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*National Cervical Screening Programme*

*October – December 2002*

*Independent Monitoring Group  
of the National Cervical Screening Programme*

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## **The Independent Monitoring Group of the National Cervical Screening Programme (IMG-NCSP)**

In 2000 the University of Otago, as part of its contract with the Ministry of Health, established the Independent Monitoring Group of the National Cervical Screening Programme (IMG-NCSP) to provide independent quantitative monitoring of the National Cervical Screening Programme. The members of the IMG-NCSP are:

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The IMG-NCSP received data from the National Cervical Screening Programme Register for this report on 17 February 2003. This quarterly monitoring report was sent to the Ministry of Health on 29 May 2003.

**Technical terms are used throughout this report, and an understanding of these terms may be necessary to interpret some parts of this report.**

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## 1.0 Executive Summary

The Independent Monitoring Group of the National Cervical Screening Programme (IMG-NCSP) was established in November 2000 to provide independent quantitative monitoring of the National Cervical Screening Programme (NCSP). The IMG-NCSP first met in April 2001. The principal purpose of this monitoring is to assist the National Screening Unit (NSU) of the Ministry of Health (MoH) and providers of cervical screening services to improve the quality of the NCSP. This is a quarterly report for the period October - December 2002.

National indicators for the NCSP, established in 2000 by the NSU, provide the basis for monitoring reports produced by the IMG-NCSP. Indicators are reported quarterly, 6-monthly or annually. This report includes indicators reported quarterly and 6-monthly. To calculate the indicators for this report, anonymised data provided by the NSU for women enrolled on the NCSP-Register prior to 31 December 2002 were used. Aggregate anonymised data for women referred to DHB colposcopy units were also provided by the NSU.

Short interval re-screening, a measure of resource utilisation, was estimated to be 20.6% for women aged 20-69 years. Satisfactory but limited smears can generate a one-year recall recommendation and when these smears were excluded, estimated short interval re-screening was 12.1%. Both these estimates of short interval re-screening were higher than the target of 10%. Levels of short interval re-screening were similar amongst women aged up to 59 years of age and decreased at older ages. The estimated level of short interval re-screening varied considerably among the DHB areas, ranging from 12.6% in the West Coast to 27.9% in Auckland when both satisfactory and satisfactory but limited smears were included.

26,357 participating women aged 20-69 years with a high grade cytological or histological abnormality recorded on the NCSP-Register had completed assessment and treatment before 1 October 2001. Of these 26,357 women, 71.0% had a smear within the 15 months prior to 31 December 2002. This was less than the target of 85%. 1,618 of these 26,357 women had no smear result recorded since their high grade abnormality.

4,709 women had an ASCUS possible high grade or more serious cytology result recorded on the NCSP-Register between 1 January and 31 December 2001. Almost three-quarters (74.8%) of these women had a histology specimen taken within 12 weeks of their high grade smear being taken. This was less than the target of 90%. For 357 of the 4,709 women, a subsequent histology result was not recorded on the NCSP-Register. The proportions of women who had no histology recorded on the NCSP-Register varied noticeably amongst the NCSP regions with 120 of the 357 women residing in the Bay of Plenty region.

Thirteen laboratories reported cervical cytology during the October - December 2002 quarter. Overall, of the 96,706 satisfactory or satisfactory but limited smears processed during the quarter, 7.4% were reported as abnormal, which was within the target of not more than 10%. Four laboratories, particularly the two-hospital based laboratories, reported more than 10% of the smears they read as abnormal.

All thirteen laboratories reporting cervical cytology met the 7-day cytology turn around time target. This is the first time that this has been achieved since the first monitoring report (October - December 2000 quarter). All laboratories either met or were very close to achieving the 14-day target.

Thirty laboratories reported cervical histology during the quarter. Six 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.

The proportion of smears reported as satisfactory but limited varied considerably among the laboratories. Three laboratories that reported cervical cytology during the quarter reported more than 20% of smears as satisfactory but limited. One laboratory reported more than 2.0% of smears as unsatisfactory and another laboratory reported less than 0.5% of smears as unsatisfactory.

The target for the positive predictive value of HSIL indicator is 65-85%. One laboratory was below the target range with a positive predictive value of 61.8%.

The colposcopy service indicators were unable to be calculated because the data required were not available. A suitable process to collect these data is required urgently in order for the IMG-NCSP to monitor the colposcopy service indicators.

Efforts to collect data from those DHB colposcopy units who did not provide any or incomplete data (Lakeland Health, Nelson/Marlborough Health, Northland Health, Pacific Health Tauranga, Pacific Health Whakatane, Southern Health, Tairāwhiti Healthcare, Waitemata Health and Wairarapa Health) should continue.

## **2.0 Recommendations**

The Independent Monitoring Group of the National Cervical Screening Programme makes the following recommendations in order to assist with improving the quality of the NCSP. The national indicator targets were considered when developing these recommendations. The recommendations were grouped into data related issues and service related issues.

### **2.1 Data Issues**

1. As the reported number of smears with a diagnostic code of AGUS is small, AGUS should be reported annually, not quarterly.
2. A suitable process to collect data required for calculating the colposcopy waiting time indicators is required urgently in order for the IMG-NCSP to monitor colposcopy services.
3. Efforts to collect data from those DHB colposcopy units who did not provide any or incomplete data for calculating the waiting time for colposcopic assessment indicators (Canterbury Health, Lakeland Health, Nelson/Marlborough Health, Northland Health, Pacific Health Tauranga, Pacific Health Whakatane, Southern Health, Tairāwhiti Healthcare, Waitemata Health and Wairarapa Health) should continue.

### **2.2 Services Issues**

1. Efforts to examine the relatively high level of short interval re-screening need to continue, particularly in those areas with higher than average levels of short interval re-screening (Auckland, Capital Coast, Counties Manakau, and Waitemata).
2. Efforts to reduce the high level of short interval re-screening in all 5-year age groups, particularly the 20-59 year old age groups, need to continue including efforts to educate smear takers and women about the nationally recommended intervals for cervical screening.
3. Reasons why 1,618 women with a high grade abnormality recorded on the NCSP-Register had no follow up smear results recorded on the NCSP-Register need to be examined and follow up arrangements for these women checked.
4. Efforts to encourage women with a history of a high grade abnormality to have annual smears should continue.
5. Reasons why women with a history of a high grade abnormality have had smears less frequently than recommended should be assessed.
6. Reasons why 357 women with a high grade cytology report have no subsequent histology result recorded on the NCSP-Register need to be examined by the NSU.
7. Reasons why histology reports were not recorded by the NCSP-Register within 12 weeks of a high grade cytology result for more than one-quarter of women, particularly Māori and Pacific women and women in the Bay of Plenty NCSP region need to be examined.

8. The IMG-NCSP should use the monitoring data set to investigate the outcome of women with ASCUS cytology results.
9. Auckland Hospital Laboratory, Hutt Hospital Laboratory, Northland Pathology Laboratory, Rotorua Hospital Laboratory, Taranaki Base Hospital Laboratory and Wellington Hospital Laboratory should continue to work towards achieving the 5-day histology turn around time target.
10. Reasons for reporting levels of unsatisfactory smears above the target range should be sought from Medical Laboratory Wellington.
11. Reasons for reporting levels of unsatisfactory smears below the target range should be sought from Diagnostic Medlab Auckland and Southern Community Laboratory Christchurch.
12. The continued low positive predictive value of HSIL reported by Pathlab Waikato should be investigated with immediacy.
13. Reasons for histology results not being recorded on the NCSP-Register following a HSIL or invasive carcinoma cytology report should be sought.
14. Efforts to reduce the number of women with HSIL or ASCUS possible high grade cytology waiting more than 4 weeks for colposcopic assessment should continue, particularly at Northland Health and South Auckland Health.
15. Efforts to reduce the number of women with low grade cytology waiting more than 26 weeks for colposcopic assessment should continue, particularly at Capital Coast Health, Health Waikato, Lakeland Health and South Auckland Health.
16. The Ministry of Health should review how the quality of smear taking by smear takers is monitored.

## 3.0 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. For indicators with no target, changes over time will be assessed. With more information available through the monitoring process, some indicator targets and reporting frequencies have changed (see previous monitoring reports). National indicators are reported quarterly, 6-monthly or annually.

This report includes indicators that are reported quarterly and 6-monthly. Each indicator is described in the results section under the separate headings that identify the specific indicators. Indicators that are calculated annually are listed and defined in Appendix 1.

To calculate the indicators for this report, anonymised data provided by the NSU for women enrolled on the NCSP-Register were used. Aggregate anonymised data for women referred to DHB colposcopy units were also provided by the NSU.

This report includes results for Maori and Pacific women. For this reporting quarter, 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 Maori and Pacific ethnic groups, respectively, on the NCSP-Register. For the purposes of monitoring reports, women recorded on the NCSP-Register as being not Maori or Pacific were grouped together as 'Other'. This group included women whose ethnic group was unknown.<sup>1</sup>

Only those cytology and histology results recorded on the NCSP-Register were used for the calculation of indicators.

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.

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<sup>1</sup> The National Screening Unit estimated that for 9% of women enrolled on the NCSP-Register, ethnicity was recorded as unknown.

## 4.0 Results

This reporting quarter ended on 31 December 2002. This report includes national indicators reported quarterly and 6-monthly. For each indicator, the indicator is defined, the target, if any, is stated and how the indicator was calculated is explained. The level of detail reported for each indicator varies.

For some indicators, results were calculated for NCSP regions or DHB areas. It is important to note that there are 14 NCSP regions and 21 DHB areas, and nine of these have identical boundaries (Hawkes Bay, Nelson/Marlborough, Northland, Otago, Tairāwhiti, Taranaki, Southland, Waikato and West Coast).

### 4.1 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.<sup>2</sup> The European Guidelines for Quality Assurance in Cervical Cancer Screening state that 'optimal use of resources is achieved if the proportion of smears taken in accordance with the guidelines is close to 100%.'

#### Target

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

#### Calculation

To estimate short interval re-screening women who met all the following criteria were included:

1. they were aged 20-69 years at the end of the reporting period,
2. their history at enrolment was recorded as normal on the NCSP-Register,
3. they had at least one satisfactory or satisfactory but limited smear during the 33-months prior to the end of the reporting period,
4. all their cytological and histological results prior to the 33-months before the end of the reporting period were recorded on the NCSP-Register as negative for dysplasia or malignancy, and
5. their first smear taken during the 33-months prior to the end of the reporting period was not a woman's first smear.

Following a woman's first ever smear, a further smear in one year is recommended.<sup>3</sup>

Each smear is classified as satisfactory, satisfactory but limited or unsatisfactory for laboratory reading. Unsatisfactory smears reported during the 33-month period were excluded because they generate a 3-month recall.<sup>4</sup>

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<sup>2</sup> IARC Working Group. Screening for squamous cervical cancer: duration of low risk after negative results of cervical cytology and its implications for screening policies. *BMJ* 1986; 293: 659-64.

<sup>3</sup> Cervical Screening Working Party. Recommendations for cervical screening 1997. *NZ Med J* 1998; 111: 94-8.

The number of women who met the above criteria and who, during the 33-months prior to the end of the reporting period, had two or more smears recorded minus those who had at least one smear recorded as abnormal<sup>5</sup> was expressed as a proportion of the number of women who had at least one smear recorded minus those who had at least one smear recorded as abnormal.

For women with a normal smear history, smears coded as satisfactory but limited generate either a 1-year or a 3-year recall depending on the reason for classifying a smear as satisfactory but limited.<sup>6</sup> To determine whether smears categorised as satisfactory but limited with a 1-year recall were contributing to the high level of short interval re-screening, separate analyses were done for satisfactory and satisfactory but limited smears combined and satisfactory smears only. The proportion of smears coded as satisfactory but limited varied amongst laboratories (see section 4.7).

## Results

Table 1 shows the estimated level of short interval re-screening for 20-69 year old women by 5-year age groups. The overall level of short interval re-screening for 20-69 year old women was 20.6% when both satisfactory and satisfactory but limited smears were included. This was slightly less than that reported last quarter (20.8%). When only satisfactory smears were included, the estimated level of short interval re-screening was 12.1%.

Short interval re-screening was highest amongst women aged 50-54 years (22.0%). Estimated levels of short interval re-screening were also higher than 20% estimated for women aged 20-29, 35-49 and 55-59 years. The lowest level of short interval re-screening (15.9%) occurred among women aged 65-69 years. When only satisfactory smears were included, the estimated level of short interval re-screening was highest amongst women aged 50-54 years (14.0%) and lowest amongst women aged 65-69 years (9.0%).

Table 2 shows the estimated level of short interval re-screening for 20-69 year old women by DHB area. Short interval re-screening varied considerably among DHB areas. It ranged from 12.6% for the West Coast to 27.9% for Auckland. High levels of short interval re-screening were also observed for Capital Coast (24.5%) and Counties Manakau (23.8%). When satisfactory smears only were included, the estimated level of short interval re-screening for each DHB area ranged from 6.1% for Waikato to 17.5% for Auckland. The difference between the estimated level of short interval re-screening when both satisfactory and satisfactory but limited smears were included and that when satisfactory smears only were included varied amongst the DHBs. This difference ranged from 2.4% for Otago to 11.7% for Counties Manakau.

It is likely that some women will have had smears more frequently than 3-yearly as part of investigations of symptoms, but this is unlikely to fully explain the continued level of short interval re-screening observed. While there is no clear evidence that the absence of endocervical cells on smear slides increases a woman's risk of a cervical abnormality<sup>7</sup>, this may be one reason why women are having smears more frequently than recommended. The current NZ recommendation is that "if the smear taker is satisfied that the cervix has been visualized and adequately sampled, and if the **smear result is normal while lacking an endocervical component**, there is no indication to repeat the smear earlier than the

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<sup>4</sup> Revised Bethesda Coding Standard. Appendix 9. National Cervical Screening Programme Interim Operational Policy and Quality Standards. Health Funding Authority, October 2000.

<sup>5</sup> An abnormal smear was defined as any smear with a diagnosis of ASCUS or more serious according to the hierarchy of cytological codes (Appendix 2).

<sup>6</sup> Revised Bethesda Coding Standard. Appendix 9. National Cervical Screening Programme Interim Operational Policy and Quality Standards. Health Funding Authority, October 2000.

<sup>7</sup> Mitchell H, Medley G. Longitudinal study of women with negative cervical smears according to endocervical status. *Lancet* 1991; 337: 265-7.

recommended smear interval, ie it is **recommended that the next smear is taken at the usual screening interval** of three years.”<sup>8</sup> Recommendations to smear takers by laboratories should accurately represent this policy.

## RECOMMENDATIONS

### Service Issues

1. Efforts to examine the relatively high level of short interval re-screening need to continue, particularly in those areas with high levels of short interval re-screening (Auckland, Capital Coast, Counties Manakau, and Waitemata).

The following recommendation was first stated in Report 2, Section 4.7 and is still applicable.

2. Efforts to reduce the high level of short interval re-screening in all 5-year age groups, particularly the 20-59 year old age groups, need to continue including efforts to educate smear takers and women about the nationally recommended intervals for cervical screening.

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<sup>8</sup> Cervical Screening. Guidelines for the Management of Women with Abnormal Cervical Smears. National Cervical Screening Programme, Health Funding Authority, 1999.

**Table 1. Short interval re-screening proportion (%) by 5-year age groups for the 33 months to 31 December 2002 [target = less than 10%].**

Age groups (years)	Number of women with a normal history and at least one A1† or A2‡ smear	Number of women with more than one A1† or A2‡ smear	Number of women with an abnormal A1† or A2‡ smear (ASCUS or more serious)	Proportion (%) with >1 A1† or A2‡ smear amongst women with a normal history*	Proportion (%) with >1 A1† smear amongst women with a normal history
20-24	27,358	9,156	4,382	20.8	10.3
25-29	45,727	12,516	4,520	19.4	9.8
30-34	57,873	15,575	3,993	21.5	12.2
35-39	63,330	15,950	3,471	20.8	12.5
40-44	64,735	16,188	3,157	21.2	12.8
45-49	53,982	13,663	2,577	21.6	13.4
50-54	44,538	11,165	1,736	22.0	14.0
55-59	35,478	8,172	1,072	20.6	12.7
60-64	27,711	5,541	659	18.0	10.8
65-69	20,511	3,583	385	15.9	9.0
Total	441,243	111,509	25,952	20.6	12.1

† A1 = satisfactory smear

‡ A2 = satisfactory but limited smear

\* = (column 3 – column 4) x 100/(column 2 – column 4)

**Table 2. Short-interval re-screening proportion (%) for 20-69 year old women for each DHB area [target = less than 10%].**

DHB areas	Number of women with a normal history and at least one A1† or A2‡ smear	Number of women with more than one A1† or A2‡ smear	Number of women with an abnormal A1† or A2‡ smear (ASCUS or more serious)	Proportion (%) with >1 A1† or A2‡ smear amongst women with a normal history	Proportion (%) with >1 A1† smear amongst women with a normal history
Auckland	42,570	13,336	2,030	27.9	17.5
Bay of Plenty	21,132	6,597	2,741	21.0	9.6
Canterbury	54,105	11,666	2,677	17.5	12.5
Capital Coast	34,624	10,159	2,232	24.5	12.8
Counties Manakau	38,025	10,293	1,615	23.8	12.9
Hawkes Bay	15,582	3,119	727	16.1	10.1
Hutt Valley	16,164	3,914	736	20.6	13.2
Lakes	11,928	3,683	1,452	21.3	11.2
MidCentral	16,631	3,524	927	16.5	9.6
Nelson-Marlborough	15,914	3,287	987	15.4	6.4
Northland	15,589	4,107	798	22.4	14.7
Otago	22,980	3,918	823	14.0	11.6
South Canterbury	6,241	1,307	285	17.2	11.4
Southland	12,497	2,099	556	12.9	9.9
Tairāwhiti	4,831	1,188	408	17.6	9.8
Taranaki	12,991	2,898	913	16.4	7.2
Waikato	35,506	8,175	3,028	15.8	6.1
Wairarapa	3,929	921	209	19.1	11.3
Waitemata	47,353	14,544	2,047	27.6	17.0
West Coast	3,388	552	143	12.6	8.7
Whanganui	6,614	1,465	383	17.4	9.8
DHB Unspecified	2,649	757	235	21.6	13.0
Total	441,243	111,509	25,952	20.6	12.1

† A1 = satisfactory smear

‡ A2 = satisfactory but limited smear

## 4.2 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. It is recommended that women with a history of a high grade abnormality have annual smears until age 70 years.<sup>9</sup>

A high grade abnormality was defined as any cytology result recorded as HSIL or more serious, or any histology result recorded as CIN-not otherwise specified, HSIL or more serious (according to the hierarchy of Bethesda or SNOMED codes as shown in Appendix 2 and 3, respectively).

### Targets

The targets for delayed re-screening were reported in the National Cervical Screening Programme Interim Operational Policy and Quality Standards as 15% for the last smear being 15 months or more previously and 1% for the last smear being 18 months or more previously. To maintain consistency with the reporting of targets for other indicators and to assist with interpretation, 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.

### Calculation

Participating women<sup>10</sup> aged 20-69 years at the end of the quarter who had a high grade result recorded on the NCSP-Register and were recorded as 'signed in'<sup>11</sup> following assessment and treatment prior to 1 October 2001 were included.<sup>12</sup> This date was chosen because it was 15 months before the end of the reporting quarter, allowing sufficient opportunity for recommended annual follow up smears to be taken and recorded on the NCSP-Register. The numbers of these women who had a smear recorded on the NCSP-Register within 15 months, between 15 and 18 months and more than 18 months prior to the end of the quarter were calculated. These were expressed as proportions of all participating women who had had a high grade abnormality recorded on the NCSP-Register and were recorded as 'signed in' following assessment and treatment before 1 October 2001.

### Results

Table 3 show the number and proportion of participating 20-69 year old women with a high grade abnormality recorded on the NCSP-Register who had completed treatment before 1 October 2001 and whose most recent smear was less than 15 months, between 15 and 18 months or more than 18 months prior to the end of the reporting quarter. 26,357 women with a high grade abnormality recorded on the NCSP-Register had completed assessment and treatment before 1 October 2001. This number has increased from 24,507 reported for the July – September 2002 quarter and from 19,395 for the first reporting quarter, October-December 2000. Of the 26,357 women, 71.0% had a smear within 15 months of the end of this reporting

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<sup>9</sup> Cervical Screening. Guidelines for the Management of Women with Abnormal Cervical Smears. National Cervical Screening Programme, Health Funding Authority, 1999.

<sup>10</sup> The definition of participating women is included in Appendix 1.

<sup>11</sup> 'Women are "signed out" so that no letters are sent from the Register advising them of their results or recommended recall while under the care of a specialist or colposcopist. Once the period of colposcopy or treatment has finished women are "signed in" and the Register will send letters as appropriate to their test and smear history.' P6.24, NCSP Interim Operational Policy and Quality Standards. October 2000.

<sup>12</sup> Women who were recorded, as having an abnormal history at enrolment were included only if they had had a high grade cytological or histological abnormality recorded on the NCSP-Register since enrolment.

quarter. This was similar to that reported for previous quarters, but less than the target of 85%. Just over three-quarters (76.4%) of the 26,357 women had a smear within 18 months. This proportion was also similar to that reported for previous quarters and much less than the target of 99%.

For 17.4% of the 26,357 women, their last smear was more than 18 months prior to 31 December 2002, which has increased from 16.1% reported for the July-September 2002 quarter. 1,618 women had had no smear recorded. Some of these women may have moved to live overseas and the NCSP-Register may not have this information. Sometimes there are clinical reasons for follow up smears not being taken.

## RECOMMENDATIONS

### Service Issues

1. Reasons why 1,618 women with a high grade abnormality recorded on the NCSP-Register had no follow up smear results recorded on the NCSP-Register need to be examined and follow up arrangements for these women checked.

The following recommendations were first stated in Report 1, Section 4.8 and are still applicable.

2. Efforts to encourage women with a history of a high grade abnormality to have annual smears should continue.
3. Reasons why women with a history of a high grade abnormality have had smears less frequently than recommended should be assessed.

**Table 3. Timeliness of the most recent smear among women with a previous high grade or more serious abnormality**  
[targets = 85% within 15 months and 99% within 18 months].

Time period	Number	Proportion (%)	Cumulative proportion (%)
Less than 15 months	18,710	71.0	71.0
15-18 months	1,432	5.4	76.4
More than 18 months	4,597	17.4	93.9
No smear recorded	1,618	6.1	100.0
Total	26,357	100	

### **4.3 Follow-up of women with HSIL cytology**

#### **Definition**

Follow-up of women with HSIL cytology is defined as the proportion of enrolled women with a high grade or more serious cytology result for whom a histology specimen has been taken within specified time periods from the time the smear was taken as recorded by the NCSP-Register. The time periods are within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and more than 52 weeks.

#### **Targets**

The targets for the follow-up of women with HSIL cytology are 90% for a histology specimen being taken within 12 weeks of the smear being taken, and 99% for a histology specimen being taken within 52 weeks of the smear being taken.

#### **Calculation**

The number of enrolled women aged 20-69 years at 31 December 2002 who had a cytology result of ASCUS possible high grade, HSIL or more serious abnormality (according to the hierarchy of codes, Appendix 2) recorded on the NCSP-Register between 1 January and 31 December 2001 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 ASCUS possible high grade, HSIL or more serious cytology between 1 January and 31 December 2001. The numbers and proportions of women with no histology result recorded on the NCSP-Register following their ASCUS possible high grade, HSIL or more serious cytology results 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 abnormal smear and whether they had a subsequent smear and if so, whether it was taken by a non-specialist or specialist.

This indicator was calculated for women of all ethnic groups, and Maori, Pacific and 'Other' women separately. It was also calculated for each NCSP region.

#### **Results**

Table 4 shows the number and proportion of women aged 20-69 years at 31 December 2002 who had ASCUS possible high grade, HSIL or more serious cytology (according to the hierarchy of codes, Appendix 2) reported during the period 1 January and 31 December 2001 and had a histology specimen taken within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks, or after 52 weeks of the smear being taken. The number of women with an ASCUS possible high grade, HSIL or more serious cytology report for which there was no subsequent histology result recorded on the NCSP-Register is also shown. Between 1 January and 31 December 2001, 4,709 women had an ASCUS possible high grade, HSIL or more serious cytology result recorded on the NCSP-Register. Almost three-quarters (74.8%) of these women had a histology specimen taken within 12 weeks of their high grade smear being taken. This was less than the target of 90%. Of the 4,709 women with an ASCUS possible high grade, HSIL or more serious cytology result recorded on the NCSP-Register, 91.0% had a histology specimen taken within one year of their high grade smear. This was less than the target of 99%.

Tables 5, 6 and 7 show the number and proportion of Maori, 'Other' and Pacific women who had a high grade smear taken during the period 1 January and 31 December 2001 and had a histology specimen taken within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks, or after 52 weeks of the smear being taken. Amongst the three ethnic groups, neither

of the two targets was reached. More than three-quarters (77.7%) of 'Other' women had a histology specimen taken within 12 weeks of their high grade smear compared with 61.1% of Maori women and 64.6% of Pacific women. Amongst the three ethnic groups differences in the proportions of women with high grade smears having subsequent histology within 13-26 weeks, within 27-52 weeks or more than 52 weeks persisted. With each successive time period the size of the differences decreased. The proportion of Maori, 'Other' and Pacific women who had a histology specimen taken and result recorded following their ASCUS possible high grade, HSIL or more serious smear was 89.2%, 93.2% and 84.4%, respectively.

Table 8 shows the number and proportion of women in each NCSP region with a high grade cytology result between 1 January and 31 December 2001, who had a histology specimen taken within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks, or after more than 52 weeks of the smear being taken. The proportion of women in each region who had a high grade smear result with a subsequent histology taken within 12 weeks as recorded on the NCSP-Register varied considerably amongst the regions. This proportion ranged from 48.0% for Bay of Plenty to 89.0% for Otago. No region reached the 12-week target of 90%, unlike the January - March 2002 reporting quarter when two regions (Tairāwhiti and the West Coast) reached the target. Except for the Bay of Plenty, the proportion of women in each region who had a high grade smear result with a subsequent histology taken within 52 weeks was more than 90%. However, no region reached the 52-week target of 99%, but Otago (97.5%) and the West Coast (97.3%) almost reached it.

For 357 women with a high grade smear result, a subsequent histology result was not recorded on the NCSP-Register (Table 4). This was less than that reported last quarter (390). Amongst the ethnic groups, the proportions of women who had no histology recorded on the NCSP-Register differed. This proportion was 10.8% for Maori women (Table 5), 6.8% for 'Other' women (Table 6) and 15.6% for Pacific women (Table 7). Amongst the NCSP regions, Bay of Plenty clearly had the greatest number and proportion of women with no histology result recorded on the NCSP-Register following a high grade smear (Table 8). 120 of 681 (17.6%) women with a high grade smear result in Bay of Plenty did not have a subsequent histology recorded on the NCSP-Register. Compared with other regions, relatively high numbers of women had no histology result recorded on the NCSP-Register in Auckland (91), Canterbury (28), Manawatu-Wanganui (27), and Wellington (27).

Table 9 summarises women with no histology result recorded on the NCSP-Register following a high grade smear. Of the 357 women with no histology recorded, 85 (23.8%) women had no subsequent smear recorded and 129 (36.1%) women had a follow-up smear taken by a non-specialist. Of the 214 women who had either no follow-up smear or a smear taken by a non-specialist, 145 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. For the remaining 69 women, their follow-up was less clear. Of these 69 women, 31 were in Bay of Plenty, 14 in Auckland, 5 in Manawatu-Wanganui and 6 in Wellington NCSP regions (data not shown). These regions represented 92% of the total.

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 and some women may have chosen to not have their histology results to be recorded on the NCSP-Register.

## RECOMMENDATIONS

### Service Issues

1. Reasons why 357 women with a high grade cytology report have no subsequent histology result recorded on the NCSP-Register need to be examined by the NSU.

The following recommendation was first stated in Report 2, Section 4.9 and is still applicable.

2. Reasons why histology reports were not recorded by the NCSP-Register within 12 weeks of a high grade cytology result for more than one-quarter of women, particularly Maori and Pacific women and women in the Bay of Plenty NCSP region need to be examined.

**Table 4. Timeliness of histology report after an ASCUS possible high grade or more serious cytology result for enrolled 20-69 year old women** [targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number	Proportion (%)	Cumulative proportion (%)
Within 12 weeks	3,522	74.8	74.8
13-26 weeks	556	11.8	86.6
27-52 weeks	205	4.4	91.0
More than 52 weeks	69	1.5	92.4
Subtotal	4,352		
No histology recorded on NCSP-Register	357	7.6	100.0
Total	4,709		

**Table 5. Timeliness of histology report after HSIL or ASCUS possible high grade cytology result for enrolled 20-69 year old Maori women** [targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number	Proportion (%)	Cumulative proportion (%)
Within 12 weeks	453	61.1	61.1
13-26 weeks	127	17.1	78.3
27-52 weeks	61	8.2	86.5
More than 52 weeks	20	2.7	89.2
Subtotal	661		
No histology reported	80	10.8	100.0
Total	741		

**Table 6. Timeliness of histology report after HSIL or ASCUS possible high grade cytology result for enrolled 20-69 year old 'Other' women** [targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number	Proportion (%)	Cumulative proportion (%)
Within 12 weeks	3,007	77.7	77.7
13-26 weeks	416	10.7	88.4
27-52 weeks	139	3.6	92.0
More than 52 weeks	48	1.2	93.2
Subtotal	3,610		
No histology reported	262	6.8	100.0
Total	3,872		

**Table 7. Timeliness of histology report after HSIL or ASCUS possible high grade cytology result for enrolled 20-69 year old Pacific women** [targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number	Proportion (%)	Cumulative proportion (%)
Within 12 weeks	62	64.6	64.6
13-26 weeks	13	13.5	78.1
27-52 weeks	5	5.2	83.3
More than 52 weeks	1	1.0	84.4
Subtotal	81		
No histology reported	15	15.6	100.0
Total	96		

**Table 8. Timeliness of histology report after HSIL or ASCUS possible high grade cytology result for enrolled 20-69 year old women by NCSP region [targets = 90% within 12 weeks and 99% within 52 weeks].**

NCSP region	Time periods										Total No.
	Within 12 weeks		13-26 weeks		27-52 weeks		More than 52 weeks		No histology		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Auckland	974	78.0	100	8.0	66	5.3	18	1.4	91	7.3	1,249
Bay of Plenty	327	48.0	177	26.0	38	5.6	19	2.8	120	17.6	681
Canterbury	446	83.7	39	7.3	14	2.6	6	1.1	28	5.3	533
Hawkes Bay	142	76.8	24	13.0	7	3.8	2	1.1	10	5.4	185
Manawatu/ Wanganui	250	77.6	27	8.4	13	4.0	5	1.6	27	8.4	322
Nelson/ Marlborough	96	69.1	29	20.9	9	6.5	2	1.4	3	2.2	139
Northland	161	83.9	16	8.3	7	3.6	0	0.0	8	4.2	192
Otago	178	89.0	10	5.0	7	3.5	2	1.0	3	1.5	200
Southland	108	85.7	5	4.0	3	2.4	2	1.6	8	6.3	126
Tairāwhiti	37	78.7	6	12.8	2	4.3	0	0.0	2	4.3	47
Taranaki	119	78.3	20	13.2	3	2.0	0	0.0	10	6.6	152
Waikato	319	77.4	59	14.3	11	2.7	4	1.0	19	4.6	412
Wellington	334	77.0	39	9.0	25	5.8	9	2.1	27	6.2	434
West Coast	31	83.8	5	13.5	0	0.0	0	0.0	1	2.7	37
<b>Total</b>	<b>3,522</b>	<b>74.8</b>	<b>556</b>	<b>11.8</b>	<b>205</b>	<b>4.4</b>	<b>69</b>	<b>1.5</b>	<b>357</b>	<b>7.6</b>	<b>4,709</b>

**Table 9. The number of women with no histology result recorded by NCSP-Register status and source of any subsequent smear.**

Subsequent smear	Women's status		
	Not signed in	Signed in since high grade cytology result	Total
No smear	30	55	85
Smear taken by non-specialist	39	90	129
Subtotal	69	145	214
Smear taken by specialist	56	87	143
Total	125	232	357

## **Laboratory Indicators**

Several NCSP national indicators focus on laboratory performance. These are laboratory smear reporting rates, cytology and histology turn around times, satisfactory but limited and unsatisfactory smear reporting rates, positive predictive value of HSIL and accuracy of negative cytology reports. Table 10 summarises the laboratory performance indicators by laboratory for this quarterly report. These indicators are discussed in detail in sections 4.4 – 4.7

**Table 10. A summary of laboratory indicators reported.**

Laboratory	Total number of smears processed	Satisfactory but limited smears (target = not more than 20%)		Unsatisfactory smears (target = 0.5 – 2.0%)		Negative for dysplasia or malignancy* (target = not more than 96%)		HSIL* (target = not less than 0.60%)		Total abnormalities*† (target = not more than 10%)		Smear turn around time proportion (%) (target = 90%)	Positive predictive value of HSIL (target = 65-85%)
		No.	%	No.	%	No.	%	No.	%	No.	%	Within 7 days	%
<i>Hospital-based</i>	Number												
Auckland Hospital Laboratory	2,072	375	18.1	41	2.0	1,626	80.1	132	6.50	405	19.9	95.56	73.6
Canterbury Health Laboratories	1,296	227	17.5	10	0.8	1,095	85.1	32	2.49	191	14.9	99.77	71.7
Rest of table 10 continued on next page													

\* Unsatisfactory smears excluded

† Includes all smears with a diagnosis code of ASCUS or more serious according to the hierarchy of codes.

Table 10 *continued*

Laboratory	Total number of smears processed	Satisfactory but limited smears		Unsatisfactory smears		Negative for dysplasia or malignancy*		HSIL*		Total abnormalities*†		Smear turn around time proportion (%)	Positive predictive value of HSIL (target = 65-85%)
		(target = not more than 20%)		(target = 0.5 – 2.0%)		(target = not more than 96%)		(target = not less than 0.60%)		(target = not more than 10%)		(target = 90%)	(target = 65-85%)
<i>Community-based</i>	Number	No.	%	No.	%	No.	%	No.	%	No.	%	Within 7 days	%
Diagnostic Medlab Auckland	28,311	6,116	21.6	101	0.4	26,799	95.0	228	0.81	1,411	5.0	99.99	77.4
Medical Laboratory Wellington	9,186	2,175	23.7	211	2.3	8,058	89.8	75	0.84	917	10.2	98.42	68.6
Medlab Bay of Plenty	6,785	1,392	20.5	39	0.6	6,133	90.9	65	0.96	613	9.1	96.70	71.5
Medlab Central, Palmerston North	7,495	1,285	17.1	36	0.5	6,841	91.7	96	1.29	618	8.3	99.97	66.5
Medlab Hamilton	7,060	865	12.3	34	0.5	6,246	88.9	58	0.83	780	11.1	95.28	81.3
Medlab South Christchurch	9,900	1,861	18.8	88	0.9	9,210	93.9	75	0.76	602	6.1	100.00	71.3
Pathlab Waikato	2,566	469	18.3	21	0.8	2,353	92.5	29	1.14	192	7.5	99.92	61.8
SCL‡ Christchurch	4,915	451	9.2	10	0.2	4,642	94.6	45	0.92	263	5.4	99.98	80.8
SCL‡ Dunedin	10,504	579	5.5	58	0.6	9,915	94.9	157	1.50	531	5.1	99.83	82.3
Taranaki Medlab	4,618	900	19.5	87	1.9	4,207	92.8	46	1.02	324	7.2	99.61	71.4
Valley Diagnostic Laboratory#	2,780	553	19.9	46	1.7	2,591	94.8	27	0.99	143	5.2	96.47	66.0
Total	97,488	17,248	17.7	782	0.8	89,716	92.8	1,065	1.10	6,990	7.2	99.04	74.3

\* Unsatisfactory smears excluded

† Includes all smears with a diagnosis code of ASCUS or more serious according to the hierarchy of codes.

‡ SCL = Southern Community Laboratory

# Many cytology results for smears taken in December 2002 were not forwarded to the NCSP-Register by the time of the data download.

## 4.4 Laboratory smear reporting

Levels of cytology abnormalities detected by laboratories depend on numerous factors including the prevalence of abnormalities, the case mix and laboratory reporting practice.<sup>13</sup>

The Bethesda System is used by the NCSP to record the cytological result of each smear.<sup>14</sup> 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. The Bethesda diagnosis codes were assigned to broad cytological categories and these are shown in Appendix 2. 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 favouring a reactive process (AGUS favour reactive)
- (f) atypical glandular cells of undetermined significance favouring a dysplastic or neoplastic process (AGUS favour dysplasia)
- (g) ASCUS possible high grade
- (h) high grade squamous intraepithelial lesion (HSIL)
- (i) adenocarcinoma-in-situ (AIS)
- (j) adenocarcinoma<sup>15</sup>
- (k) cancer not otherwise specified
- (l) invasive squamous carcinoma of the cervix

### 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
3. AGUS favour reactive
4. AGUS favour dysplasia
5. LSIL (CIN 1 and/or HPV)
6. ASCUS possible high grade
7. HSIL
8. Total abnormalities (smears reported as ASCUS or more serious)

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<sup>13</sup> The prevalence of the abnormalities in the population of women whose smears are read at a laboratory is an important determinant of the pattern of reporting from the laboratory. Hence, the case mix can vary considerably among laboratories. Hospital laboratories read smears from women referred to colposcopy clinics after the initial report of a cytological abnormality. Many hospital laboratories also read smears from women attending sexual health clinics. The prevalence of cytological abnormalities is higher amongst these two groups of women. Consequently, the prevalence of abnormalities reported by hospital laboratories is much greater than those laboratories (community laboratories) for which the great majority of smears come from women with normal smear histories. However, some community laboratories also provide cytology reporting for hospital or private gynaecology colposcopy clinics.

<sup>14</sup> Bethesda Coding Standard 1998 was used for this monitoring period.

<sup>15</sup> Adenocarcinoma includes adenocarcinoma not otherwise specified, adenocarcinoma probably of endocervical origin, adenocarcinoma probably of endometrial origin and adenocarcinoma probably of extrauterine origin.

## **Targets**

The targets for laboratory smear reporting are:

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 (listed in the definition above) 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**

Table 11 shows the number and proportion of satisfactory or satisfactory but limited smears in the specified cytological categories for smears taken during the quarter and read by each of the laboratories that read smears. The results are grouped into the two laboratories reporting smears predominantly for hospital clinics and the eleven laboratories reporting smears predominantly from the community.

During the quarter, 96,706 satisfactory or satisfactory but limited smears were taken. The number of satisfactory or satisfactory but limited smears reported by each laboratory ranged from 1,286 for Canterbury Health Laboratories to 28,210 for Diagnostic Medlab Auckland.

Overall, of the 96,706 smears 92.8% were reported as negative for dysplasia or malignancy. This was almost the same as that reported last quarter (92.3%), and within the target of not more than 96% of smears being negative for dysplasia or malignancy. Although each laboratory met the target, there was variation amongst the laboratories. The two hospital-based laboratories reported lower proportions of the smears they read as negative for dysplasia or malignancy compared with the community-based laboratories.

The proportion of smears reported with a HSIL abnormality was 1.10% for all laboratories combined. This was similar to that reported for previous reporting quarters and met the target of not less than 0.60%. Each laboratory met the target of not less than 0.60%. As expected, the two hospital-based laboratories reported higher proportions of smears as HSIL compared with the community-based laboratories. Amongst the community-based laboratories, Southern Community Laboratory Dunedin reported the highest proportion of smears as HSIL (1.50%).

For all laboratories combined, the target of not more than 10% of smears reported as abnormal was not exceeded. This proportion was 7.2%, which is similar to the previous quarter (7.7%). Both hospital-based laboratories reported more than 10% of smears they processed to be abnormal: Auckland Hospital Laboratory (19.9%) and Canterbury Health Laboratories (14.9%). These proportions are similar to that reported last quarter. Two community-based laboratories also reported more than 10% of the smears they processed as abnormal: Medical Laboratory Wellington (10.2%) and Medlab Hamilton (11.1%). For Medical Laboratory Wellington this proportion was less than reported last quarter (12.1%) and for Medlab Hamilton this proportion was similar to that reported last quarter.

Overall since monitoring of the NCSP began the proportion of total ASCUS reported has decreased, particularly for some laboratories.

## RECOMMENDATIONS

### Data Issues

1. As the reported number of smears with a diagnostic code of AGUS is small, AGUS should be reported annually, not quarterly.

### Service Issues

The following recommendation was previously stated in Report 5, Section 4.4, and is still applicable.

1. The IMG-NCSP should use the monitoring data set to investigate the outcome of women with ASCUS cytology results.

**Table 11. The number and proportion of satisfactory or satisfactory but limited smears in broad cytological categories for each laboratory.**

Laboratory	Negative for dysplasia or malignancy (target - not more than 96%)		Total ASCUS (including ASCUS possible HSIL)		LSIL		AGUS favour reactive		AGUS favour dysplasia		ASCUS possible HSIL		HSIL (target - not less than 0.60%)		Total abnormalities† (target - not more than 10%)		Total smears
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Auckland Hospital Laboratory	1,626	80.1	200	9.8	58	2.9	8	0.39	2	0.10	17	0.84	132	6.50	405	19.9	2,031
Canterbury Health Laboratories	1,095	85.1	79	6.1	75	5.8	2	0.16	0	0.00	8	0.62	32	2.49	191	14.9	1,286
Rest of table 11 continued on next page																	

† Includes all smears with a diagnosis code of ASCUS or more serious according to the hierarchy of codes.

Table 11 *continued*

Laboratory	Negative for dysplasia or malignancy (target = not more than 96%)		Total ASCUS (including ASCUS possible HSIL)		LSIL		AGUS favour reactive		AGUS favour dysplasia		ASCUS possible HSIL		HSIL (target = not less than 0.60%)		Total abnormalities† (target = not more than 10%)		Total smears
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Diagnostic Medlab Auckland	26,799	95.0	557	2.0	608	2.2	12	0.04		0.00	53	0.19	228	0.81	1,411	5.0	28,210
Medical Laboratory Wellington	8,058	89.8	530	5.9	290	3.2	18	0.20	2	0.02	22	0.25	75	0.84	917	10.2	8,975
Medlab Bay of Plenty#	6,133	90.9	347	5.1	183	2.7	15	0.22	2	0.03	3	0.04	65	0.96	613	9.1	6,746
Medlab Central, Palmerston North	6,841	91.7	183	2.5	331	4.4	3	0.04	1	0.01	5	0.07	96	1.29	618	8.3	7,459
Medlab Hamilton	6,246	88.9	285	4.1	430	6.1	3	0.04	1	0.01	8	0.11	58	0.83	780	11.1	7,026
Medlab South Christchurch	9,210	93.9	293	3.0	204	2.1	21	0.21	2	0.02	29	0.30	75	0.76	602	6.1	9,812
Pathlab Waikato#	2,353	92.5	112	4.4	48	1.9	3	0.12	0	0.00	9	0.35	29	1.14	192	7.5	2,545
SCL* Christchurch	4,642	94.6	109	2.2	104	2.1	4	0.08	1	0.02	5	0.10	45	0.92	263	5.4	4,905
SCL* Dunedin	9,915	94.9	37	0.4	318	3.0	4	0.04	0	0.00	20	0.19	157	1.50	531	5.1	10,446
Taranaki Medlab	4,207	92.9	146	3.2	130	2.9	2	0.04	0	0.00	2	0.04	46	1.02	324	7.2	4,531
Valley Diagnostic Laboratory‡	2,591	94.8	48	1.8	68	2.5	0	0.00	0	0.00	9	0.33	27	0.99	143	5.2	2,734
Total	89,716	92.8	2,926	3.0	2,847	2.9	95	0.10	11	0.01	190	0.20	1,065	1.10	6,990	7.2	96,706

† Includes all smears with a diagnosis code of ASCUS or more serious according to the hierarchy of codes.

\* SCL = Southern Community Laboratory.

‡ Many cytology results for smears taken in December 2002 were not forwarded to the NCSP-Register by the time of the data download.

# An unknown number of smears sent to Medlab Bay of Plenty were read by Pathlab Waikato but are recorded as having been read by Medlab Bay of Plenty.

## **4.5 Laboratory cytology turn around time**

### **Definition**

Laboratory cytology turn around time is the period of time between the 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 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**

Table 12 shows the proportion of smears received and reports issued within specified time periods during the period 1 October to 31 December 2002 for each laboratory processing cervical cytology. Overall, 99.04% of smears received by laboratories were reported within 7 working days. This was greater than the target of 90% and greater than that reported last quarter (98.34%).

Each of the thirteen laboratories achieved the 7-day target. Since monitoring of the NCSP began at the end of 2000, this is the first reporting quarter where all laboratories have achieved this cytology turn around target.

Overall, the 14-day target of 100% was almost achieved. For all smears received by laboratories between 1 October and 31 December 2002, 99.99% were reported within 14 working days.

Four laboratories did not meet the 14-day target, but they were very close to achieving it. Overall, 14 of 99,550 smears were not reported within 14 working days (data not shown).

## **RECOMMENDATIONS**

Nil

**Table 12. Timeliness of the reporting of smears by laboratory** [targets = 90% within 7 working days and 100% within 14 working days].

Laboratory	Number of smears processed	Within 7 working days	From 8 to 14 working days	Within 14 working days	More than 14 working days
		Proportion (%)	Proportion (%)	Cumulative proportion (%)	Proportion (%)
Auckland Hospital Laboratory	2,072	95.56	4.39	99.95	0.05
Canterbury Health Laboratories	1,296	99.77	0.15	99.92	0.08
Diagnostic Medlab Auckland	28,311	99.99	0.00	99.99	0.01
Medical Laboratory Wellington	9,186	98.42	1.58	100.00	0.00
Medlab Bay of Plenty#	6,785	96.70	3.29	99.99	0.01
Medlab Central, Palmerston North	7,495	99.97	0.03	100.00	0.00
Medlab Hamilton	7,060	95.28	4.70	99.99	0.01
Medlab South Christchurch	9,900	100.00	0.00	100.00	0.00
Pathlab Waikato#	2,566	99.92	0.08	100.00	0.00
Southern Community Laboratory Christchurch	4,915	99.98	0.00	99.98	0.02
Southern Community Laboratory Dunedin	10,504	99.83	0.13	99.96	0.04
Taranaki Medlab	4,618	99.61	0.39	100.00	0.00
Valley Diagnostic Laboratory†	2,780	96.47	3.42	99.89	0.11
<b>Total</b>	<b>97,488</b>	<b>99.04</b>	<b>0.95</b>	<b>99.99</b>	<b>0.01</b>

# An unknown number of smears sent to Medlab Bay of Plenty were read by Pathlab Waikato but are recorded as having been read by Medlab Bay of Plenty.

† Many cytology results for smears taken in December 2002 were not forwarded to the NCSP-Register by the time of the data download.

## 4.6 Laboratory histology turn around time

### Definition

Laboratory histology turn around time is the period of time between the 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.<sup>16</sup> “If it is likely to take more than 10 days for the result to be reported the colposcopist should be informed.”<sup>17</sup>

### 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. Histology specimens included diagnostic biopsies, treatment biopsies, polyps and the cervical tissue of total hysterectomy specimens. 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

Table 13 shows the number of histology specimens reported and the timeliness of histology results reported by laboratories. Thirty laboratories reported histology specimens during the period 1 October to 31 December 2002. Since last quarter Healthlab Otago has ceased reporting cervical histology. 6,810 histology specimens were recorded on the NCSP-Register as having been received and reported by laboratories. The number of histology specimens reported by each laboratory varied considerably, ranging from 40 for both Medlab South Christchurch and Southern Community Laboratory Hawkes Bay to 916 for Diagnostic Medlab Auckland.

For all laboratories combined, the 5-day histology turn around time was 93.5%. This met the target of 90%, but was slightly less than that 5-day histology turn around time reported last quarter (94.6%). Six of the thirty laboratories did not meet the 5-day target: Auckland Hospital Laboratory (62.7%), Hutt Hospital Laboratory (89.3%), Northland Pathology Laboratory (87.7%), Rotorua Hospital Laboratory (71.9%), Taranaki Base Hospital Laboratory (88.6%), Wellington Hospital Laboratory (72.4%). For Auckland Hospital Laboratory, Hutt Hospital Laboratory, Northland Pathology Laboratory and Rotorua Hospital Laboratory the 5-day histology turn around time had decreased since the previous quarter.

Most laboratories had reported all or almost all histology results within 10 working days of the specimen arriving at the laboratory. Overall, 100 of 6,810 (1.5%) compared with 88 of 6,588

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<sup>16</sup> P 5.21 National Cervical Screening Programme Interim Operational Policy and Quality Standards. Health Funding Authority, October 2000.

<sup>17</sup> Ibid.

(1.8%) histology specimens received during the quarter were reported more than 10 working days after the time the specimens were received by the laboratory. Rotorua Hospital Laboratory reported the highest proportion (19.8%) of histology specimens after 10 working days. Auckland Hospital Laboratory (9.7%), Hutt Hospital Laboratory (5.3%), Northland Pathology Laboratory (7.4%), and Wellington Hospital Laboratory (4.5%) also had higher proportions of histology specimens reported after 10 working days compared with the other laboratories.

## RECOMMENDATIONS

### Service Issues

1. Auckland Hospital Laboratory, Hutt Hospital Laboratory, Northland Pathology Laboratory, Rotorua Hospital Laboratory, Taranaki Base Hospital Laboratory and Wellington Hospital Laboratory should continue to work towards achieving the 5-day histology turn around time target.

**Table 13. Timeliness of the reporting of histology by laboratory** [targets = 90% within 5 working days and 100% within a reasonable period of time].

Laboratory	Number of histology specimens	Within 5 working days	6-10 working days	11 or more working days
		Proportion (%)	Proportion (%)	Proportion (%)
Auckland Hospital Laboratory	308	62.7	27.6	9.7
Canterbury Health Laboratories	498	98.0	1.8	0.2
Diagnostic Medlab Auckland	916	99.8	0.1	0.1
Hutt Hospital Laboratory	131	89.3	5.3	5.3
Medical Laboratory Southland	55	100.0	0.0	0.0
Medical Laboratory Wellington	210	91.4	7.6	1.0
Medlab Bay of Plenty	393	96.2	3.6	0.3
Medlab Central, Palmerston North	508	94.7	5.3	0.0
Medlab Hamilton	74	94.6	5.4	0.0
Medlab South Christchurch	40	100.0	0.0	0.0
Medlab South working for Timaru	105	100.0	0.0	0.0
Memorial Hospital Hastings Lab	137	97.1	1.5	1.5
Middlemore Hospital Laboratory	234	99.6	0.4	0.0
Nelson Diagnostic Laboratory	62	98.4	1.6	0.0
Nelson Hospital Laboratory	131	93.1	5.3	1.5
North Shore Hospital Laboratory	384	99.7	0.3	0.0
Northland Pathology Laboratory	81	87.7	4.9	7.4
Pathlab Waikato	190	100.0	0.0	0.0
Rotorua Hospital Laboratory	121	71.9	8.3	19.8
SCL Christchurch	162	100.0	0.0	0.0
SCL Dunedin	469	99.4	0.4	0.2
SCL Hawkes Bay	40	100.0	0.0	0.0
Southland Hospital Laboratory	127	96.9	3.1	0.0
Taranaki Base Hospital Laboratory	149	88.6	8.7	2.7
Taranaki Medlab	60	100.0	0.0	0.0
Valley Diagnostic Laboratory	77	93.5	6.5	0.0
Waikato Hospital Laboratory	651	91.9	7.5	0.6
Wanganui Hospital Laboratory	69	100.0	0.0	0.0
Wellington Hospital Laboratory	333	72.4	23.1	4.5
Whangarei Hospital Laboratory	95	98.9	1.1	0.0
<b>Total</b>	<b>6,810</b>	<b>93.5</b>	<b>5.0</b>	<b>1.5</b>

## **4.7 Satisfactory but limited and unsatisfactory smears by laboratory**

### **Definition**

Satisfactory but limited smears are those smears reported with a Bethesda adequacy code of A2 (satisfactory but limited).

Unsatisfactory smears are those smears reported with a Bethesda adequacy of A3 (unsatisfactory).

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. Until the NCSP adopts this most recent revision of the Bethesda System, the IMG-NCSP will continue to report the satisfactory but limited smears by laboratory indicator. 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**

Table 14 shows the number and proportion of satisfactory but limited and unsatisfactory smears taken during the quarter and reported by the specified laboratories. Overall, 97,488 smears were processed, of which 17.7% were reported as satisfactory but limited. This was more than that reported last quarter (16.8%) 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 5.5% for Southern Community Laboratory Dunedin to 23.7% for Medical Laboratory Wellington. Diagnostic Medlab Auckland (21.6%) and Medlab Bay of Plenty (20.5%) also reported the adequacy of more than 20% of the smears they read as satisfactory but limited. A high proportion of satisfactory but limited smears is associated with a high level of short interval re-screening (see Section 4.1).

Overall, 0.8% of the 97,488 smears processed were reported as unsatisfactory for evaluation. This is less than that reported for all previous monitoring quarters, but within the target range of 0.5% - 2.0%. Medical Laboratory Wellington reported more than 2.0% of smears as unsatisfactory (2.3%). Both Diagnostic Medlab Auckland and Southern Community Laboratory Christchurch reported less than 0.5% of smears they read as unsatisfactory. The proportion of smears reported as unsatisfactory by Southern Community Laboratory Christchurch for this reporting quarter (0.2%) was less than that reported last quarter (0.3%).

## RECOMMENDATIONS

### Service Issues

1. Reasons for reporting levels of unsatisfactory smears above the target range should be sought from Medical Laboratory Wellington.
2. Reasons for reporting levels of unsatisfactory smears below the target range should be sought from Diagnostic Medlab Auckland and Southern Community Laboratory Christchurch.

**Table 14. The number and proportion of satisfactory but limited and unsatisfactory smears by laboratory.**

Laboratory	Number of smears processed	Satisfactory but limited smears [target = not more than 20%]		Unsatisfactory smears (%) [target = 0.5 – 2.0%]	
		Number	Proportion (%)	Number	Proportion (%)
Auckland Hospital Laboratory	2,072	375	18.1	41	2.0
Canterbury Health Laboratories	1,296	227	17.5	10	0.8
Diagnostic Medlab Auckland	28,311	6,116	21.6	101	0.4
Medical Laboratory Wellington	9,186	2,175	23.7	211	2.3
Medlab Bay of Plenty#	6,785	1,392	20.5	39	0.6
Medlab Central, Palmerston North	7,495	1,285	17.1	36	0.5
Medlab Hamilton	7,060	865	12.3	34	0.5
Medlab South Christchurch	9,900	1,861	18.8	88	0.9
Pathlab Waikato#	2,566	469	18.3	21	0.8
Southern Community Laboratory Christchurch	4,915	451	9.2	10	0.2
Southern Community Laboratory Dunedin	10,504	579	5.5	58	0.6
Taranaki Medlab	4,618	900	19.5	87	1.9
Valley Diagnostic Laboratory†	2,780	553	19.9	46	1.7
<b>Total</b>	<b>97,488</b>	<b>17,248</b>	<b>17.7</b>	<b>782</b>	<b>0.8</b>

# An unknown number of smears sent to Medlab Bay of Plenty were read by Pathlab Waikato but are recorded as having been read by Medlab Bay of Plenty.

† Many cytology results for smears taken in December 2002 were not forwarded to the NCSP-Register by the time of the data download.

## **4.8 Cytology reports predicting HSIL (positive predictive value)**

Monitoring the proportion of HSIL or invasive carcinoma cytology reports that are confirmed histologically provides a measure of the accuracy of diagnosis of high grade cervical lesions in a laboratory. A different pathologist or laboratory from the one who reported the cervical smear may issue histology reports.

For good management of women with cervical abnormalities, regular multidisciplinary meetings, involving both colposcopists and pathologists, are useful forums to discuss clinico-pathological correlation.

### **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 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 January to 30 June 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 January to 31 December 2002 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**

Table 15 shows for each laboratory the number and proportion of high grade or invasive carcinoma cytology reports for which there were follow-up histology reports on the NCSP-Register and the proportion of these cytology reports, which were confirmed as HSIL or more serious abnormality on histology. Between 1 January and 30 June 2002 there were 1,838 HSIL or invasive carcinoma cytology reports. Of these 1,838 cytology reports, 1,624 (88.4%) had a subsequent histology recorded on the NCSP-Register. Of these 1,624 cytology reports, 74.3% were confirmed as having HSIL or more serious abnormality on histology. This was within the target range of 65-85%.

One laboratory was outside the PPV indicator target range. The PPV for Pathlab Waikato was 61.8%, which was below the target range. For the previous 6-month period (1 July to 30 December 2001), the PPV for Pathlab Waikato was 50.0%.

For all laboratories, histology results following a HSIL or invasive carcinoma cytology report were not recorded for some women. Overall, 11.6% of HSIL or invasive carcinoma cytology reports had no subsequent histology result recorded. The proportion of HSIL or invasive

carcinoma cytology reports with no subsequent histology result recorded varied amongst the laboratories, ranging from 5.7% for Medlab South Christchurch to 17.6% for Auckland Hospital Laboratory. As stated in section 4.3, 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 and some women may have opted to not allow their histology results to be recorded on the NCSP-Register. Also, some histology results may not have been forwarded to the NCSP-Register.

## RECOMMENDATIONS

### Service Issues

1. The continued low positive predictive value of HSIL reported by Pathlab Waikato should be investigated with immediacy.
2. Reasons for histology results not being recorded on the NCSP-Register following a HSIL or invasive carcinoma cytology report should be sought.

**Table 15. Cytology reports predicting HSIL by laboratory** [target = 65-85%].

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	159	73.6	17.6
Canterbury Health Laboratories	46	71.7	14.8
Diagnostic Medlab Auckland	297	77.4	11.9
Medical Laboratory Wellington	86	68.6	14.9
Medlab Bay of Plenty	130	71.5	17.2
Medlab Central, Palmerston North	164	66.5	7.3
Medlab Hamilton	91	81.3	6.2
Medlab South Christchurch	150	71.3	5.7
Pathlab Waikato	34	61.8	15.0
Southern Community Laboratory Christchurch	78	80.8	6.0
Southern Community Laboratory Dunedin	231	82.3	10.1
Taranaki Medlab	105	71.4	16.0
Valley Diagnostic Laboratory	53	66.0	8.6
<b>Total</b>	<b>1,624</b>	<b>74.3</b>	<b>11.6</b>

## **4.9 Waiting time for colposcopic assessment for HSIL or ASCUS possible high grade**

### **Definition**

The waiting time for colposcopic assessment for HSIL or ASCUS possible high grade 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**

Data required for the calculation of the waiting time for assessment for HSIL or ASCUS possible high grade indicator are collected by DHB colposcopy clinics and reported to the Ministry of Health (MoH). Prior to the establishment of the IMG-NCSP data required to calculate this indicator were not collected. Because data definitions were inconsistent<sup>18</sup> and some data were missing, it was not possible to calculate this indicator. Nevertheless, 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 reported by DHB colposcopy services were provided by the MoH.

### **Results**

Table 16 shows the reported number of women with an HSIL or ASCUS possible high grade cytology results referred each month for a colposcopic assessment to each DHB colposcopy service, and the reported number of women referred for colposcopic assessment of an HSIL or ASCUS possible high grade cytology result waiting longer than 4 weeks at the end of each month. The number of colposcopy units who provide colposcopy data has increased. Four DHB colposcopy reporting units did not provide any data for this reporting quarter compared with eight for the previous quarter. The four units were Pacific Health Tauranga, Pacific Health Whakatane, Tairāwhiti Healthcare and Waitemata Health. For Lakeland Health, Nelson/Marlborough Health, Northland Health, Southern Health and Wairarapa Health some data were missing.

Among those colposcopy units that provided data to the MoH, up to 58 women with an HSIL or ASCUS possible high grade cytology abnormality were reported to be waiting longer than 4 weeks at the end of a month. This is higher than that reported for the previous quarter, but fewer colposcopy units provided data for the July-September 2002 quarter. For Health Waikato, Healthcare Otago, Hutt Valley Health and MidCentral Health no women were reported to be waiting longer than 4 weeks at the end of each month during the reporting period.

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<sup>18</sup> Summary Of Findings From Questionnaire To Clarify Definitions Of CIN 1 And CIN 3 Used To Report Colposcopy Waiting Times. Unpublished Report. Ministry of Health, December 2000.

## RECOMMENDATIONS

### Data Issues

The following recommendations were previously stated in Report 5, Section 4.9, and are still applicable.

1. A suitable process to collect data required for calculating the colposcopy waiting time indicators is required urgently in order for the IMG-NCSP to monitor colposcopy services.
2. Efforts to collect data from those DHB colposcopy units who did not provide any or incomplete data for calculating the waiting time for assessment for HSIL indicator (Lakeland Health, Nelson/Marlborough Health, Northland Health, Pacific Health Tauranga, Pacific Health Whakatane, Southern Health, Tairāwhiti Healthcare, Waitemata Health and Wairarapa Health) should continue.

### Service Issues

The following recommendation was previously stated in Report 5, Section 4.9, and is still applicable.

1. Efforts to reduce the number of women with HSIL or ASCUS possible high grade cytology waiting more than 4 weeks for colposcopic assessment should continue, particularly at Northland Health and South Auckland Health.

**Table 16. Waiting time for colposcopic assessment of HSIL or ASCUS possible high grade 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.		
	October	November	December	October	November	December
Auckland Healthcare	39	33	28	0	4	9
Canterbury Health	55	59	46	2	2	2
Capital Coast Health	15	12	15	1	0	8
Coast Healthcare (West Coast)	0	1	1	17	14	12
Good Health Wanganui	7	5	0	1	3	3
Health South Canterbury	6	7	0	1	3	4
Health Waikato	28	33	8	0	0	0
Healthcare Hawkes Bay	16	4	16	0	6	0
Healthcare Otago	13	24	26	0	0	0
Hutt Valley Health	5	11	6	0	0	0
Lakeland Health‡				0	1	2
MidCentral Health	15	23	12	0	0	0
Nelson/Marlborough Health‡	7	6		4	2	
Northland Health‡				18	12	
Pacific Health† Tauranga Pacific Health						
Whakatane† South Auckland Health	51	76	55	22	19	17
Southern Health‡	8	13	12			
Tairāwhiti Healthcare† Taranaki Healthcare	13	22	11	1	4	1
Wairarapa Health‡	5	3	1			
Waitemata Health†						
Total						

† Data not provided

‡ Missing data

## **4.10 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**

Data required for the calculation of the waiting time for assessment for LSIL indicator are collected by DHB colposcopy clinics and reported to the Ministry of Health (MoH). Prior to the establishment of the IMG-NCSP data required to calculate this indicator were not collected. Because data definitions were inconsistent<sup>19</sup> and some data were missing, it was not possible to calculate this indicator. Nevertheless, 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 reported by DHB colposcopy services were provided by the MoH.

### **Results**

Table 17 shows the reported number of women with low grade cytology results referred each month for a colposcopic assessment, and the reported number of women referred for colposcopic assessment of a low grade cytology result waiting longer than 26 weeks at the end of each month for each DHB colposcopy service. The number of colposcopy units who provide data has increased. Four DHB colposcopy reporting units did not provide any data for this reporting quarter compared with eight for the previous quarter. The four units were Pacific Health Tauranga, Pacific Health Whakatane, Tairāwhiti Healthcare and Waitemata Health. For Canterbury Health, Lakeland Health, Nelson/Marlborough Health, Northland Health, South Auckland Health, Southern Health and Wairarapa Health some data were missing.

Among those DHB colposcopy services that provided data to the MoH, 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 was particularly high for Health Waikato, but overall the number of women waiting was less than that reported last quarter. For Good Health Wanganui, Healthcare Otago, Hutt Valley Health and MidCentral Health no women were reported to be waiting longer than 26 weeks at the end of October, November and December 2002.

## **RECOMMENDATIONS**

### **Data Issues**

1. See Section 4.8, Recommendation 1.

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<sup>19</sup> Summary Of Findings From Questionnaire To Clarify Definitions Of CIN 1 And CIN 3 Used To Report Colposcopy Waiting Times. Unpublished Report. Ministry of Health, December 2000.

2. Efforts to collect data from those DHB colposcopy units who did not provide any or incomplete data for calculating the waiting time for assessment for LSIL indicator (Canterbury Health, Lakeland Health, Nelson/Marlborough Health, Northland Health, Pacific Health Tauranga, Pacific Health Whakatane, Southern Health, Tairāwhiti Healthcare, Waitemata Health and Wairarapa Health) should continue.

#### Service Issues

The following recommendation was previously stated in Report 5, Section 4.10, and is still applicable.

1. Efforts to reduce the number of women with low grade cytology waiting more than 26 weeks for colposcopic assessment should continue, particularly at Capital Coast Health, Health Waikato, Lakeland Health and South Auckland Health.

**Table 17. Waiting time for colposcopic assessment of LSIL or ASCUS by DHB colposcopy service.**

DHB Colposcopy Reporting Unit	Number referred for colposcopic assessment of LSIL			Number of those referred waiting longer than 26 weeks at the end of each month		
	October	November	December	October	November	December
Auckland Healthcare	18	15	7	0	0	1
Canterbury Health‡	26	31	30			
Capital Coast Health	44	30	22	66	40	45
Coast Healthcare (West Coast)	0	4	2	3	3	3
Good Health Wanganui	18	14	21	0	0	0
Health South Canterbury	12	7	5	6	4	5
Health Waikato	49	42	41	256	233	236
Healthcare Hawkes Bay	8	1	12	0	25	0
Healthcare Otago	9	20	12	0	0	0
Hutt Valley Health	7	16	8	0	0	0
Lakeland Health‡				78	98	109
MidCentral Health	17	10	8	0	0	0
Nelson/Marlborough Health‡	38	23		10	4	
Northland Health‡				5	7	
Pacific Health Tauranga†						
Pacific Health Whakatane†						
South Auckland Health	24	21	32	70	62	24
Southern Health‡	8	15	11			
Tairāwhiti Healthcare†						
Taranaki Healthcare	13	17	20	1	1	0
Wairarapa Health‡	5	3	5			
Waitemata Health†						
Total						

† Data not provided

‡ Missing data

## **4.11 Satisfactory but limited and unsatisfactory smears by smear taker**

### **Definition**

Satisfactory but limited smears are those smears reported with a Bethesda adequacy code of A2 (satisfactory but limited).

Unsatisfactory smears are those smears reported with a Bethesda adequacy of A3 (unsatisfactory).

It is important to note that the adequacy coding of a smear is influenced by both smear taking technique and laboratory reporting practice.

The recently revised Bethesda System no longer includes a satisfactory but limited category. Until the National Cervical Screening Programme adopts this most recent revision of the Bethesda System, the IMG-NCSP will continue to report the satisfactory but limited smears by laboratory indicator.

### **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**

Table 18 shows the numbers and proportions of satisfactory, satisfactory but limited and unsatisfactory smears taken in the quarter by annual volume of smears taken by each smear taker group. Overall, 97,488 smears were taken during the reporting quarter, of which 16 were taken by lay smear takers, 62,820 by medical smear takers, 25,508 by nurses, 8,673 by specialists and 471 by midwives. Of the 97,488 smears, 81.5% were considered satisfactory, 17.7% were considered satisfactory but limited and 0.8% were considered unsatisfactory for evaluation. Overall, the proportion of satisfactory but limited and the proportion of unsatisfactory smears were both within the targets.

Except for the lay smear taker group, the proportion of satisfactory but limited smears was within the target of not more than 20% for each entire smear taker group. For the lay smear taker group this proportion was 25.0%. Lay smear takers, medical smear takers and midwives, who took fewer than 30 smears in the 12 months prior to 31 December 2002, the proportion of satisfactory but limited smears was greater than 20%. This proportion was higher for the midwives (28.9%) compared with the lay smear takers (25.0%) and medical smear takers (22.7%). The proportion of satisfactory but limited smears was also greater than 20% for specialists who took 30-100 smears annually (21.6%).

The proportion of unsatisfactory smears was within the target range of 0.5-2.0 % for each of the medical smear takers, nurses and specialist groups. For lay smear takers, none of the 16 smears taken during the quarter were considered unsatisfactory for assessment and for midwives 2 of 471 (0.4%) of smears were considered unsatisfactory for assessment. Amongst the health professional subgroups, the proportion of unsatisfactory smears was less than 0.5% for nurses who took fewer than 30 smears and midwives who took 30-100 smears or more than 100 smears. For specialists who took 30-100 smears annually, the proportion of smears reported as unsatisfactory (2.8%) was above the target range of 0.5 - 2.0%.

## RECOMMENDATIONS

### Data Issues

1. The Ministry of Health should review how the quality of smear taking by smear takers is monitored.

**Table 18. 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 [target = not more than 20%]		Unsatisfactory smears [target = 0.5 – 2.0%]	
			Number	Proportion (%)	Number	Proportion (%)	Number	Proportion (%)
Lay	< 30	16	12	75.0	4	25.0	0	0.0
	30-100	0	0	0.0	0	0.0	0	0.0
	> 100	0	0	0.0	0	0.0	0	0.0
	Total	16	12	75.0	4	25.0	0	0.0
Medical	< 30	3,321	2,525	76.0	753	22.7	43	1.3
	30-100	16,685	13,342	80.0	3,179	19.1	164	1.0
	> 100	42,814	34,566	80.7	7,941	18.5	307	0.7
	Total	62,820	50,433	80.3	11,873	18.9	514	0.8
Nurse	< 30	1,667	1,367	82.0	295	17.7	5	0.3
	30-100	8,637	7,231	83.7	1,363	15.8	43	0.5
	> 100	15,204	12,941	85.1	2,183	14.4	80	0.5
	Total	25,508	21,539	84.4	3,841	15.1	128	0.5
Specialist	< 30	161	127	78.9	32	19.9	2	1.2
	30-100	737	557	75.6	159	21.6	21	2.8
	> 100	7,775	6,407	82.4	1,253	16.1	115	1.5
	Total	8,673	7,091	81.8	1,444	16.6	138	1.6
Midwife	< 30	114	80	70.2	33	28.9	1	0.9
	30-100	106	86	81.1	20	18.9	0	0.0
	> 100	251	217	86.5	33	13.1	1	0.4
	Total	471	383	81.3	86	18.3	2	0.4
Total		97,488	79,458	81.5	17,248	17.7	782	0.8

# Appendix 1

The following is a list of national indicators that will be reported 6-monthly or annually. Each indicator is defined and the target, if any, is stated.

## **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.

## **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.

## **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.

## **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.

## **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.

## **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 Maori women.

The target for stage of cervical cancer is 70% or more of new cervical cancers classified as FIGO stage I at diagnosis.

## **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 Maori women.

## **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.

## **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.

## **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.

## **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.

## **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.

## **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.

## **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.

## Appendix 2

### **Bethesda codes by broad cytological abnormality category used for IMG-NCSP reports.**

Bethesda Coding Standard 1998 was used for this monitoring period.

- (a) Negative for dysplasia or malignancy
- (b) Abnormal not otherwise specified – C6
- (c) Atypical squamous cells of undetermined significance, excluding ASCUS possible high grade (ASCUS-LG) – C3A1; C3A1A; C3A1B; C3A1C; C3A1D; C3A1F; C3A1G
- (d) Low grade squamous intraepithelial lesion (LSIL) – C3A2A; C3A2A1; C3A2A2; C3A2A3
- (e) Atypical glandular cells of undetermined significance not otherwise specified or favouring a reactive process (AGUS favour reactive) – C3B2; C3B2A; C3B2B; C3B2B1; C3B2C; C3B2E
- (f) Atypical glandular cells of undetermined significance favouring a hyperplastic or dysplastic process (AGUS favour dysplasia) – C3B2A1; C3B2B2; C3B2D
- (g) Atypical squamous cells of undetermined significance, possible high grade (ASCUS-HG) – C3A1E
- (h) High grade squamous intraepithelial lesion (HSIL) – C3A2B; C3A2B1; C3A2B2; C3A2B3; C3A2B4; C3A2B5; C3A2B6; C3A2B7
- (i) Adenocarcinoma-in-situ (AIS) – C3B3D; C3B3E; C3B3F
- (j) Adenocarcinoma (endocervical, not otherwise specified and other) – C3B3; C3B3A; C3B3B; C3B3C
- (k) Cancer not otherwise specified – C3C; C4
- (l) Invasive squamous carcinoma of the cervix – C3A3

## Appendix 3

### **Snomed codes by broad histological abnormality category used for the IMG-NCSP reports.**

- (a) Normal – M60000
- (b) Other non-neoplastic – M40000; M72480; M73000; M01000
- (c) Polyp – M76800
- (d) Atypia/HPV – M67000; M76700; M76720
- (e) CIN - not otherwise specified – M67015
- (f) LSIL – M67016
- (g) HSIL – M67017; M80102; M80702
- (h) Glandular dysplasia – M67031
- (i) Adenocarcinoma-in-situ – M81402
- (j) Other primary cervical cancer – M80203; M88003; M80003
- (k) Metastatic (non-cervical) carcinoma – M80006
- (l) Invasive adenocarcinoma – M81403
- (m) Adenosquamous carcinoma – M85603
- (n) Microinvasive squamous carcinoma – M80763
- (o) Invasive squamous carcinoma – M80703