examined by the National Screening Unit: Bay of Plenty, Taranaki, Waikato and Wellington.

Table 1: Timeliness of histology report after a high grade cytology result for enrolled 20 to 69 year old women

| Time period | Number | Proportion (%) | Cumulative Proportion (%) |
|--|--------|----------------|---------------------------|
| Within 12 weeks | 3,418 | 77.7 | 77.7 |
| 13 to 26 weeks | 468 | 10.6 | 88.3 |
| 27 to 52 weeks | 203 | 4.6 | 92.9 |
| More than 52 weeks | 55 | 1.3 | 94.2 |
| Subtotal | 4,144 | | |
| No histology recorded on NCSP Register | 253 | 5.8 | 100 |
| Total | 4,397 | | |

Target: 90% with histology report within 12 weeks and 99% within 52 weeks of a high grade smear

Register later than expected due to delays in the colposcopy appointment or delays in the laboratory forwarding histology results to the NCSP-Register. For a few women, histology specimens had not been obtained because at the colposcopic assessment it was not necessary to take a biopsy, or colposcopy appointments and/or treatment were delayed as women were either pregnant or had another medical condition that precluded them from having a biopsy.

Table 2: Timeliness of histology report after a high grade cytology result for enrolled 20 to 69 year old women by ethnicity

| Time Period | Māori women | | | Pacific women | | | Non-Māori, non-Pacific women | | |
|---|-------------|--------------|-------------------------|---------------|--------------|-------------------------|------------------------------|--------------|-------------------------|
| | Number | Proportion % | Cumulative Proportion % | Number | Proportion % | Cumulative Proportion % | Number | Proportion % | Cumulative Proportion % |
| Within 12 weeks | 453 | 66.6 | 66.6 | 74 | 65.5 | 65.5 | 2,891 | 80.2 | 80.2 |
| 13 to 26 weeks | 95 | 14.0 | 80.6 | 14 | 12.4 | 77.9 | 359 | 10.0 | 90.2 |
| 27 to 52 weeks | 62 | 9.1 | 89.7 | 7 | 6.2 | 84.1 | 134 | 3.7 | 93.9 |
| More than 52 weeks | 13 | 2.0 | 91.7 | 1 | 0.9 | 85.0 | 41 | 1.1 | 95.0 |
| Subtotal | 623 | | | 96 | | | 3,425 | | |
| No histology recorded on NCSP Register | 57 | 8.3 | 100 | 17 | 15.0 | 100 | 179 | 5.0 | 100 |
| Total | 680 | | | 113 | | | 3,604 | | |

Target: 90% with histology report within 12 weeks and 99% within 52 weeks of a high grade smear

Note: the follow-up of the 253 women with no histology recorded on NCSP Register are shown in Table 4.

Table 3: Timeliness of histology report after a high grade cytology result for enrolled 20 to 69 year old women by NCSP region

| NCSP region | Time Periods | | | | | | | | | | |
|--------------------------------|-----------------|------|----------------|------|----------------|-----|-----------------|------|--------------|-----|-------|
| | Within 12 weeks | | 13 to 26 weeks | | 27 to 52 weeks | | Within 52 weeks | | No Histology | | Total |
| | No. | % | No. | % | No. | % | No. | % | No. | % | |
| Auckland | 890 | 77.7 | 92 | 8.0 | 59 | 5.2 | 1,041 | 90.8 | 86 | 7.5 | 1,146 |
| Bay of Plenty | 293 | 72.4 | 63 | 15.6 | 21 | 5.2 | 377 | 93.1 | 24 | 5.9 | 405 |
| Canterbury | 470 | 81.0 | 47 | 8.1 | 17 | 2.9 | 534 | 92.1 | 40 | 6.9 | 580 |
| Hawkes Bay | 145 | 78.8 | 23 | 12.5 | 8 | 4.4 | 176 | 95.7 | 6 | 3.3 | 184 |
| Manawatu/ Wanganui | 268 | 79.3 | 31 | 9.2 | 16 | 4.7 | 315 | 93.2 | 15 | 4.4 | 338 |
| Nelson/ Marlborough | 99 | 78.0 | 23 | 18.1 | 4 | 3.2 | 126 | 99.2 | 1 | 0.8 | 127 |
| Northland | 156 | 81.7 | 15 | 7.9 | 10 | 5.2 | 181 | 94.8 | 8 | 4.2 | 191 |
| Otago/ Southland | 311 | 87.6 | 22 | 6.2 | 8 | 2.3 | 341 | 96.1 | 11 | 3.1 | 355 |
| Tairāwhiti | 31 | 81.6 | 4 | 10.5 | 0 | 0.0 | 35 | 92.1 | 3 | 7.9 | 38 |
| Taranaki | 119 | 73.9 | 20 | 12.4 | 9 | 5.6 | 148 | 91.9 | 12 | 7.5 | 161 |
| Waikato | 243 | 73.6 | 53 | 16.1 | 19 | 5.8 | 315 | 95.5 | 13 | 3.9 | 330 |
| Wellington | 364 | 72.2 | 68 | 13.5 | 32 | 6.4 | 464 | 92.1 | 32 | 6.4 | 504 |
| West Coast | 29 | 76.3 | 7 | 18.4 | 0 | 0.0 | 36 | 94.7 | 2 | 5.3 | 38 |
| Total | 3,418 | | 468 | | 203 | | 4,089 | | 253 | | 4,397 |

Target: 90% with histology report within 12 weeks and 99% within 52 weeks of a high grade smear

Table 4: The number of women with high grade cytology but no histology result recorded, by NCSP Register status and source of any subsequent smear

| Subsequent smear | Women's status since high grade cytology result | | |
|--|---|-----------|-------|
| | Not signed in | Signed in | Total |
| No subsequent smear | 20 | 56 | 76 |
| Subsequent smear taken by non-specialist | 19 | 44 | 63 |
| Subtotal | 39 | 100 | 139 |
| Smear taken by specialist | 40 | 74 | 114 |
| Total | 79 | 174 | 253 |

6.2 Summary of laboratory indicators

Levels of cytology abnormalities detected by laboratories depend on numerous factors including the prevalence of abnormalities, the case mix and laboratory reporting practice. The Bethesda System is used by the NCSP to record the cytological result of each smear. The Bethesda diagnosis codes were assigned to broad cytological categories and these are shown in Appendix 2. Laboratories can assign more than one Bethesda diagnosis code to each smear. Therefore, a hierarchy of the codes is used by the NCSP for the recommended follow-up and tabulation of results. Similarly, for the purposes of this report the most serious diagnosis code for each smear according to the hierarchy of codes is used.

Several NCSP national indicators focus on laboratory performance. The indicators in this category which are discussed in this report are:

- laboratory smear reporting rates
- cytology and histology turn around times
- satisfactory but limited and unsatisfactory smear reporting rates
- positive predictive value of HSIL

A summary of these performance indicators by laboratory is shown in Table 5. Each of the indicators is discussed in more detail below.

Table 5: Summary of laboratory indicators reported

| Laboratory | Total number of smears processed | | Satisfactory but limited smears ¹ | | Unsatisfactory smears ² | | Negative for dysplasia ³ | | HSIL ⁴ | | Total abnormalities ⁵ | | Within 7 working days (%) |
|--------------------------------|----------------------------------|--|--|------|------------------------------------|-----|-------------------------------------|-------------|-------------------|-----|----------------------------------|------|---------------------------|
| | Number | | No. | % | No. | % | No. | | No. | % | No. | % | |
| Auckland Hosp Laboratory | 2,131 | | 434 | 20.4 | 48 | 2.3 | 1,541 | 74.0 | 145 | 7 | 542 | 26 | 99.9 |
| Canterbury Health Laboratories | 1,735 | | 275 | 15.9 | 27 | 1.6 | 1,464 | 85.7 | 43 | 2.5 | 244 | 14.3 | 99.9 |
| Diagnostic Medlab Auckland | 24,020 | | 5,307 | 22.1 | 77 | 0.3 | 22,678 | 94.7 | 192 | 0.8 | 1,265 | 5.3 | 100 |
| Medlab Wellington | 10,565 | | 1,622 | 15.4 | 88 | 0.8 | 9,710 | 92.7 | 80 | 0.8 | 767 | 7.3 | 88.3 |
| Medlab Bay of Plenty | 6,006 | | 927 | 15.4 | 27 | 0.5 | 5,421 | 90.7 | 56 | 0.9 | 558 | 9.3 | 86.8 |
| Medlab Central | 7,936 | | 1,356 | 17.1 | 21 | 0.3 | 7,196 | 90.9 | 75 | 1.0 | 719 | 9.1 | 99.8 |
| Medlab Hamilton | 7,294 | | 1,052 | 14.4 | 34 | 0.5 | 6,571 | 90.5 | 7.2 | 1.0 | 689 | 9.5 | 99.4 |
| Pathlab Waikato | 3,493 | | 514 | 14.7 | 24 | 0.7 | 3,183 | 91.8 | 22 | 0.6 | 286 | 8.2 | 82.1 |
| SCL* Christchurch | 5,453 | | 582 | 10.7 | 28 | 0.5 | 5,145 | 94.8 | 42 | 0.8 | 280 | 5.2 | 100 |
| SCL* Dunedin | 11,195 | | 903 | 8.1 | 164 | 1.5 | 10,440 | 94.6 | 194 | 1.8 | 591 | 5.4 | 99.9 |
| Taranaki Medlab | 3,835 | | 775 | 20.2 | 55 | 1.4 | 3,463 | 91.6 | 30 | 0.8 | 317 | 8.4 | 97.5 |
| Valley Diagnostic Laboratory | 3,762 | | 643 | 17.1 | 36 | 1.0 | 3,545 | 95.1 | 47 | 1.3 | 181 | 4.9 | 39.4 |
| Medlab South Christchurch | 10,796 | | 1,998 | 18.5 | 104 | 1.0 | 100007 | 93.6 | 112 | 1.1 | 685 | 6.4 | 100 |

Targets are: ¹ not more than 20%, ² 0.5 to 2.0%, ³ not more than 96%, ⁴ not less than 0.6%, ⁵ not more than 10%, ⁶ 90% within 5 days

* SCL: Southern Community Laboratory

6.3 Laboratory smear reporting

Definition

Laboratory smear reporting is measured by the number and proportion of satisfactory or satisfactory but limited smears in the following broad cytological categories:

1. Negative for dysplasia or malignancy
2. Total ASCUS (including ASCUS-HG)
3. LSIL (CIN 1 and/or HPV)
4. ASCUS-HG
5. HSIL
6. Total abnormalities (smears reported as ASCUS or more serious)

Target

There are targets for laboratory smear reporting for three of the broad categories:

1. Negative for dysplasia or malignancy: not more than 96%
2. HSIL: not less than 0.60%
3. Total abnormalities: not more than 10%

Calculation

The Bethesda diagnosis codes, as recorded on the NCSP Register, of satisfactory or satisfactory but limited smears taken during the reporting quarter were used to calculate the number of smears in each broad cytological category (see Appendix 2) for each laboratory. These were expressed as proportions of the total number of satisfactory or satisfactory but limited smears reported by each laboratory. Where a single smear had more than one diagnosis code, the most serious ranked code was used according to the hierarchy of codes. Total abnormalities included all smears with a diagnosis code of ASCUS or more serious abnormality according to the hierarchy of broad cytological categories. Smear results for women of all ages were included. Smears recorded as being unsatisfactory for evaluation were excluded.

Results

During the quarter, 97,488 satisfactory or satisfactory but limited smears were taken. The results of these, by laboratory are shown in Table 6. The number of such smears reported by each laboratory ranged from 1,708 for Canterbury Health Laboratories to 23,943 for Diagnostic Medlab Auckland. Overall, 90,364 (92.7%) smears were reported as negative for dysplasia or malignancy. This was identical to the proportion reported in the last quarter, and within the target of not more than 96% of smears being negative for dysplasia or malignancy. Although each laboratory did not exceed this upper limit, there was variation amongst the laboratories. The two hospital-based laboratories, Auckland Hospital Laboratory and Canterbury Health Laboratories, which are also the smallest volume laboratories, reported lower proportions of the smears they read as negative for dysplasia or malignancy compared with the other laboratories. This was most noticeable for Auckland Hospital Laboratory, which reported 74% of smears as negative for dysplasia or malignancy.

The proportion of smears reported with a HSIL abnormality was 1.1% for all laboratories combined. This figure met the target of not less than 0.6% and was identical to that reported for previous reporting quarters. Each laboratory individually also met that target. Both hospital-based laboratories (Auckland Hospital Laboratory and Canterbury Health Laboratories) reported high numbers of HSIL abnormalities. This was particularly noticeable for Auckland Hospital Laboratory, which reported 7% of all smears to be HSIL.

For all laboratories combined, the target of not more than 10% of smears reported as abnormal was achieved. This proportion was 7.3%, identical to the previous quarter. Both hospital-based laboratories reported more than 10% of smears they processed to be abnormal: Auckland Hospital Laboratory (26%) and Canterbury Health Laboratories (14.3%). The proportion for Auckland Hospital Laboratory is higher than for the last quarter (19.5%), whereas that from Canterbury Health Laboratories was similar to the last quarter (14.2%). The two laboratories (Medlab Bay of Plenty and Medlab Central) which reported more than 10% total abnormalities in the previous quarter returned to below 10% in this quarter.

The proportion of smears reported as LSIL varied from 1.8% (Southern Community Laboratory Christchurch) to 9.6% (Auckland Hospital Laboratory). In addition to Auckland, Medlab Hamilton, Medlab Central and Canterbury Health Laboratories all reported LSIL smears of over 5%. Note that no target is set for proportion of smears reported as LSIL.

Recommendations

Nil

Table 6: The number and proportion of satisfactory or satisfactory but limited smears in broad cytological categories for each laboratory.

| Laboratory | Negative for dysplasia or malignancy ¹ | | Total ASCUS (including ASCUS-HG) | | LSIL | | ASCUS-HG | | HSIL ² | | Total Abnormalities ³ | | Total smears |
|--------------------------------|---|-------------|----------------------------------|------------|--------------|------------|------------|------------|-------------------|------------|----------------------------------|------------|---------------|
| | No | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. |
| Auckland Hosp Laboratory | 1,541 | 74.0 | 200 | 9.6 | 189 | 9.1 | 30 | 1.4 | 145 | 7.0 | 542 | 26.0 | 2,083 |
| Canterbury Health Laboratories | 1,464 | 85.7 | 94 | 5.5 | 92 | 5.4 | 7 | 0.4 | 43 | 2.5 | 244 | 14.3 | 1,708 |
| Diagnostic Medlab Auckland | 22,678 | 94.7 | 546 | 2.3 | 512 | 2.1 | 24 | 0.1 | 192 | 0.8 | 1,265 | 5.3 | 23,943 |
| Medlab Wellington | 9,710 | 92.7 | 372 | 3.6 | 305 | 2.9 | 17 | 0.2 | 80 | 0.8 | 767 | 7.3 | 10,477 |
| Medlab Bay of Plenty | 5,421 | 90.7 | 330 | 5.5 | 151 | 2.5 | 7 | 0.1 | 56 | 0.9 | 558 | 9.3 | 5,979 |
| Medlab Central | 7,196 | 90.9 | 151 | 1.9 | 487 | 6.2 | 2 | <0.1 | 75 | 1.0 | 719 | 9.1 | 7,915 |
| Medlab Hamilton | 6,571 | 90.5 | 233 | 3.2 | 375 | 5.2 | 12 | 0.2 | 72 | 1.0 | 689 | 9.5 | 7,260 |
| Pathlab Waikato | 3,183 | 91.8 | 173 | 5.0 | 80 | 2.3 | 2 | <0.1 | 22 | 0.6 | 286 | 8.2 | 3,469 |
| SCL* Christchurch | 5,145 | 94.8 | 126 | 2.3 | 100 | 1.8 | 5 | 0.1 | 42 | 0.8 | 280 | 5.2 | 5,425 |
| SCL* Dunedin | 10,440 | 94.6 | 60 | 0.5 | 312 | 2.8 | 36 | 0.3 | 194 | 1.8 | 591 | 5.4 | 11,031 |
| Taranaki Medlab | 3,463 | 91.6 | 167 | 4.4 | 116 | 3.1 | 6 | 0.2 | 30 | 0.8 | 317 | 8.4 | 3,780 |
| Valley Diagnostic Laboratory | 3,545 | 95.1 | 34 | 0.9 | 100 | 2.7 | 3 | 0.1 | 47 | 1.3 | 181 | 4.9 | 3,726 |
| Medlab South Christchurch | 10,007 | 93.6 | 313 | 2.9 | 240 | 2.2 | 34 | 0.3 | 112 | 1.1 | 685 | 6.4 | 10,692 |
| Total | 90,364 | 92.7 | 2,799 | 2.9 | 3,059 | 3.1 | 185 | 0.2 | 1,110 | 1.1 | 7,124 | 7.3 | 97,488 |

* SCL: Southern Community Laboratory

Targets are: ¹ not more than 96%, ² not less than 0.6%, ³ not more than 10%

6.4 Laboratory cytology turn around time

Definition

Laboratory cytology turn around time is the period of time between a smear being received by the laboratory and the report being issued by the laboratory to the smear taker.

Target

The targets for the laboratory cytology turn around time are:

- 90% of smear reports issued to the smear taker within 7 working days of the smear being received by the laboratory

and

- 100% of smear reports issued to the smear taker within 14 working days of the smear being received by the laboratory.

Calculation

The difference between the date that the smear was received and the date that the smear was reported by the laboratory, as recorded by the NCSP Register, was used to measure the laboratory turn around time. The numbers of smears reported within 7 working days, between 8 and 14 working days and more than 14 working days were expressed as a proportion of the total number of smears processed by the laboratory during the quarter. Smears taken from enrolled women of all ages during the reporting period as recorded on the NCSP-Register were included.

Results

The proportion of smears received and reports issued within specified time periods during the period 1 April to 30 June 2003 for each laboratory processing cervical cytology are shown in Table 7. Overall, 94.8% of the 98,221 smears received by laboratories were reported within 7 working days. This was greater than the target of 90%, but less than that reported last quarter (94.8%). Eight of the thirteen laboratories achieved the 7-day target of 90%, compared to 12 of 13 in the last quarter. The 7-day cytology turn around time for Valley Diagnostic Laboratory was below 40% for in this quarter and the last (35.1%). Other laboratories to fall below the 7-day target were Pathlab Waikato, Medlab Wellington and Medlab Bay of Plenty.

Overall, the 14-day target of 100% was almost achieved. Two laboratories (Valley Diagnostic Laboratory and Canterbury Health Laboratories) did not meet the 14-day target, but they were close to achieving it. Only 81 of 98,221 smears (<0.1%) were not reported within 14 working days. For the previous reporting quarter, 49 smears were reported after 14 working days.

Recommendations

Service Issues

1. The following laboratories should work towards achieving and maintaining the 7-day cytology turn around time target: Pathlab Waikato, Medlab Wellington, Medlab

Bay of Plenty and Valley Diagnostic Laboratory. This is particularly important for Valley Diagnostic Laboratory, which falls well below the recommended target.

Table 7: Timeliness of the reporting of smears by laboratory

| Laboratory | Number of smears processed | Within 7 working days (%) | From 8 to 14 working days (%) | Within 14 working days (cumulative %) | More than 14 working days (%) |
|--------------------------------|-----------------------------------|----------------------------------|--------------------------------------|--|--------------------------------------|
| Auckland Hosp Laboratory | 2,131 | 99.9 | 0.1 | 100 | 0.0 |
| Canterbury Health Laboratories | 1,735 | 99.9 | 0.0 | 99.9 | 0.1 |
| Diagnostic Medlab Auckland | 24,020 | 100 | 0.0 | 100 | 0.0 |
| Medlab Wellington | 10,565 | 88.3 | 11.7 | 100 | 0.0 |
| Medlab Bay of Plenty | 6,006 | 86.8 | 13.2 | 100 | 0.0 |
| Medlab Central | 7,936 | 99.8 | 0.2 | 100 | 0.0 |
| Medlab Hamilton | 7,294 | 99.4 | 0.6 | 100 | 0.0 |
| Pathlab Waikato | 3,493 | 82.1 | 17.9 | 100 | 0.0 |
| SCL* Christchurch | 5,453 | 100 | 0.0 | 100 | 0.0 |
| SCL* Dunedin | 11,195 | 99.9 | 0.1 | 100 | 0.0 |
| Taranaki Medlab | 3,835 | 97.5 | 2.5 | 97.5 | 0.0 |
| Valley Diagnostic Laboratory | 3,762 | 39.4 | 58.6 | 98.0 | 2.0 |
| Medlab South Christchurch | 10,796 | 100 | 0.0 | 100 | 0.0 |
| Total | 98,221 | 94.8 | 5.1 | >99.9 | <0.1 |

* SCL: Southern Community Laboratory

Targets are 90% within 7 working days and 100% within 14 working days

6.5 Laboratory histology turn around time

Definition

Laboratory histology turn around time is the period of time between a cervical or vaginal histology specimen being received in the laboratory and the report being issued by the laboratory to the clinician. Histology specimens include diagnostic biopsies, treatment biopsies, cervical polyps and cervical tissue of total hysterectomy specimens.

Target

The targets for the laboratory histology turn around time are 90% of final histology reports issued within 5 working days of the specimen being received by the laboratory, and 100% of final histology reports issued within “a reasonable time period” of the specimen being received by the laboratory. A reasonable time period is not defined, but the NSCP Interim Operational Policy and Quality Standards (2000) states that “If it is likely to take more than 10 days for the result to be reported the colposcopist should be informed”.

Calculation

The difference between the date that the cervical histology specimen was received and the date that the histology result was reported by the laboratory, as recorded on the NCSP Register, was calculated for each laboratory that processed cervical histology. For each laboratory, the numbers of cervical histology specimens received during the quarter and reported within 5 working days or 6-10 working days or more than 10 working days were expressed as proportions of the total number of cervical histology specimens received by each laboratory during the quarter. Cervical histology specimens taken from enrolled women of all ages during the reporting period as recorded on the NCSP Register were included.

Results

The timeliness of histology reporting by the 29 laboratories which provided results to the NCSP Register in this quarter is shown in Table 8. There were a total of 7,027 histology specimens were recorded on the NCSP Register, compared to 6,053 in the previous quarter. The number of histology specimens reported by each laboratory varied considerably, ranging from 6 in the Memorial Hospital, Hastings to 915 in the Diagnostic Medlab Auckland. For all laboratories combined, the proportion of histological specimens reported on within five days histology was 91.8%, exceeding the target of 90%, but slightly reduced from the figure reported in the last quarter (93.9%).

Seven laboratories did not meet the 5-day 90% target: Auckland Hospital Laboratory (60.7%), Hutt Hospital Laboratory (84.2%), Waikato Hospital (83.8%), Medical Laboratory Hamilton (85.7%), Northland Pathology (82.5%), Rotorua Hospital Laboratory (64.5%) and Wellington Hospital Laboratory (75.1%). Four of these also did not meet the 90% target in the previous quarter (Auckland Hospital Laboratory, Hutt Hospital Laboratory, Rotorua Hospital Laboratory and Wellington Hospital Laboratory). Most laboratories had reported all or almost all histology results within

10 working days of the specimen arriving at the laboratory. Overall, 114 of 7,027 (1.6%) were reported more than 10 working days after the time the specimens were received by the laboratory.

This is more than double the number of histology specimens reported after 10 working days last reporting quarter (n=46). Auckland Hospital Laboratory and Rotorua Hospital Laboratory each reported more than 10% of their histological results 11 or more working days after their receiving the cervical histology specimen.

Recommendations

Service Issues

1. The National Screening Unit should seek an explanation from Auckland Hospital Laboratory for the relatively low proportion of histology specimens reported within 5 working days and the lack of improvement from 60.9 in the previous quarter to 60.7 in this quarter.
2. The process around managing histology reporting in Rotorua Hospital Laboratory needs to be reviewed in detail.
3. The National Screening Unit should seek an explanation why, in addition to Auckland Hospital Laboratory and Rotorua Hospital Laboratory, Hutt Hospital Laboratory and Wellington Hospital Laboratory fell below the targets on two consecutive reporting periods.
4. The following laboratories should continue to work towards achieving their 5-day histology turn around time target: Waikato Hospital, Medical Laboratory Hamilton, Northland Pathology.

Table 8: Timeliness of the reporting of histology by laboratory

| Laboratory | Number of histology specimens | Within 5 working days (%) | 6-10 working days (%) | 11 or more working days (cumulative %) |
|--------------------------------|--------------------------------------|----------------------------------|------------------------------|---|
| Auckland Hospital Laboratory | 290 | 60.7 | 26.2 | 13.1 |
| Diagnostic Medlab Auckland | 915 | 99.1 | 0.9 | 0.0 |
| Pathlab Waikato | 157 | 96.8 | 3.2 | 0.0 |
| Nelson Diagnostic Laboratory | 66 | 100 | 0.0 | 0.0 |
| Memorial Hospital Hastings | 6 | 100 | 0.0 | 0.0 |
| Hutt Hospital | 165 | 84.2 | 13.3 | 2.4 |
| Medlab Southland | 44 | 100 | 0.0 | 0.0 |
| Waikato Hospital | 475 | 83.8 | 15.2 | 1.0 |
| Valley Diagnostic Laboratory | 77 | 97.4 | 1.3 | 1.3 |
| Medlab Hamilton | 56 | 85.7 | 12.5 | 1.8 |
| Middlemore Hospital | 245 | 100 | 0.0 | 0.0 |
| Medlab South Christchurch | 71 | 100 | 0.0 | 0.0 |
| Medlab Bay of Plenty | 513 | 97.9 | 2.1 | 0.0 |
| Medlab Wellington | 250 | 93.6 | 6.0 | 0.4 |
| Nelson Hospital | 171 | 94.7 | 4.7 | 0.6 |
| North Shore Hospital | 447 | 99.3 | 0.7 | 0.0 |
| Canterbury Health Laboratories | 499 | 92.4 | 6.8 | 0.8 |
| Medlab Central | 539 | 91.8 | 8.0 | 0.2 |
| Northland Pathology | 246 | 82.5 | 15.5 | 2.0 |
| Rotorua Hospital | 121 | 64.5 | 24.8 | 10.7 |
| SCL* Christchurch | 157 | 100 | 0.0 | 0.0 |
| SCL* Dunedin | 524 | 98.3 | 0.7 | 1.0 |
| Southland Hospital | 226 | 94.2 | 5.3 | 0.4 |
| SCL* Hawke's Bay | 36 | 100 | 0.0 | 0.0 |
| Taranaki Base Hospital | 138 | 94.2 | 5.1 | 0.7 |
| Medlab Timaru | 96 | 100 | 0.0 | 0.0 |
| Medlab Taranaki | 53 | 96.2 | 3.8 | 0.0 |
| Wanganui Hospital | 74 | 94.6 | 5.4 | 0.0 |
| Wellington Hospital | 370 | 75.1 | 16.0 | 9.0 |
| Total | 7027 | 91.8 | 6.6 | 1.6 |

* SCL: Southern Community Laboratory

Targets: 90% within 5 working days and 100% within a reasonable period of time

6.6 Satisfactory but limited and unsatisfactory smears by laboratory

Definition

Satisfactory but limited smears are those smears reported with a Bethesda adequacy code of A2. Unsatisfactory smears are those smears reported with a Bethesda adequacy of A3. Details of the Bethesda system are given in Appendix 2. It is important to note that the adequacy coding of a smear is influenced by both smear taking technique and laboratory reporting practice. The revised Bethesda System 2001 no longer includes a satisfactory but limited category. When the NCSP adopts the revised Bethesda System 2001, consideration will be given to changing the current target for unsatisfactory smears.

Target

The target for satisfactory but limited smears is not more than 20% of all smears reported for a given laboratory. The target for unsatisfactory smears is not less than 0.5% and not more than 2.0% of all smears reported for a given laboratory.

Calculation

All smears taken during the reporting quarter for which there was a result recorded on the NCSP Register were used to calculate these indicators. The number of satisfactory but limited smears and the number of unsatisfactory smears reported were both expressed as a proportion of the total number of smears processed during the quarter by each cytology reporting laboratory.

Results

The number and proportion of satisfactory but limited and unsatisfactory smears taken during the quarter and reported by each cytology laboratory is shown in Table 9. Overall, 98,221 smears were processed, of which 16.7% were reported as satisfactory but limited. This is slightly lower than the figure reported for the last quarter (17.8%) and within the target of not more than 20%. Among the laboratories, the proportion of satisfactory but limited smears varied considerably. This proportion ranged from 8.1% for Southern Community Laboratory Dunedin to 22.1% for Diagnostic Medlab Auckland. Auckland Hospital Laboratory (20.4%) and Medical Laboratory Taranaki (20.2%) also reported more than 20% of the smears they read as satisfactory but limited. Medlab Wellington, which reported 21% satisfactory but limited smears in the last quarter had achieved well under the 20% target in this quarter (15.4%).

Overall, 733 (0.7%) of the 98,221 smears processed were reported as unsatisfactory for evaluation. This is a similar figure to that reported in the last quarter (0.8%) and within the target range of 0.5% to 2.0%. Auckland Hospital Laboratory reported more than 2.0% of smears as unsatisfactory (2.3%), although this is lower than reported in the last quarter (2.9%). The following four laboratories reported less than 0.5% of smears they read as unsatisfactory: Diagnostic Medlab Auckland and Medlab Central. Both Diagnostic Medlab Auckland and Medlab Central had also failed to meet the 0.5% threshold in the previous quarter.

Recommendations

Nil

Table 9: The number and proportion of satisfactory but limited and unsatisfactory smears by laboratory

| Laboratory | Number of smears processed | Satisfactory but limited Smears ¹ | | Unsatisfactory Smears ² | |
|--------------------------------|----------------------------|--|----------------|------------------------------------|----------------|
| | | Number | Proportion (%) | Number | Proportion (%) |
| Auckland Hosp Laboratory | 2131 | 434 | 20.4 | 48 | 2.3 |
| Canterbury Health Laboratories | 1735 | 275 | 15.9 | 27 | 1.6 |
| Diagnostic Medlab Auckland | 24020 | 5307 | 22.1 | 77 | 0.3 |
| Medlab Wellington | 10565 | 1622 | 15.4 | 88 | 0.8 |
| Medlab Bay of Plenty | 6006 | 927 | 15.4 | 27 | 0.5 |
| Medlab Central | 7936 | 1356 | 17.1 | 21 | 0.3 |
| Medlab Hamilton | 7294 | 1052 | 14.4 | 34 | 0.5 |
| Pathlab Waikato | 3493 | 514 | 14.7 | 24 | 0.7 |
| SCL* Christchurch | 5453 | 582 | 10.7 | 28 | 0.5 |
| SCL* Dunedin | 11195 | 903 | 8.1 | 164 | 1.5 |
| Taranaki Medlab | 3835 | 775 | 20.2 | 55 | 1.4 |
| Valley Diagnostic Laboratory | 3762 | 643 | 17.1 | 36 | 1.0 |
| Medlab South Christchurch | 10796 | 1998 | 18.5 | 104 | 1.0 |
| Total | 98221 | 16388 | 16.7 | 733 | 0.7 |

Targets: ¹not more than 20%, ² 0.5 to 2%

* SCL: Southern Community Laboratory

6.7 Cytology reports predicting HSIL (positive predictive value)

Definition

Cytology reports predicting HSIL is the probability of a histological report of HSIL or more serious abnormality given an HSIL or invasive carcinoma cytology report. This is called the positive predictive value (PPV) of an HSIL cytology report.

Target

The target for cytology reports predicting HSIL is not less than 65% and not more than 85% of all HSIL or invasive carcinoma cytology results reported by a given laboratory.

Calculation

The first satisfactory smear from women reported as indicating the presence of HSIL or invasive squamous carcinoma in the six month period 1 July to 31 December 2002, and any subsequent histology reports for biopsies taken within 6 months of the smear from the same women during the 12 month period 1 July 2002 to 30 June 2003 were compared. When more than one histology result was present, the most severe abnormality was chosen. The number of women with histological confirmation of an HSIL or more serious lesion was expressed as a proportion of all women with an HSIL or invasive carcinoma cytology report and subsequent histology. This measures the positive predictive value (PPV) of a HSIL cytology report.

The proportion of HSIL or invasive carcinoma cytology reports without a follow up histology report was also calculated for each laboratory. The PPV of HSIL indicator was calculated for each laboratory according to where the smears were read.

Results

The number of high grade or invasive carcinoma cytology reports for which there were follow-up histology reports on the NCSP Register, by laboratory, is shown in Table 10. This table also shows the proportion of these cytology reports which were confirmed on histology as HSIL or a more serious abnormality and the proportion of women with no histological follow-up.

During this period, there were 1,908 HSIL or invasive carcinoma cytology reports, of which, 1,694 (88.8%) had a subsequent histology recorded on the NCSP Register. Of the 1,694 with confirmed histology, 1,228 (72.5%) of these were confirmed as having HSIL or more serious abnormality on histology. This positive predictive value (PPV) is within the target range of 65 to 85%.

Three laboratories reported PPVs of a high grade or invasive cytology report outside this target range. The three laboratories were Pathlab Waikato (57.1%), Valley Diagnostic Laboratories (56.3%) and Canterbury Health Laboratories (61.4%). In Report 9, which reported on high grade or invasive cytology reports for the period 1 January to 30 June 2002, the PPVs for these three laboratories were 61.8%, 66.0% and 71.7% respectively, i.e. the PPV in each region fell over the period between this report and Report 9.

For all laboratories combined, no histology results were recorded on the NCSP Register for 11.2% of HSIL or invasive carcinoma cytology reports. This proportion varied amongst the laboratories, ranging from 4.7% for SCL Christchurch to 15.5% for Medlab Wellington. Reasons for these apparent omissions are described in Section 6.1 and could include i) women who have moved overseas and had follow-up there, ii) women who did not have an indication for biopsy at colposcopic examination, iii) women who opted to not allow their histology results to be recorded on the NCSP Register or iv) histology results which were not forwarded or not recorded on the NCSP Register.

Recommendations

Data Issues

Some further analysis e.g. confidence intervals is to be undertaken on the PPV reporting for the laboratories.

Service Issues

1. The NSU should investigate the following laboratories whose reporting of PPV for HSIL is below the target: Canterbury Health Laboratories, Pathlab Waikato and Valley Diagnostic.

Table 10: Cytology reports predicting HSIL by laboratory

| Laboratory | Number of HSIL or invasive carcinoma cytology reports with a follow up histology report | Proportion (%) of HSIL or invasive carcinoma cytology reports confirmed on histology | Proportion of all HSIL or invasive carcinoma cytology reports without a follow up histology report |
|--------------------------------|---|--|--|
| Auckland Hospital Laboratory | 180 | 70.6 | 11.3 |
| Canterbury Health Laboratories | 44 | 61.4 | 10.2 |
| Diagnostic Medlab Auckland | 366 | 73.0 | 13.1 |
| Medlab Wellington | 125 | 68.0 | 15.5 |
| Medlab Bay of Plenty | 114 | 70.2 | 10.9 |
| Medlab Central | 132 | 70.5 | 14.8 |
| Medlab Hamilton | 79 | 83.5 | 13.2 |
| Pathlab Waikato | 42 | 57.1 | 14.3 |
| SCL* Christchurch | 61 | 78.7 | 4.7 |
| SCL* Dunedin | 264 | 83.3 | 8.0 |
| Taranaki Medlab | 74 | 68.9 | 8.6 |
| Valley Diagnostic Laboratory | 71 | 56.3 | 6.6 |
| Medlab South Christchurch | 142 | 70.4 | 9.0 |
| Total | 1,694 | 72.5 | 11.2 |

* SCL: Southern Community Laboratory

Target = 65 to 85%

Since the publication of this Report, the calculations for both positive predictive value (PPV) and short interval re-screening have been found to be erroneous. Therefore, the values of PPV and short interval re-screening should be interpreted with caution. The calculation methods for PPV and short-interval re-screening will be corrected from *Quarterly Monitoring Reports* 19 for PPV and 22 for short-interval re-screening.

6.8 Satisfactory but limited and unsatisfactory smears by smear-taker

Definition

Definitions and a description of issues surrounding satisfactory but limited and unsatisfactory smears are given on Page 27.

Target

The target for satisfactory but limited smears is not more than 20% of all smears reported for each smear taker category. The target for unsatisfactory smears is not less than 0.5% and not more than 2.0% of all smears reported for each smear taker category.

Calculation

Smears taken from enrolled women of all ages during the reporting quarter for which there was a result recorded on the NCSP Register were used to calculate these indicators. The total number of smears recorded against each smear taker for the 12 months prior to the end of the reporting quarter was used to calculate the annual volume of smears taken by each smear taker. For each smear taker group, the number of satisfactory but limited smears was expressed as a proportion of the total number of smears taken by each group. For each smear taker group, the number of unsatisfactory smears was expressed as a proportion of the total number of smears taken by each group.

Results

The numbers and proportions of satisfactory, satisfactory but limited and unsatisfactory smears taken in this quarter by annual volume of smears taken in each smear taker group is shown in Table 11. Overall, 196,442 smears were taken during the reporting quarter, of which 14 (<1%) were taken by lay smear takers, 62,675 (64%) by medical smear takers, 26,523 (27%) by nurses, 8,557 (9%) by specialists and 452 (<1%) by midwives. These proportions are similar to those reported in the last quarter, although the overall volume in this quarter was slightly lower (2000 fewer smears were taken).

Of the 98,221 smears, 82.6% were considered satisfactory, 16.7% were considered satisfactory but limited and 0.8% were considered unsatisfactory for evaluation. As noted in Section 6.6, the overall proportions of satisfactory but limited and of unsatisfactory smears were both within the targets. The proportion considered satisfactory was slightly higher than in the last quarter (82.6% compared to 81.4%), accounted for by the lightly lower number of satisfactory but limited smears in this quarter compared to last quarter (16.7% vs. 17.8%).

The proportion of satisfactory but limited smears was within the target of not more than 20% for each smear taker group as a whole. When smear taker groups were considered by annual volume, the proportion of satisfactory but limited smears was greater than 20% for medical and specialist smear takers who took fewer than 30 smears in the 12 months prior to 30 June 2003 and for midwives who took fewer than 100 smears in that period. The subgroup with the lowest proportion of satisfactory but

limited smears was midwives who took over 100 smears annually (12.5%) followed by nurses who took over 100 smears annually (13.6%).

The proportion of unsatisfactory smears was within the target range of 0.5 to 2.0 % for the medical smear taker, nurse, specialist and midwife groups. For lay smear takers, one of the 14 smears taken during the quarter were considered unsatisfactory for assessment. The only subgroup of non-lay smear takers amongst whom the proportion of unsatisfactory smears was above the target range was specialists who took under 30 smears annually (3.3%), although this proportion is based on only four women.

Recommendations

Nil

Table 11: The number and proportion (%) of satisfactory but limited and unsatisfactory smears for each smear taker group

| Smear taker group | Annual volume of smears | Total number of smears taken in quarter | Satisfactory smears | | Satisfactory but limited smears | | Unsatisfactory Smears | |
|-------------------|-------------------------|---|---------------------|-------------|---------------------------------|-------------|-----------------------|------------|
| | | | Number | % | Number | % | Number | % |
| Lay | <30 | 14 | 11 | 78.6 | 2 | 14.3 | 1 | 7.1 |
| | 30-100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | >100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 14 | 11 | 78.6 | 2 | 14.3 | 1 | 7.1 |
| Medical | <30 | 3,843 | 2,953 | 76.8 | 830 | 21.6 | 60 | 1.6 |
| | 30-100 | 17,649 | 14,319 | 81.1 | 3,177 | 18.0 | 153 | 0.9 |
| | >100 | 41,183 | 33,779 | 82.0 | 7,132 | 17.3 | 272 | 0.7 |
| | Total | 62,675 | 51,051 | 81.5 | 11,139 | 17.8 | 485 | 0.8 |
| Nurse | <30 | 1,817 | 1,445 | 79.5 | 358 | 19.7 | 14 | 0.8 |
| | 30-100 | 9,637 | 8,164 | 84.7 | 1,414 | 14.7 | 59 | 0.6 |
| | >100 | 15,069 | 12,938 | 85.9 | 2,053 | 13.6 | 78 | 0.5 |
| | Total | 26,523 | 22,547 | 85.0 | 3,825 | 14.4 | 151 | 0.6 |
| Specialist | <30 | 121 | 87 | 71.9 | 30 | 24.8 | 4 | 3.3 |
| | 30-100 | 862 | 697 | 80.9 | 152 | 17.6 | 13 | 1.5 |
| | >100 | 7,574 | 6,342 | 83.7 | 1,157 | 15.3 | 75 | 1.0 |
| | Total | 8,557 | 7,126 | 83.3 | 1,339 | 15.7 | 92 | 1.1 |
| Midwife | <30 | 141 | 106 | 75.2 | 35 | 24.8 | 0 | 0 |
| | 30-100 | 70 | 52 | 74.3 | 18 | 25.7 | 0 | 0 |
| | >100 | 241 | 207 | 85.9 | 30 | 12.5 | 4 | 1.7 |
| | Total | 452 | 365 | 80.8 | 83 | 18.4 | 4 | 0.9 |
| Total | | 196,442 | 81,100 | 82.6 | 16,388 | 16.7 | 733 | 0.8 |

The targets are not more than 20% for Satisfactory but limited smears and 0.5 to 2% for unsatisfactory smears

6.9 Waiting time for colposcopic assessment for HSIL or ASCUS-HG

Definition

The waiting time for colposcopic assessment for HSIL or ASCUS-HG is the time from the receipt of a referral to a DHB colposcopy service for women with a high grade cytology result to the time of the first colposcopic assessment.

Target

The target is 95% or more of women with a high grade cytology result to have a colposcopic assessment within 4 weeks.

Calculation

The number of women with an HSIL or ASCUS possible high grade cytology result who were referred to a DHB colposcopy clinic each month, and the number of women with an HSIL or ASCUS possible high grade cytology result who were waiting longer than 4 weeks for a colposcopic assessment at the end of each month were reported by DHB colposcopy services.

Results

The number of women with an HSIL or ASCUS-HG cytology result referred for a colposcopic assessment to each DHB colposcopy service each month for this quarter is shown in Table 12. This Table also shows the number of these women who were waiting longer than 4 weeks at the end of each month. Five DHB colposcopy reporting units did not provide any data for this quarter. The five units were Good Health Wanganui, Hutt Valley Health, Northland Health, Pacific Health Whakatane and Tairāwhiti Healthcare. Three other units (South Auckland Health, Southern Health and Waitemata Health) did not provide complete colposcopy data. Of these eight units with missing or incomplete data, six had missing or incomplete data in the previous quarter (Northland Health, Pacific Health Whakatane, South Auckland Health, Southern Health, Tairāwhiti Healthcare and Waitemata Health).

Among the 14 colposcopy units that provided complete data to the NSU, the number and proportion of women with an HSIL or ASCUS-HG cytology abnormality who waited longer than 4 weeks varied considerably. Five units reported that no woman waited longer than 4 weeks during this quarter. These were Canterbury Health, Healthcare Otago, Lakeland Health, MidCentral Health and Pacific Health Tauranga. There appears to be a particular backlog of referrals for Healthcare Hawke's Bay, where the number of women still awaiting a referral at the end of each month was great than the number of women who had been referred that month. Hawke's Bay had incomplete data in the previous quarter, so these results cannot be compared with earlier data.

Recommendations

Data Issues

1. A suitable process to collect data required for calculating the colposcopy waiting time indicators is urgently required in order to monitor colposcopy services.

2. Efforts to collect data from those DHB colposcopy units who have not provided data should continue.

Service Issues

1. The NSU need to investigate why there appears to be a backlog of colposcopic assessments for high grade cytology results in Hawke's Bay, where there is a particularly high number of women waiting longer than the recommended four weeks.
2. Efforts to reduce the waiting time in other units with women waiting longer than four weeks following a HSIL or ASCUS-HG cytology result need to continue.

Table 12: Waiting time for colposcopic assessment of HSIL or ASCUS-HG by DHB colposcopy service

| DHB Colposcopy Reporting Unit | Number of women referred for colposcopic assessment of HSIL or ASCUS-HG | | | Number of women referred waiting longer than 4 weeks at the end of each month | | |
|-------------------------------|---|------------|------------|---|-----------|-----------|
| | April | May | June | April | May | June |
| | Auckland Healthcare | 15 | 32 | 4 | 1 | 4 |
| Canterbury Health | 32 | 31 | 24 | 0 | 0 | 0 |
| Capital Coast Health | 12 | 13 | 14 | 1 | 0 | 2 |
| Coast Healthcare West Coast | 4 | 1 | 1 | 6 | 0 | 7 |
| Good Health Wanganui | | | | | | |
| Health South Canterbury | 4 | 3 | 5 | 0 | 0 | 1 |
| Health Waikato | 16 | 10 | 11 | 4 | 4 | 1 |
| Healthcare Hawke's Bay | 8 | 8 | 11 | 12 | 11 | 16 |
| Healthcare Otago | 20 | 31 | 34 | 0 | 0 | 0 |
| Hutt Valley Health | | | | | | |
| Lakeland Health | 5 | 5 | 6 | 0 | 0 | 0 |
| MidCentral Health | 9 | 10 | 8 | 0 | 0 | 0 |
| Nelson/Marlborough Health | 4 | 1 | 6 | 0 | 1 | 0 |
| Northland Health | | | | | | |
| Pacific Health Tauranga | 4 | 2 | 18 | 0 | 0 | 0 |
| Pacific Health Whakatane | | | | | | |
| South Auckland Health | | 67 | | | | |
| Southern Health | 21 | 16 | 17 | 5 | 3 | |
| Tairāwhiti Healthcare | | | | | | |
| Taranaki Healthcare | 9 | 15 | 23 | 0 | 1 | 1 |
| Wairarapa Health | 1 | 4 | 4 | 1 | 1 | 0 |
| Waitemata Health | | | | 0 | 0 | 0 |
| Total | 164 | 249 | 185 | 30 | 22 | 29 |

6.10 Waiting time for colposcopic assessment for LSIL or ASCUS

Definition

The waiting time for colposcopic assessment for LSIL is the time from the receipt of a referral to a DHB colposcopy service for women with a low grade (LSIL or ASCUS) cytology result to the time of the first colposcopic assessment.

Target

The target is 95% or more of women with a low grade cytology result to have a colposcopic assessment within 26 weeks.

Calculation

The number of women with a low grade cytology result who were referred to a DHB colposcopy clinic each month, and the number of women with a low grade cytology result who were waiting longer than 26 weeks for a colposcopic assessment at the end of each month were reported by DHB colposcopy services.

Results

The number of women with low grade cytology results referred each month for a colposcopic assessment by DHB colposcopy service is shown in Table 13. The reported number of referred women waiting longer than 26 weeks at the end of each month for each DHB colposcopy service is also shown in this Table. Five colposcopy units did not provide any data for this indicator, compared to six in the last quarter. The five units were Good Health Wanganui, Hutt Valley Health, Northland Health, Pacific Health Whakatane and Tairāwhiti Healthcare. A further three units (South Auckland Health, Southern Health and Waitemata Health) did not provide complete data on the numbers of women referred or waiting times for these women. Of these eight, four also reported incomplete or no data in the last quarter (Pacific Health Whakatane, South Auckland Health, Southern Health and Waitemata Health).

Amongst those DHB colposcopy services that provided complete data to the NSU, the number of women referred for an assessment of a low grade abnormality waiting longer than 26 weeks at the end of each month during the reporting period varied considerably between DHBs. Six units (Auckland Healthcare, Healthcare Otago, Nelson/ Marlborough Health, Pacific Health Tauranga, Taranaki Healthcare and Waitemata Health) each reported no women were reported to be waiting longer than 26 weeks at the end of each month of the report (April, May and June 2003).

A large number of women waiting more than 26 weeks was reported by Lakeland Health and Health Waikato. Similar numbers were reported for the previous quarter by Lakeland Health, although colposcopy data were not provided for the third month of that quarter (March 2003). Health Waikato did not report any colposcopy data in the last quarter.

Recommendations

Data Issues

1. A suitable process to collect data required for calculating the colposcopy waiting time indicators is urgently required in order to monitor colposcopy services.
2. Efforts to collect data from those DHB colposcopy units who have not provided data should continue.
3. In this quarter, the recommendation is that particular attention should be paid to the following units, which have failed to provide complete colposcopy data in two consecutive quarters: Northland Health, Pacific Health Whakatane, South Auckland Health, Southern Health, Tairāwhiti Healthcare and Waitemata Health.

Service Issues

1. Efforts to reduce the number of women with low grade cytology waiting more than 26 weeks for colposcopic assessment should continue.
2. The NSU should investigate why so many women with a low grade smear are waiting longer than the recommended time for colposcopic assessment at Lakeland Health and Health Waikato.
3. The NSU needs to consider if the resource allocated to this area is a national issue.

Table 13: Waiting time for colposcopic assessment of LSIL or ASCUS by DHB colposcopy service

| DHB Colposcopy Reporting Unit | Number of women referred for colposcopic assessment of LSIL or ASCUS | | | Number of women referred waiting longer than 26 weeks at the end of each month | | |
|-------------------------------|--|------------|------------|--|------------|------------|
| | April | May | June | April | May | June |
| | Auckland Healthcare | 23 | 40 | 25 | 0 | 0 |
| Canterbury Health | 69 | 68 | 47 | 1 | 1 | 1 |
| Capital Coast Health | 36 | 39 | 53 | 2 | 0 | 0 |
| Coast Healthcare West Coast | 2 | 2 | 1 | 4 | 0 | 0 |
| Good Health Wanganui | | | | | | |
| Health South Canterbury | 10 | 13 | 14 | 7 | 8 | 10 |
| Health Waikato | 49 | 48 | 52 | 235 | 183 | 145 |
| Healthcare Hawke's Bay | 6 | 10 | 8 | 5 | 6 | 21 |
| Healthcare Otago | 1 | 20 | 21 | 0 | 0 | 0 |
| Hutt Valley Health | | | | | | |
| Lakeland Health | 11 | 21 | 33 | 133 | 106 | 44 |
| MidCentral Health | 16 | 26 | 25 | 5 | 0 | 5 |
| Nelson/Marlborough Health | 18 | 31 | 22 | 0 | 0 | 0 |
| Northland Health | | | | | | |
| Pacific Health Tauranga | 20 | 15 | 40 | 0 | 0 | 0 |
| Pacific Health Whakatane | | | | | | |
| South Auckland Health | | 48 | | | | |
| Southern Health | 10 | 19 | 6 | 6 | 10 | |
| Tairāwhiti Healthcare | | | | | | |
| Taranaki Healthcare | 11 | 16 | 24 | 0 | 0 | 0 |
| Wairarapa Health | 5 | 4 | 4 | 0 | 2 | 1 |
| Waitemata Health | | | | 0 | 0 | 0 |
| Total | 287 | 420 | 375 | 398 | 316 | 227 |

7. Appendix 1: Indicators not included in this report

1. Short interval re-screening

Definition

Short interval re-screening is the proportion of enrolled women with a normal smear history who have had a smear earlier than the recommended 3-year interval.

Excessive short interval re-screening represents an overuse of limited resources.

Three-yearly cervical screening is considered to reduce cervical cancer incidence by 91.4% compared with 93.4% if annual screening is done, while costs are much higher.

Target

The target for short interval re-screening is less than 10%.

Reporting Frequency

Quarterly

2. Delayed re-screening for women with a high grade abnormality

Definition

Re-screening for women with a high grade abnormality is the proportion of women participating in the NCSP with a history of a high grade abnormality who have completed treatment and had a smear within specified time periods. For these women, if their last smear was more than 15 months previously it was considered delayed.

Target

The targets for re-screening for women with HSIL or more serious abnormality are 85% for a smear within the last 15 months and 99% within the last 18 months.

Reporting Frequency

Quarterly

3. Enrolment

Definition

Enrolled women were defined as women aged 20-69 years at the end of the reporting period who had ever had a smear recorded on the NCSP-Register. Women who were recorded on the NCSP-Register as deceased, living overseas, being too ill to continue being screened or having had indicated to the programme they did not wish to have any more smears were excluded. Women with a normal smear history who were recorded on the NCSP-Register as no longer participating in routine screening because they had had a hysterectomy for a benign reason were also excluded.

Target

There is no target for enrolment, but changes over time will be monitored.

Reporting Frequency

Annual

4. Participation

Definition

Participation is the proportion of 20-69 year old enrolled women who have had a smear recorded on the NCSP-Register within the 6 years prior to the end of the reporting period.

Targets

The targets for participation were 85% for the unadjusted population and 90% for the hysterectomy-adjusted population. Following a recommendation by the IMG-NCSP, the target for participation for the unadjusted population was lowered to 80% in December 2001. The target for the adjusted population is unchanged.

Reporting Frequency

Annual

5. Coverage

Definition

Coverage is the proportion of 20-69 year old enrolled women who have had a cervical smear recorded on the NCSP-Register in the 36 months prior to the end of the reporting period. A 36-month period was used because this is the recommended cervical screening interval for women in New Zealand. Also, international comparisons will be possible.

Targets

The targets for coverage are 80% for the unadjusted population and 85% for the hysterectomy-adjusted population.

Reporting Frequency

Annual

6. Women enrolled on the register but not currently participating

Definition

Non-participants are enrolled women who have not had a smear recorded on the NCSP Register in the 6 years prior to the end of the reporting period.

Target

There is no target for this indicator.

Reporting Frequency

Annual

7. Re-participation rate

Definition

The re-participation rate is the proportion of enrolled women who had no smear results recorded on the NCSP-Register in the 6 years prior to the reporting period, and who had a smear result recorded on the NCSP-Register during the reporting period. It is a measure of effective health promotion activities aimed at encouraging women overdue for a smear to have another.

Target

There is no target for this indicator.

Reporting Frequency

Annual

8. Cervical cancer incidence and stage of invasive cervical cancer

Definitions

Cervical cancer incidence is the annual rate of new registrations of invasive cervical cancer (ICD9 code 180) per 100,000 women, age-standardised to Segi's World population. The stage of invasive cervical cancer is the classification of the extent of invasive cervical cancer cases at diagnosis by FIGO staging (I-V).

Targets

The targets for cervical cancer incidence are 8.6 or less per 100,000 women by 2005 for all women and 11.0 or less per 100,000 women by 2005 for Māori women. The target for stage of cervical cancer is 70% or more of new cervical cancers classified as FIGO stage I at diagnosis.

Reporting Frequency

Annual

9. Cervical cancer mortality

Definition

Cervical cancer mortality is the annual rate of death from cervical cancer (ICD9 code 180) per 100,000 women, age standardised to Segi's world population.

Targets

The targets for cervical cancer mortality are 2.5 or less per 100,000 women by 2005 for all women and 6.0 or less per 100,000 women by 2005 for Māori women.

Reporting Frequency

Annual

10. Cytology abnormality reporting

Definition

Cytology abnormality reporting is the rate at which specified cytological cervical abnormalities are reported. A cytological abnormality may not be confirmed at clinical examination or biopsy. For the purposes of this monitoring report, cytological abnormality reporting is the rate at which cytological cervical abnormalities are recorded by the NCSP Register for a specified time period.

Targets

There are no targets.

Reporting Frequency

Annual

11. Histology abnormality reporting

The Systematised Nomenclature of Medicine (SNOMED) histology codes are used by the NCSP Register to record the histological result of vaginal and cervical histology specimens. Each histology specimen can be assigned a maximum of five SNOMED codes. Laboratories usually code histology results and the coded results are transferred electronically to the NCSP Register. Histology specimens include diagnostic biopsies, treatment biopsies, polyps and the cervical tissue of total hysterectomy specimens.

Definition

Histology abnormality reporting is the rate at which specified histological cervical abnormalities are reported. For the purposes of this monitoring report, histology abnormality reporting is the rate at which histological cervical abnormalities are recorded by the NCSP Register for a specified time period.

Targets

There are no targets.

12. Interval cancers

Definition

Interval cancers are those invasive cervical cancers diagnosed between screening examinations in women whose cytology results were negative for dysplasia or malignancy at their last smear.

Target

There is no target.

Reporting Frequency

Annual

13. Programme sensitivity

Definition

Programme sensitivity is the proportion of all women with invasive cervical cancer (both screen detected and interval cases) whose cervical cancer was detected by screening within a defined period.

Targets

The targets for squamous cervical cancer are more than 85% at one year and more than 75% at three years.

14. Opt off rate

Definition

The opt off rate is the proportion of all cervical cytology results reported by a laboratory which are not sent to the NCSP Register.

Target

There is no target.

Reporting Frequency

Annual

15. Accuracy of negative cytology reports

Definition

The accuracy of negative cytology reports is the ability of a laboratory to correctly identify a negative smear.

Target

For women with a histological diagnosis of HSIL or more serious, not more than 20% of their cytology slides reported within the preceding 42 months as negative are, on review, consistent with HSIL or more serious abnormality.

Reporting Frequency

Annual

16. Residual high grade disease after treatment

Definition

Residual high grade disease after treatment is high grade squamous (CIN2-3) or glandular intraepithelial lesions present at the post treatment colposcopy (usually at 4-6 months) for all methods of treatment.

Target

The target is 15% or less with residual high grade disease.

Reporting Frequency

Annual

8. Appendix 2: The Bethesda Coding Standard (1998)

The hierarchy of broad cytological categories is:

- (a) Negative for dysplasia or malignancy
- (b) Abnormal not otherwise specified
- (c) Atypical squamous cells of undetermined significance (ASCUS), excluding ASCUS possible high grade
- (d) Low grade squamous intraepithelial lesion (LSIL)
- (e) Atypical glandular cells of undetermined significance (AGUS) favouring a reactive process
- (f) Atypical glandular cells of undetermined significance (AGUS) favouring a dysplastic or neoplastic process
- (g) ASCUS possible high grade
- (h) High grade squamous intraepithelial lesion (HSIL)
- (i) Adenocarcinoma-in-situ (AIS)
- (j) Adenocarcinoma
- (k) Cancer not otherwise specified
- (l) Invasive squamous carcinoma of the cervix