

# *Quarterly Report 12*

## *National Cervical Screening Programme*

*July to September 2003*

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## **1. Executive Summary**

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

### ***Follow-up of women with high grade cytology***

In total, 4,410 women had a high grade cytology result recorded on the NCSP Register between 1 October 2001 and 30 September 2002. More than three-quarters (77.8%) of these women were recorded as having had a histology specimen taken within 12 weeks of their high grade smear being taken. This was less than the target of 90%. For 269 of the 4,410 women, a subsequent histology result was not recorded on the NCSP Register. This is similar to the proportion reported in the last quarter. The proportions of women who had no histology recorded on the NCSP-Register varied widely amongst the NCSP regions and by ethnicity.

### ***Laboratory smear reporting***

Thirteen laboratories reported cervical cytology during this quarter. Overall, of the 97,899 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%. The two-hospital based laboratories reported abnormalities in 17.7% and 24.4% of the smears they read; the target was also exceeded by MedLab Bay of Plenty (11.1%). No laboratory exceeded the 96% target for negative for dysplasia or malignancy, and each laboratory exceeded the lower target limit of 0.6% for HSIL reporting, although there were noticeable differences between the laboratories for these indicators.

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

Eleven of the thirteen laboratories reporting cervical cytology met the 7-day cytology turn around time target of 90%, unlike last quarter when all 12 laboratories met this target. Nine laboratories achieved the 14-day target of 100%.

### ***Laboratory histology turn around time***

Twenty-nine laboratories reported cervical histology during the quarter. Two laboratories did not meet the 5-day histology turn around time target of 90%. Ten laboratories had reported 100% of histology results within 10 working days and eight had reported 99% within this time.

### ***Satisfactory but limited and unsatisfactory smears***

The proportion of smears reported as satisfactory but limited varied considerably among the laboratories. Two laboratories exceeded the target of not more than 20% satisfactory but limited smears. Three laboratories reported fewer than the target of 0.5% of smears as unsatisfactory, and one reported over the target of 2% as unsatisfactory.

All smear taker groups (lay, medical, nurse, specialist and midwife) met the target for satisfactory but limited smears. When split by annual smear taking volume, smear taker subgroups who took more than 30 smears appeared to do better in terms of satisfactory but limited smears compared to those with a low annual volume. Almost all smear taker groups and subgroups split by annual smear volume met the target for the proportion of unsatisfactory smears.

### ***Positive Predictive Value of high grade cytology***

Overall, the PPV of the programme for high grade cytology was 74.7% and is within the recommended target range (65 to 85%). Only one laboratory fell below the lower limit of this target.

### ***Short interval re-screening***

For satisfactory and satisfactory but limited smears combined, the overall level of short interval re-screening was 18.9%, with small variations between age groups and by ethnicity, and larger variations between regions. When only satisfactory smears were included, the overall figure (9.5%) met the less than 10% target, although this was not met for all age groups or all regions.

***Delayed re-screening for women with high grade abnormality***

There were 29,958 participating women aged 20-69 years with a prior high grade cytological or histological abnormality recorded on the NCSP-Register who had completed assessment and treatment before 1 July 2002. Of these women, 21,179 (70.7%) had a smear within the subsequent 15 months. This was less than the target of 85% and was considerably lower for Māori and Pacific women compared to non-Māori/ non-Pacific women. There were 1,828 (6.1%) of the 29,958 women with a high grade lesion who had no subsequent smear result recorded.

## **2. Background**

The Independent Monitoring Group (IMG) of the National Cervical Screening Programme (NCSP) has been responsible for providing independent quantitative monitoring of the NCSP since 2001. Part of this responsibility was to produce quarterly reports of national indicators for the NCSP. These indicators were established in 2000. The report for the period January to March 2003 (Report 10) was published in July 2003 by the University of Otago. In May 2004, NSU approached the Centre for Public Health Research (CPHR), Massey University, with a request to provide independent advice on the quality indicators for the NCSP for the period April to June 2003. The resulting report formed Quarterly Report 11.

In August 2004, the NSU again requested CPHR to provide epidemiological interpretation of NCSP quality indicators for the period July to September 2003, which forms the basis of the current report, Quarterly Report 12. All data included in this report were provided to CPHR by the NSU.

### 3. Abbreviations

The following abbreviations are used in this report

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

## **4. Recommendations**

### **4.1 Data Issues**

1. Provide trends over time of the proportion of women with a high grade cytology have no subsequent histology result recorded on the NCSP Register.
2. Provide trends over time to investigate patterns of short interval re-screening.
3. The target needs to be reviewed to see if the current parameters are appropriate.
4. Clarification is required as to what is included in the value of “n” in the numbers of re-screening.

### **4.2 Services Issues**

1. Reasons why 269 women with a high grade cytology have no subsequent histology result recorded on the NCSP Register need to have a comprehensive audit undertaken.
2. Reasons why 57 women with a high grade cytology report took longer than 52 weeks to have a histology taken should be included in the audit.
3. The 82 women who have not “signed in” on the NCSP Register need to be prioritised in the audit.
4. To audit the population in Auckland Hospital Laboratories and Canterbury Health Laboratories to see whether this explains the patterns of results for these laboratories.
5. The NSU is to investigate why Medlab Bay of Plenty is above the total abnormalities target.
6. Regular reports and feedback are sent to smear takers by the NCSP, and those smear takers that are out of the targets should be followed up individually.
7. Examine the trends of short interval re-screening and if there continues to be a trend in particular regions, consider initiatives to provide screening interval education.

## 5. Methods

The National Screening Unit (NSU) of the Ministry of Health (MoH), through a committee of experts and a consultation process, established national indicators for the National Cervical Screening Programme (NCSP) in 2000. Where it was considered appropriate and feasible, the NSU set targets for some indicators. Each indicator is described in the results section under the separate headings that identify the specific indicators. The results for each indicator are discussed in relation to the set targets. For indicators with no target, changes over time are described. These results will be presented to the NCSP Advisory Group, where recommendations will be made.

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

It is understood that the following decisions have been made in the analysis of the data. Unless otherwise stated, a woman's age at the end of the reporting quarter were used when calculating the indicators. The registration status and demographic details of each woman at the time of the data download were used for all calculations.

Women were assigned to both a NCSP region and a District Health Board (DHB) area by the NCSP Register. Each woman was allocated to the NCSP region and DHB area in which they lived, with two exceptions. Women whose address was unknown were allocated to the NCSP region according to their previously known address. Women who usually had their smears in a NCSP region other than the one where they lived

were allocated to the NCSP region where they usually had their smears. For women in either of these situations, if the NCSP regions to which they were allocated had boundaries identical to a DHB area, then they were allocated to that DHB, otherwise the DHB area in which they lived was recorded as unspecified.

## **6. Results**

### **6.1 Follow-up of women with high grade cytology**

#### ***Definition***

High grade cytology is defined as a cytology result of ASCUS possible high grade (ASCUS-HG), HSIL or more serious abnormality according to the hierarchy of the Bethesda Coding System (1991) (Appendix 1). Follow-up of women with a high grade cytology result is estimated using the timeliness with which a histology specimen is taken following the high grade cytology result.

#### ***Target***

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

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

and

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

#### ***Calculation***

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

had a subsequent smear taken by a non-specialist or specialist. This indicator was calculated for women of all ethnic groups, and separately for Māori, Pacific and non-Māori, non-Pacific women. It was also calculated for each NCSP region.

### ***Results***

The timeliness with which a histology specimen was taken amongst women who had a high grade cytology result is shown in Table 1. Between 1 October 2001 and 30 September 2002, 4,410 women had a high grade cytology result. Of these, 3,431 (77.8%) had a histological specimen taken within 12 weeks of the abnormal cytology, compared to the target of 90%. This value is almost identical to that reported in the previous two quarters (77.7% and 77.2%). The proportion of women who had a histological specimen taken within 52 weeks of the high grade cytology was 92.6%, compared to the target of 99%. This value is almost identical to that reported in the previous two quarters (92.9% and 92.3%). There was no histology reported on the NCSP Register for 269 (6.1%) women who had a high grade cytological abnormality.

The timeliness of having a histological specimen taken following a high grade smear differed by ethnicity, as shown in Table 2. Compared to non-Māori, non-Pacific women, Māori and Pacific women were less likely to have a histological specimen taken within the recommended time periods. For example, at 12 weeks, 80.5% of non-Māori, non-Pacific women had a report of a histological specimen, compared to 66.0% of Māori and 66.2% of Pacific women. These figures are similar to those reported in the last quarter (80.2%, 66.6% and 65.5% respectively). The differences by ethnicity persisted for all time periods following a suspected high grade smear.

The timeliness of having a histological specimen taken following a high grade smear differed by NCSP region, see Table 3. No region achieved the target of 90% of women having a histological specimen taken within 12 weeks of the smear. The region with the highest proportion of women who had histological report within this time period was Tairāwhiti (88.4%). The poorest performers were Wellington (71.2%) and West Coast (71.4%); Wellington also performed least well in the last quarter.

In all regions except Canterbury, the proportion of women who had a high grade smear result with a subsequent histology taken within 52 weeks was more than 90%. Only one region (Nelson / Marlborough) reached the target of 99% of women having histological specimens taken within 52 weeks of a high grade smear. This same region was also the only region to achieve this indicator in the previous quarter. All of the regions have similar timeliness in reporting histological results for women with high grade smears compared to the previous quarter.

A relatively large number of women (n=269, 6.1%) had no histology report recorded on NCSP Register following a high grade smear. Absence of such a report was much more common in Pacific (14.7%) and Māori (9.4%) women compared to non-Māori, non-Pacific women (5.1%), see Table 2. There were also differences by region in the absence of a histological report following a high grade smear, see Table 3. Such an absence was common (above 6%) in Auckland, Canterbury, Taranaki and Wellington and least common in Nelson / Marlborough.

Of the 269 women who had no histology result recorded on the NCSP-Register following a high grade smear, 83 (31%) had no subsequent smear recorded and 72 (27%) had a follow-up smear taken by a non-specialist. Of these 155 women who had either no follow-up smear or a smear taken by a non-specialist, 107 (69%) were recorded on the register as having been 'signed in' following their high grade smear result, suggesting that clinical management of an abnormality had been completed. The remaining 48 (31%) women did not appear to have been signed in, indicating that their follow-up was less clear.

Possible reasons for these women not being signed include having

- had further investigations and treatment, but their histology reports were erroneously omitted from the NCSP-Register
- moved overseas and had follow-up there,
- no indications for biopsy at colposcopic examination
- chosen not to have their histology results to be recorded on the NCSP Register.

## ***Recommendations***

### ***Service Issues***

1. Reasons why 269 women with a high grade cytology have no subsequent histology result recorded on the NCSP Register need to have a comprehensive audit undertaken.
2. Reasons why 57 women with a high grade cytology report took longer than 52 weeks to have a histology taken should be included in the audit.
3. The 82 women who have not “signed in” on the NCSP Register need to be prioritised in the audit.

### ***Data Issues***

1. Provide trends over time of the proportion of women with a high grade cytology have no subsequent histology result recorded on the NCSP Register.

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

Time period	Number	Proportion (%)	Cumulative Proportion (%)
Within 12 weeks	3,431	77.8	77.8
13 to 26 weeks	461	10.4	88.2
27 to 52 weeks	192	4.4	92.6
More than 52 weeks	57	1.3	93.9
Subtotal	4,141		
No histology recorded on NCSP Register	269	6.1	100
Total	4,410		

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

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

Time Period	Māori women			Pacific women			Non-Māori, non-Pacific women		
	Number	Proportion %	Cumulative Proportion %	Number	Proportion %	Cumulative Proportion %	Number	Proportion %	Cumulative Proportion %
<b>Within 12 weeks</b>	449	66.0	66.0	90	66.2	66.2	2,892	80.5	80.5
<b>13 to 26 weeks</b>	102	15.0	81.0	14	10.3	76.5	345	9.6	90.1
<b>27 to 52 weeks</b>	50	7.4	88.4	9	6.6	83.1	133	3.7	93.8
<b>More than 52 weeks</b>	15	2.2	90.6	3	2.2	85.3	39	1.1	94.9
<b>Subtotal</b>	616			116			3,409		
<b>No histology recorded on NCSP Register</b>									
	64	9.4	100	20	14.7	100	185	5.1	100
<b>Total</b>	680			136			3,594		

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

Note: the follow-up of the 269 women with no histology recorded on NCSP Register are shown in Table 4.

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

NCSP region	Time Periods										Total
	Within 12 weeks		13 to 26 weeks		27 to 52 weeks		Within 52 weeks		No Histology		
	No.	%	No.	%	No.	%	No.	%	No.	%	
<b>Auckland</b>	941	76.8	114	9.3	59	4.8	1,114	90.9	94	7.7	1,226
<b>Bay of Plenty</b>	309	75.2	54	13.1	18	4.4	381	92.7	24	5.8	411
<b>Canterbury</b>	460	80.0	43	7.5	14	2.4	517	89.9	51	8.9	575
<b>Hawke's Bay</b>	138	82.6	16	9.6	8	4.8	162	97.0	3	1.8	167
<b>Manawatu/ Wanganui</b>	241	80.1	29	9.6	16	5.3	286	95.0	10	3.3	301
<b>Northland</b>	144	80.9	14	7.9	7	3.9	165	92.7	10	5.6	178
<b>Nelson/ Marlborough</b>	111	80.4	23	16.7	3	2.2	137	99.3	1	0.7	138
<b>Otago/ Southland</b>	319	85.5	26	7.0	9	2.4	354	94.9	16	4.3	373
<b>Tairāwhiti</b>	38	88.4	2	4.7	0	0.0	40	93.0	2	4.7	43
<b>Taranaki</b>	110	74.8	17	11.6	8	5.4	135	91.8	11	7.5	147
<b>West Coast</b>	25	71.4	8	22.9	0	0.0	33	94.3	2	5.7	35
<b>Waikato</b>	220	76.1	42	14.5	12	4.2	274	94.8	11	3.8	289
<b>Wellington</b>	375	71.2	73	13.9	38	7.2	486	92.2	34	6.5	527
<b>Total</b>	3,431		461		192		4,084		269		4,410

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

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

Subsequent smear	Women's status since high grade cytology result		
	Not signed in	Signed in	Total
No subsequent smear	29	54	83 (31%)
Subsequent smear taken by non-specialist	19	53	72 (27%)
Smear taken by specialist	34	80	114 (42%)
Total	82	187	269

## **6.2 Laboratory smear reporting**

### ***Definition***

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

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

### ***Target***

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

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

### ***Calculation***

The Bethesda diagnosis codes, as recorded on the NCSP Register, of satisfactory or satisfactory but limited smears taken during the reporting quarter were used to calculate the number of smears in each broad cytological category 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 (see Appendix 1). Total abnormalities included all smears with a diagnosis code of ASCUS or more serious abnormality according to the hierarchy of broad cytological categories. Smear results for women of all ages were included. Smears recorded as being unsatisfactory for evaluation were excluded.

## ***Results***

During the quarter, 97,899 satisfactory or satisfactory but limited smears were taken. The results of these, by laboratory are shown in Table 5. The number of such smears reported by each laboratory ranged from 1,558 for Canterbury Health Laboratories to 23,561 for Diagnostic MedLab Auckland. Overall, 90,621 (92.6%) smears were reported as negative for dysplasia or malignancy. This was identical to the proportion reported in the last two quarters, and within the target of not more than 96% of smears being negative for dysplasia or malignancy. Although no laboratory exceeded this upper limit, there was variation amongst the laboratories. The two hospital-based laboratories, Auckland Hospital Laboratory and Canterbury Health Laboratories, which are also the smallest volume laboratories, reported lower proportions of the smears they read as negative for dysplasia or malignancy compared with the other laboratories. This was most noticeable for Auckland Hospital Laboratory, which reported 75.6% of smears as negative for dysplasia or malignancy.

The proportion of smears reported with a HSIL abnormality was 1.2% for all laboratories combined. This figure met the target of not less than 0.6% and was identical to that reported for previous reporting quarters. Each laboratory individually also met that target. Both hospital-based laboratories (Auckland Hospital Laboratory and Canterbury Health Laboratories) reported high numbers of HSIL abnormalities. This was particularly noticeable for Auckland Hospital Laboratory, which reported 5.2% of all smears to be HSIL.

For all laboratories combined, the target of not more than 10% of smears reported as abnormal was not exceeded. This proportion was 7.4%, identical to the previous quarter. Both hospital-based laboratories reported more than 10% of smears they processed to be abnormal: Auckland Hospital Laboratory (24.4%) and Canterbury Health Laboratories (17.7%). These proportions were similar to the last quarter (26% and 14.3% respectively). The only other laboratory to report more than 10% total abnormalities was MedLab Bay of Plenty (11.1%), which was below 10% target in the previous quarter (9.3%).

The proportion of smears reported as LSIL varied between laboratories, but was between 2.3% and 3.4% for all laboratories, with the exception of the two hospital-

based laboratories (Auckland Hospital Laboratory: 9.5%; Canterbury Health Laboratory: 7.0%) and MedLab Central (5%). These three laboratories also reported the highest proportion of LSIL abnormalities in the last quarter. Note that no target is set for proportion of smears reported as LSIL.

### ***Recommendations***

#### ***Service Issues***

1. To audit the population in Auckland Hospital Laboratories and Canterbury Health Laboratories to see whether this explains the patterns of results for these laboratories.
2. The NSU is to investigate why Medlab Bay of Plenty is above the total abnormalities target.

**Table 5: The number and proportion of satisfactory or satisfactory but limited smears in broad cytological categories for each laboratory**

Laboratory	Negative for dysplasia or malignancy <sup>1</sup>		Total ASCUS (including ASCUS-HG)		LSIL		ASCUS-HG		HSIL <sup>2</sup>		Total Abnormalities <sup>3</sup>		Total smears
	No	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Auckland Hospital Lab.	1,991	75.6	248	9.4	249	9.5	31	1.2	136	5.2	643	24.4	2,634
Canterbury Health Lab.	1,283	82.4	110	7.1	109	7.0	5	0.3	48	3.1	275	17.7	1,558
Diagnostic MedLab Auckland	22,258	94.5	542	2.3	551	2.3	25	0.1	200	0.8	1,303	5.5	23,561
MedLab Bay of Plenty	5,736	88.9	418	6.5	217	3.4	15	0.2	58	0.9	715	11.1	6,451
MedLab Central	7,444	92.1	142	1.8	406	5.0	4	0.1	77	1.0	642	7.9	8,086
MedLab Christchurch	10,077	93.1	353	3.3	251	2.3	46	0.4	116	1.1	744	6.9	10,821
MedLab Hamilton	7,823	93.5	229	2.7	217	2.6	16	0.2	91	1.1	547	6.5	8,370
MedLab Taranaki	3,546	92.1	155	4.0	93	2.4	4	0.1	57	1.5	306	7.9	3,852
MedLab Wellington	9,348	91.7	391	3.8	343	3.4	14	0.1	89	0.9	845	8.3	10,193
PathLab Waikato	1,547	90.3	89	5.2	47	2.7	4	0.2	26	1.5	167	9.7	1,714
SCL* Christchurch	4,928	94.8	117	2.3	118	2.3	7	0.1	35	0.7	272	5.2	5,200
SCL* Dunedin	10,874	94.3	67	0.6	380	3.3	45	0.4	190	1.6	658	5.7	11,532
Valley Diagnostic Lab.	3,766	95.9	31	0.8	99	2.5	2	0.1	29	0.7	161	4.1	3,927
<b>Total</b>	<b>90,621</b>	<b>92.6</b>	<b>2892</b>	<b>3.0</b>	<b>3080</b>	<b>3.1</b>	<b>218</b>	<b>0.2</b>	<b>1152</b>	<b>1.2</b>	<b>7278</b>	<b>7.4</b>	<b>97,899</b>

\* SCL: Southern Community Laboratory

Targets are: <sup>1</sup> not more than 96%, <sup>2</sup> not less than 0.6%, <sup>3</sup> not more than 10%

### **6.3 Laboratory cytology turn around time**

#### ***Definition***

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

#### ***Target***

The targets for the laboratory cytology turn around time are:

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

and

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

#### ***Calculation***

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

#### ***Results***

The proportion of smears received and reports issued within specified time periods during the period 1 July to 30 September 2003 for each laboratory processing cervical cytology are shown in Table 6. Overall, 94% of the 98,758 smears received by laboratories were reported within 7 working days. This was greater than the target of 90%, and identical to that reported last quarter (94.8%). Eleven of the thirteen laboratories achieved the 7-day target of 90%, compared to eight of 13 in the last quarter. The 7-day cytology turn around time for MedLab Bay of Plenty was particularly poor (22.7%) in comparison with 86.8% in the previous quarter. PathLab

Waikato achieved 73.7%, compared to 82.1% in the last quarter. Valley Diagnostic Laboratory, which was below 40% for this and the previous quarter, achieved the 7-day target in this quarter (96.4%).

Overall, the 14-day target of 100% was almost achieved, with only 34 smears not having been reported within 14 working days. The four laboratories which did not meet the 14-day target were close to achieving it.

***Recommendations***

None

**Table 6: Timeliness of the reporting of smears by laboratory**

Laboratory	Number of smears processed	Within 7 working days (%)		From 8 to 14 working days (%)		Within 14 working days (cumulative %)		More than 14 working days (%)	
		n	%	n	%	n	%	n	%
Auckland Hospital Lab.	2,689	2,671	99.3	17	0.6	2,688	>99.9	1	<0.1
Canterbury Health Lab.	1,583	1,583	100.0	0	0.0	1,583	100.0	0	0.0
Diagnostic MedLab Auckland	23,704	23,703	>99.9	1	<0.1	23,704	100.0	0	0.0
MedLab Bay of Plenty	6,468	1,466	22.7	4,985	77.1	6,451	99.7	17	0.3
MedLab Central	8,106	8,097	99.9	9	0.1	8,106	100.0	0	0.0
MedLab Christchurch	10,964	10,964	100.0	0	0.0	10,964	100.0	0	0.0
MedLab Hamilton	8,399	8,275	98.5	124	1.5	8,399	100.0	0	0.0
MedLab Taranaki	3,918	3,908	99.7	10	0.3	3,918	100.0	0	0.0
MedLab Wellington	10,305	10,191	98.9	114	1.1	10,305	100.0	0	0.0
PathLab Waikato	1,718	1,266	73.7	452	26.3	1,718	100.0	0	0.0
SCL* Christchurch	5,238	5,236	100.0	2	<0.1	5,238	100.0	0	0.0
SCL* Dunedin	11,687	11,672	99.9	11	0.1	11,683	>99.9	4	<0.1
Valley Diagnostic Lab.	3,979	3,837	96.4	130	3.3	3,967	99.7	12	0.3
<b>Total</b>	<b>98,758</b>	<b>92,869</b>	<b>94.0</b>	<b>5,855</b>	<b>5.9</b>	<b>98,724</b>	<b>&gt;99.9</b>	<b>34</b>	<b>&lt;0.1</b>

\* SCL: Southern Community Laboratory

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

## **6.4 Laboratory histology turn around time**

### ***Definition***

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

### ***Target***

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

### ***Calculation***

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

### ***Results***

The timeliness of histology reporting by the 29 laboratories which provided results to the NCSP Register in this quarter is shown in Table 7. There were a total of 7,097 histology specimens were recorded on the NCSP Register, a similar number to the

previous quarter. The number of histology specimens reported by each laboratory varied considerably, ranging from 25 in SCL Hawke's Bay to 958 in Diagnostic MedLab Auckland. For all laboratories combined, the proportion of histological specimens reported on within five days histology was 95.0%, exceeding the target of 90%, and slightly increased from the figure reported in the last quarter (91.8%).

Only two laboratories did not meet the 5-day 90% target: Auckland Hospital Laboratory (58.5%) and Wellington Hospital Laboratory (84.6%). These two laboratories have fallen below this target for the last two quarters also, although this quarter represents a significant increase in the proportion of specimens reported in Wellington Hospital Laboratory (up from 75.1%). In contrast, Auckland Hospital Laboratory has not changed significantly since the last quarter (60.7%).

Most laboratories had reported all or almost all histology results within 10 working days of the specimen arriving at the laboratory. Overall, 45 (0.6%) specimens were reported more than 10 working days after the time they were received by the laboratory, an improvement compared to an overall figure of 1.6% in the last quarter. In particular, Rotorua Hospital Laboratory has significantly improved its timeliness in reporting since the last quarter, when it reported 64.5% within 5 days, compared to 98% in this quarter.

### ***Recommendations***

None

**Table 7: Timeliness of the reporting of histology by laboratory**

Laboratory	Number of specimens processed n	Within 5 working days		6 to 10 working days		11 or more working days	
		n	%	n	%	n	%
Auckland Hospital Laboratory	265	155	58.5	97	36.6	13	4.9
Canterbury Health Laboratories	573	546	95.3	24	4.2	3	0.5
Diagnostic MedLab Auckland	958	950	99.2	7	0.7	1	0.1
Hutt Hospital	167	150	89.8	16	9.6	1	0.6
Memorial Hospital Hastings	35	32	91.4	2	5.7	1	2.9
Middlemore Hospital	265	265	100.0	0	0.0	0	0.0
MedLab Bay of Plenty	515	506	98.3	8	1.6	1	0.2
MedLab Central	615	579	94.2	35	5.7	1	0.2
MedLab Christchurch	56	56	100.0	0	0.0	0	0.0
MedLab Hamilton	31	30	96.8	1	3.2	0	0.0
MedLab Southland	65	65	100.0	0	0.0	0	0.0
MedLab Taranaki	63	63	100.0	0	0.0	0	0.0
MedLab Timaru	88	88	100.0	0	0.0	0	0.0
MedLab Wellington	255	241	94.5	12	4.7	2	0.8
Nelson Diagnostic Laboratory	61	57	93.4	3	4.9	1	1.6
Nelson Hospital	216	196	90.7	14	6.5	6	2.8
Northland Pathology	185	177	95.7	5	2.7	3	1.6
North Shore Hospital	452	448	99.1	4	0.9	0	0.0
PathLab Waikato	196	195	99.5	1	0.5	0	0.0
Rotorua Hospital	150	147	98.0	1	0.7	2	1.3
SCL* Christchurch	172	172	100.0	0	0.0	0	0.0
SCL* Dunedin	472	471	99.8	1	0.2	0	0.0
SCL* Hawke's Bay	25	25	100.0	0	0.0	0	0.0
Southland Hospital	215	199	92.6	12	5.6	4	1.9
Taranaki Base Hospital	122	119	97.5	3	2.5	0	0.0
Valley Diagnostic Laboratory	67	67	100.0	0	0.0	0	0.0
Waikato Hospital	440	419	95.2	20	4.6	1	0.2
Wanganui Hospital	61	61	100.0	0	0.0	0	0.0
Wellington Hospital	312	264	84.6	43	13.8	5	1.6
<b>Total</b>	<b>7,097</b>	<b>6,743</b>	<b>95.0</b>	<b>309</b>	<b>4.4</b>	<b>45</b>	<b>0.6</b>

\* SCL: Southern Community Laboratory

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

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

### ***Definition***

Satisfactory but limited smears are those smears reported with a Bethesda adequacy code of A2. Unsatisfactory smears are those smears reported with a Bethesda adequacy of A3 (Bethesda Coding System (1991), given in Appendix 1). It is important to note that the adequacy coding of a smear is influenced by both smear taking technique and laboratory reporting practice. The revised Bethesda System 2001 no longer includes a satisfactory but limited category. When the NCSP adopts the revised Bethesda System 2001, consideration will be given to changing the current target for unsatisfactory smears.

### ***Target***

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

### ***Calculation***

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

### ***Results***

The number and proportion of satisfactory but limited and unsatisfactory smears taken during the quarter and reported by each cytology laboratory is shown in Table 8. Overall, 98,758 smears were processed, of which 16.0% were reported as satisfactory but limited, a figure similar to that reported for the last quarter (16.7%) 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 6.5% for Southern Community Laboratory Dunedin to 21.1% for Auckland Hospital

Laboratory. Diagnostic MedLab Auckland (20.8%) also reported more than 20% of the smears they read as satisfactory but limited.

Overall, 859 (0.9%) of the 98,758 smears processed were reported as unsatisfactory for evaluation. This is a similar figure to that reported in the last two quarters (0.7% and 0.8%) and within the target range of 0.5% to 2.0%. Auckland Hospital Laboratory reported more than 2.0% of smears as unsatisfactory (2.1%), which they also did in the last two quarters. No other laboratory exceed the 2% target. MedLab Bay of Plenty, MedLab Central and PathLab Waikato failed to meet the 0.5% threshold. MedLab Central also failed to meet this target in the previous quarter.

***Recommendations***

None

**Table 8: The number and proportion of satisfactory but limited and unsatisfactory smears by laboratory**

Laboratory	Number of smears processed	Satisfactory but limited smears <sup>1</sup>		Unsatisfactory smears <sup>2</sup>	
		n	%	n	%
Auckland Hospital Lab.	2,689	566	21.1	55	2.1
Canterbury Health Lab.	1,583	262	16.6	25	1.6
Diagnostic MedLab Auckland	23,704	4,931	20.8	143	0.6
MedLab Bay of Plenty	6,468	1,021	15.8	17	0.3
MedLab Central	8,106	1,271	15.7	20	0.3
MedLab Christchurch	10,964	2,060	18.8	143	1.3
MedLab Hamilton	8,399	1,163	13.9	29	0.4
MedLab Taranaki	3,918	776	19.8	66	1.7
MedLab Wellington	10,305	1,591	15.4	112	1.1
PathLab Waikato	1,718	268	15.6	4	0.2
SCL* Christchurch	5,238	518	9.9	38	0.7
SCL* Dunedin	11,687	754	6.5	155	1.3
Valley Diagnostic Lab.	3,979	650	16.3	52	1.3
<b>Total</b>	<b>98,758</b>	<b>15,831</b>	<b>16.0</b>	<b>859</b>	<b>0.9</b>

Targets: <sup>1</sup>not more than 20%, <sup>2</sup> 0.5 to 2%

\* SCL: Southern Community Laboratory

## **6.6 Satisfactory but limited and unsatisfactory smears by smear-taker**

### ***Definition***

Definitions and a description of issues surrounding satisfactory but limited and unsatisfactory smears are given on Page 30.

### ***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 group 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 group. For each group, the number of satisfactory but limited and unsatisfactory smears was expressed as a proportion of the total number of smears taken by that group.

### ***Results***

The numbers and proportions of satisfactory, satisfactory but limited and unsatisfactory smears taken in this quarter by annual volume of smears taken in each smear taker group is shown in Table 9. Overall, 98,758 smears were taken during the reporting quarter, of which 10 (<1%) were taken by lay smear takers, 61,702 (62%) by medical smear takers, 28,608 (29%) by nurses, 8,051 (8%) by specialists and 387 (<1%) by midwives. These proportions and volumes are similar to those reported in the last quarter.

The proportion of satisfactory but limited smears was within the target of not more than 20% for each smear taker group as a whole. When smear taker groups were considered by annual volume, the proportion of satisfactory but limited smears was

greater than 20% for medical smear takers who took fewer than 30 smears in the 12 months prior to 30 September 2003 and for specialists and midwives who took fewer than 100 smears in that period. The subgroup with the consistently lowest proportion of satisfactory but limited smears was nurses. The numbers of smears in each group, when split by annual volume, is too small for meaningful analyses for some smear taker groups.

The proportion of unsatisfactory smears was within the target range of 0.5 to 2.0 % for all smear taker groups, with the exception of specialist smear takers with an annual volume of under 30 smears. None of the smears taken by lay smear takers or those taken by midwives with an annual volume over 100 smears per year were reported as unsatisfactory for assessment.

### ***Recommendations***

#### ***Service Issues***

1. Regular reports and feedback are sent to smear takers by the NCSP, and those smear takers that are out of the targets should be followed up individually.

**Table 9: 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	Satisfactory smears		Satisfactory but limited smears		Unsatisfactory Smears	
			Number	%	Number	%	Number	%
Lay	<30	3	3	100.0	0	0.0	0	0.0
	30-100	7	7	100.0	0	0.0	0	0.0
	<b>Total</b>	<b>10</b>	<b>10</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>
Medical	<30	3,882	3,031	78.1	786	20.3	65	1.7
	30-100	17,236	14,128	82.0	2,913	16.9	195	1.1
	>100	40,584	33,685	83.0	6,589	16.2	310	0.8
	<b>Total</b>	<b>61,702</b>	<b>50,844</b>	<b>82.4</b>	<b>10,288</b>	<b>16.7</b>	<b>570</b>	<b>0.9</b>
Nurse	<30	2,294	1,839	80.2	438	19.1	17	0.7
	30-100	9,778	8,242	84.3	1,477	15.1	59	0.6
	>100	16,536	14,257	86.2	2,187	13.2	92	0.6
	<b>Total</b>	<b>28,608</b>	<b>24,338</b>	<b>85.1</b>	<b>4,102</b>	<b>14.3</b>	<b>168</b>	<b>0.6</b>

Smear taker group	Annual volume of smears	Total number of smears	Satisfactory smears		Satisfactory but limited smears		Unsatisfactory Smears	
			Number	%	Number	%	Number	%
Specialist	<30	126	91	72.2	32	25.4	3	2.4
	30-100	686	526	76.7	147	21.4	13	1.9
	>100	7,239	5,941	82.1	1,195	16.5	103	1.4
	Total	8,051	6,558	81.5	1,374	17.1	119	1.5
Midwife	<30	91	62	68.1	28	30.8	1	1.1
	30-100	103	81	78.6	21	20.4	1	1.0
	>100	193	175	90.7	18	9.3	0	0.0
	Total	387	318	82.2	67	17.3	2	0.5
Total		98,758	82,068	83.1	15,831	16.0	859	0.9

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

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

### ***Definition***

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

### ***Target***

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

### ***Calculation***

The first satisfactory smear from women reported as indicating the presence of HSIL or invasive squamous carcinoma in the six month period 1 October to 31 March 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 October 2002 to 30 September 2003 were compared. When more than one histology result was present, the most severe abnormality was chosen. The number of women with histological confirmation of an HSIL or more serious lesion was expressed as a proportion of all women with an HSIL or invasive carcinoma cytology report and subsequent histology. This measures the positive predictive value (PPV) of a HSIL cytology report.

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

### ***Results***

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

During this period, there were 1,818 HSIL or invasive carcinoma cytology reports, of which, 1,647 (90.6%) had a subsequent histology recorded on the NCSP Register. Of the 1,647 with confirmed histology, 1,230 (74.7%) of these were confirmed as having HSIL or more serious abnormality on histology. This positive predictive value (PPV) is within the target range of 65 to 85%.

One laboratory (PathLab Waikato) reported a PPV of a high grade or invasive cytology report outside this target range of 54.2%. This same laboratory has a PPV of 57.1% in Report 11 and 61.8% in Report 9. Two other laboratories which fell outside the target range in Report 11 (Valley Diagnostic Laboratories: 56.3% and Canterbury Health Laboratories: 61.4%) each were within the target range in this quarter (66.1% and 76.6% respectively).

For all laboratories combined, no histology results were recorded on the NCSP Register for 171 (9.4%) of HSIL or invasive carcinoma cytology reports. This proportion varied amongst the laboratories, ranging from 2.6% for SCL Christchurch to 16.1% for Canterbury Health Laboratories. Other laboratories with high proportions of HSIL reports with no subsequent histology were Auckland Hospital Laboratory (11.1%), MedLab Central (12.1%), MedLab Taranaki (13.2%) and PathLab Waikato (14.3%).

Reasons for these apparent omissions are described in Section 6.1 and could include i) women who have moved overseas and had follow-up there, ii) women who did not have an indication for biopsy at colposcopic examination, iii) women who opted to not allow their histology results to be recorded on the NCSP Register or iv) histology results which were not forwarded or not recorded on the NCSP Register.

### ***Recommendations***

None. As Pathlab Waikato is no longer reporting cytology, no action is required.

**Table 10: Cytology reports predicting HSIL\* by laboratory**

Laboratory	HSIL reports with a follow up histology report		HSIL confirmed by histology		HSIL reports without a follow up histology report	
	n	%	n	% ***	n	%
Auckland Hospital Laboratory	184	88.9	127	69.0	23	11.1
Canterbury Health Laboratories	47	83.9	36	76.6	9	16.1
Diagnostic MedLab Auckland	334	90.8	257	77.0	34	9.2
MedLab Bay of Plenty	111	91.7	76	68.5	10	8.3
MedLab Central	153	87.9	108	70.6	21	12.1
MedLab Christchurch	126	95.5	93	73.8	6	4.6
MedLab Hamilton	79	91.9	63	79.8	7	8.1
MedLab Taranaki	66	86.8	46	69.7	10	13.2
MedLab Wellington	95	90.5	75	79.0	10	9.5
PathLab Waikato	48	85.7	26	54.2	8	14.3
SCL ** Christchurch	75	97.4	57	76.0	2	2.6
SCL** Dunedin	270	91.5	227	84.1	25	8.5
Valley Diagnostic Laboratory	59	90.8	39	66.1	6	9.2
<b>Total</b>	<b>1,647</b>	<b>90.6</b>	<b>1,230</b>	<b>74.7</b>	<b>171</b>	<b>9.4</b>

\* HSIL: High grade lesion or invasive carcinoma cytology

\*\* SCL: Southern Community Laboratory

\*\*\* Positive predictive value: proportion of HSIL reports confirmed on histology. Target: 65 to 85%

## **6.8 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 for the latter scenario.

### ***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. The reason for this is that following a woman's first ever smear, a further smear in one year is recommended.

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.

The calculation of the proportion of women who were re-screened in less than the recommended 33 month period is as follows.

1. Women who had an abnormal smear during the 33 month period were excluded.

2. The number of women who had two or more smears was expressed as a proportion of the number of women who had at least one smear.

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. 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 between laboratories (see Section 6.5).

### ***Results***

The estimated level of short interval re-screening for 20-69 year old women by 5-year age groups is shown in Table 11. The overall level of short interval re-screening for 20-69 year old women was 18.9% when both satisfactory and satisfactory but limited smears were included. This was similar to that estimated (20.5%) in last quarter when this indicator was reported (Report 10, covering data from January to March 2003). When only satisfactory smears were included, the estimated level of short interval re-screening was 9.5% which was slightly lower than the figure from Report 10 (12.1%) and is within the 10% target.

There was little variation by age in the proportion of women who were re-screened within a short interval, and at no age was the target of less than 10% met. When only satisfactory smears were included, the level of short interval re-screening was similar across all age groups, but did not meet the 10% target for women aged 40 to 54 years.

Table 12 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, ranging from 11.0% in Southland to 25.3% in Waitemata and Auckland. These latter two DHBs were identified in Report 10 as having the highest levels of short interval re-screening (27.7% for Auckland and 27.6% for Waitemata). In the current report, levels of short interval re-screening above 20% were also observed for Bay of Plenty (20.2%), Capital and Coast (23.2%), Counties Manakau (21.6%) and

Wairarapa (20.1%). Three of these DHBs (Bay of Plenty, Capital Coast and Counties Manakau) also reported levels over 20% in Report 10.

When satisfactory smears only were included, the estimated level of short interval re-screening for each DHB area ranged from 4.2% for Nelson to 13.8% for Auckland. Using this method of calculation (which actually underestimates the level of short interval re-screening because of the inclusion of the types of satisfactory but limited smears with the recommended three year recall), the following DHBs were over the 10% target: Northland (11.5%), Waitemata (13.6%), Auckland (13.8%) and Hutt Valley (10.7%).

Table 13 shows the estimated level of short interval re-screening by ethnicity. Overall the level of short interval re-screening was similar amongst the three groups: Māori (16.4%), Pacific (18.8%) and non-Māori/ non-Pacific women (19.1%). When only satisfactory smears were included the level of short interval re-screening was less than the 10% target for all three ethnic groups: Māori (6.2%), Pacific (6.8%) and non-Māori/ non-Pacific (9.9%) women. Although these differences are small, they represent statistically significant differences ( $P < 0.001$ ).

### ***Recommendations***

#### ***Data Issues***

1. Provide trends over time to investigate patterns of short interval re-screening.

#### ***Service Issues***

1. Examine the trends of short interval re-screening and if there continues to be a trend in particular regions, consider initiatives to provide screening interval education.

**Table 11: Proportion of women re-screened within a short interval by age group**

Age Group	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months			Proportion with short interval re-screening*	Proportion with short interval re-screening**
			At least one smear	More than one smear*	More than one smear**		
20 to 24	26,393	4,092	22,301	4,542	1,716	20.4%	7.7%
25 to 29	44,315	4,254	40,061	7,333	2,862	18.3%	7.1%
30 to 34	56,655	3,651	53,004	10,623	5,042	20.0%	9.5%
35 to 39	61,928	3,071	58,857	11,273	5,813	19.2%	9.9%
40 to 44	65,489	2,773	62,716	12,153	6,462	19.4%	10.3%
45 to 49	54,870	2,244	52,626	10,353	5,549	19.7%	10.5%
50 to 54	44,792	1,444	43,348	8,531	4,700	19.7%	10.8%
55 to 59	37,182	858	36,324	6,684	3,515	18.4%	9.7%
60 to 64	28,087	516	27,571	4,499	2,415	16.3%	8.8%
65 to 69	21,114	295	20,819	2,986	1,529	14.3%	7.3%
Total	440,825	23,198	417,627	78,977	39,603	18.9%	9.5%

Target: short interval re-screening of <10%

All numbers in this table are based on women with a normal smear history

\* Based on satisfactory and satisfactory but limited smears

\*\* Based on satisfactory smears only

**Table 12: Proportion of women re-screened within a short interval by District Health Board of residence**

DHB	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months			Proportion with short interval re-screening*	Proportion with short interval re-screening**
			At least one smear	More than one smear*	More than one smear**		
Northland	15,363	719	14,644	2,723	1,684	18.6%	11.5%
Waitemata	48,034	1,875	46,159	11,696	6,268	25.3%	13.6%
Auckland	42,619	1,849	40,770	10,318	5,615	25.3%	13.8%
Counties Manukau	38,432	1,487	36,945	7,996	3,664	21.6%	9.9%
Waikato	34,734	2,356	32,378	4,670	1,544	14.4%	4.8%
Lakes	11,798	1,235	10,563	2,034	855	19.3%	8.1%
Bay of Plenty	20,932	2,435	18,497	3,739	1,199	20.2%	6.5%
Tairāwhiti	4,819	308	4,511	761	304	16.9%	6.7%
Taranaki	13,017	830	12,187	1,827	579	15.0%	4.8%
Hawkes Bay	15,622	643	14,979	2,232	1,351	14.9%	9.0%
Mid Central	16,364	931	15,433	2,354	1,191	15.3%	7.7%
Whanganui	6,375	359	6,016	945	470	15.7%	7.8%
Capital and Coast	34,754	2,121	32,633	7,568	3,200	23.2%	9.8%
Hutt Valley	16,599	670	15,929	3,052	1,708	19.2%	10.7%
Wairarapa	4,121	217	3,904	786	371	20.1%	9.5%
Nelson	15,875	879	14,996	2,148	625	14.3%	4.2%
West Coast	3,386	132	3,254	387	220	11.9%	6.8%

DHB	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months			Proportion with short interval re-screening*	Proportion with short interval re-screening**
			At least one smear	More than one smear*	More than one smear**		
Canterbury	54,250	2,446	51,804	8,528	5,131	16.5%	9.9%
South Canterbury	6,331	253	6,078	929	532	15.3%	8.8%
Otago	22,630	750	21,880	2,509	2,025	11.5%	9.3%
Southland	12,334	524	11,810	1,298	840	11.0%	7.1%
Unspecified	2,436	179	2,257	477	227	21.1%	10.1%
Total	440,825	23,198	417,627	78,977	39,603	18.9%	9.5%

All numbers in this table are based on women with a normal smear history

\* Based on satisfactory and satisfactory but limited smears

\*\* Based on satisfactory smears only

**Table 13: Proportion of women re-screened within a short interval by ethnicity**

Ethnicity	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months			Proportion with short interval re-screening*	Proportion with short interval re-screening**
			At least one smear	More than one smear*	More than one smear**		
Māori	36,111	3,066	33,045	5,408	2,043	16.4%	6.2%
Pacific	13,403	647	12,756	2,401	865	18.8%	6.8%
Non-Māori / non-Pacific	391,311	19,485	371,826	71,168	36,695	19.1%	9.9%
Total	440,825	23,198	417,627	78,977	39,603	18.9%	9.5%

## **6.9 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. 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 codes as shown in Appendix 1).

### ***Target***

The targets for re-screening for women with HSIL or more serious abnormality are 85% for a smear within the 15 months and 99% within the 18 months since the woman was signed into the programme (i.e. following completed treatment for a high grade lesion).

### ***Calculation***

Participating women 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' following assessment and treatment prior to 1 July 2002 were included. 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 July 2002.

## ***Results***

The results of the delayed re-screening analyses are shown in Table 14. In total, 29,958 women who had had a previous high grade smear and had been signed into the programme following the completion of assessment and treatment were included in these analyses. Among women of all ethnicities, 70.7% had another smear within 15 months. This is considerably lower than the target of 85%, but very similar to the proportion estimated in the report the last time that this indicator was reported (71.1%, Report 10). A further 5.7% of women had a smear in the next three months, bringing the total proportion of women whose most recent smear was within 18 months to 76.4%, a value identical to that reported in Report 10, but considerably lower than the recommended 99%. There were large differences by ethnicity, with considerably fewer Māori and Pacific women having a smear in the recommended time periods, compared to non-Māori/ non-Pacific women.

A total of 1,828 women had no smear recorded following completion of treatment before 1 July 2002. Higher proportions of both Māori and Pacific women (12.0% and 12.8%, respectively) had no smear recorded compared with non-Māori/ non-Pacific women (4.9%). This pattern, with almost identical numbers proportions, was also reported in Report 10.

## ***Recommendations***

### ***Data Issues***

1. The target needs to be reviewed to see if the current parameters are appropriate.
2. Clarification is required as to what is included in the value of “n” in the numbers of re-screening.
3. There may need to be more investigation on actual numbers for delayed re-screening, followed by looking at the inequality numbers.

**Table 14: Timeliness of the most recent smear among women with a previous high grade smear or more serious abnormality**

Ethnicity		<15 months		15 to 18 months		Within 18 months		> 18 months		No smear	
		n	%	n	%	n	%	n	%	n	%
Māori	(n=4,419)	2,386	54.0%	252	5.7%	2,638	59.7%	1,249	28.3%	532	12.0%
Pacific	(n=604)	329	54.5%	30	5.0%	359	59.4%	168	27.8%	77	12.8%
Non-Māori / non-Pacific	(n=24,935)	18,464	74.1%	1,422	5.7%	19,886	79.8%	3,830	15.4%	1,219	4.9%
Total	(n=29,958)	21,179	70.7%	1,704	5.7%	22,883	76.4%	5,247	17.5%	1,828	6.1%

Target: 85% within 15 months and 99% within 18 months

## **7. Appendix 1: Summary of Bethesda Coding System (1991)**

The hierarchy of broad cytological categories is:

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