

Quarterly Monitoring Report 4

***National Cervical Screening
Programme***

July – September 2001

***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)

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The Independent Monitoring Group received data from the National Cervical Screening Programme Register for this report on 5 November 2001. This quarterly report was sent to the Ministry of Health on 21 March 2002.

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

CONTENTS

1.0	Executive Summary	1
2.0	Recommendations.....	3
2.1	Data Issues	3
2.2	Service Issues.....	3
3.0	Methods	6
4.0	Results.....	8
4.1	Enrolment of women.....	8
4.2	Participation	14
4.3	Coverage	20
4.4	Women enrolled on the register but not currently participating	27
4.5	Re-participation rate.....	31
4.6	Short interval re-screening.....	35
4.7	Delayed re-screening for women with a high grade abnormality	39
4.8	Follow-up of women with HSIL cytology	41
4.9	Cervical cancer incidence and stage of invasive cervical cancer.....	46
4.10	Cervical cancer mortality	47
4.11	Cytology abnormality reporting.....	48
4.12	Histology abnormality reporting.....	49
4.13	Interval cancer.....	50
4.14	Programme sensitivity	51
4.15	Opt off rate.....	52
4.16	Laboratory smear reporting.....	56
4.17	Laboratory cytology turn around time	60
4.18	Satisfactory but limited and unsatisfactory smears by laboratory	62
4.19	Cytology reports predicting HSIL (positive predictive value).....	65
4.20	Accuracy of negative cytology reports	66
4.21	Waiting time for colposcopic assessment for HSIL or ASCUS possible high grade	67
4.22	Waiting time for colposcopic assessment for LSIL	70
4.23	Residual high grade disease after treatment.....	73
4.24	Satisfactory but limited and unsatisfactory smears by smear taker	74
APPENDIX 1	77
APPENDIX 2	85
APPENDIX 3	88

TABLES

Table 1. The proportion (%) of women aged 20-69 years enrolled by 5-year age group in each NCSP region [no targets].	11
Table 2. The proportion (%) of women aged 20-69 years by 5-year age group enrolled in each DHB area [no targets].	12
Table 3. The proportion (%) of women aged 20-69 years by 5-year age group enrolled for each specified ethnic group [no targets].	13
Table 4. The proportion (%) of 20-69 year old women participating in the NCSP by 5-year age group for each NCSP region [targets = 80% unadjusted and 90% adjusted].	17
Table 5. The proportion (%) of women aged 20-69 years by 5-year age group participating in each DHB area [targets = 80% unadjusted and 90% adjusted].	18
Table 6. The proportion (%) of women aged 20-69 years by 5-year age group participating for each specified ethnic group [targets = 80% unadjusted and 90% adjusted].	19
Table 7. The proportion (%) of 20-69 year-old women screened in the previous 36 months by 5-year age group for each NCSP region [targets = 80% unadjusted and 85% adjusted].	23
Table 8. The proportion (%) of women aged 20-69 years screened in the previous 36 months by 5-year age group for each DHB area [targets = 80% unadjusted and 85% adjusted].	24
Table 9. The proportion (%) of women aged 20-69 years screened in the previous 36 months by 5-year age group for each specified ethnic group [targets = 80% unadjusted and 85% adjusted].	25
Table 10. The proportion (%) of 20-69 year old women screened in the previous 36 months by ethnicity for each DHB area [targets = 80% unadjusted and 85% adjusted].	26
Table 11. The non-participation rate (%) among women aged 25-69 years for each NCSP region [no targets].	29
Table 12. The non-participation rate (%) among women aged 25-69 years for each specified ethnic group [no targets].	30
Table 13. The re-participation rate (%) for 20-69 year old women by 5-year age group for each NCSP region [no targets].	33
Table 14. The re-participation rate (%) for 20-69 year old women by 5-year age groups for each specified ethnic group [no targets].	34
Table 15. Short interval re-screening proportion (%) for 20-69 year old women by 5-year age group [target = less than 10%].	37
Table 16. Short-interval re-screening proportion (%) for 20-69 year old women for each DHB area [target = less than 10%].	38
Table 17. Timeliness of the most recent smear among women with a history of a high grade or more serious abnormality [targets = 85% within 15 months and 99% within 18 months].	40
Table 18. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old women [targets = 90% within 12 weeks and 99% within 52 weeks].	43

Table 19. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old Maori women [targets = 90% within 12 weeks and 99% within 52 weeks].....	43
Table 20. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old ‘Other’ women [targets = 90% within 12 weeks and 99% within 52 weeks].....	44
Table 21. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old Pacific women [targets = 90% within 12 weeks and 99% within 52 weeks].....	44
Table 22. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old women by NCSP region [targets = 90% within 12 weeks and 99% within 52 weeks].....	45
Table 23. A summary of laboratory indicators reported quarterly.	54
Table 24. The number and proportion of satisfactory or satisfactory but limited smears in broad cytological categories for each laboratory.....	58
Table 25. Timeliness of smear reporting by laboratories [targets = 90% within 7 working days and 100% within 14 working days].	61
Table 26. The number and proportion of satisfactory but limited and unsatisfactory smears reported by laboratory.	64
Table 27. Waiting time for colposcopic assessment for HSIL or ASCUS possible high grade by DHB colposcopy services.....	69
Table 28. Waiting time for colposcopic assessment of LSIL or ASCUS by DHB colposcopy services.	72
Table 29. The number and proportion (%) of satisfactory but limited and unsatisfactory smears in the quarter by annual volume of smears taken for each smear taker group.	76
Table 30. The projected number of women aged 20-69 years by 5-year age group for each NCSP region.	77
Table 31. The projected number of women aged 20-69 years by 5-year age group for each NCSP region adjusted for hysterectomy prevalence.	78
Table 32. The projected number of women aged 20-69 years by 5-year age group for each DHB.....	79
Table 33. The projected number of women aged 20-69 years by 5-year age group for each DHB adjusted for hysterectomy prevalence.....	81
Table 34. The projected number of women aged 20-69 years by 5-year age group for each ethnic group.	83
Table 35. The projected number of women aged 20-69 years by 5-year age group for each ethnic group adjusted for hysterectomy prevalence.	83
Table 36. The projected number of women aged 20-69 years by ethnicity group for each DHB area.	84
Table 37. Registrations of malignant neoplasm of cervix uteri, 1990-1997 by Region (Numbers, and Standardised Registration Ratios).	85

1.0 Executive Summary

The Independent Monitoring Group of the National Cervical Screening Programme (IMG-NCSP) was established in 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) to improve the quality of the NCSP. This is a quarterly report for the period July-September 2001.

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. To calculate the indicators, anonymous data for women enrolled on the NCSP-Register provided by the NSU were used.

At 30 September 2001, 1,000,487 women aged 20-69 years were enrolled on the NCSP-Register. This was 81.5% of the unadjusted estimated target population (1,227,545) and 92.7% of the hysterectomy-adjusted population (1,079,157). Since the first quarterly monitoring report for the October-December 2000 period, the number of 20-69 year old women enrolled has increased by 20,688, and the proportion of women enrolled has increased by 0.9% for the unadjusted target population and 1.2% for the hysterectomy-adjusted population. This increase in the number of women enrolled may be due to new enrolments, but also other reasons such as duplicate enrolments, especially since the calculated proportion of women enrolled is greater than 100% in some NCSP regions and DHB areas. Because the extent of this problem is unknown, participation and coverage are better indicators of the performance of the NCSP.

940,135 women had a smear recorded on the NCSP-Register during the 6-year period to 30 September 2001. This was 76.6% of the unadjusted 20-69 year old population and 87.1% of the hysterectomy-adjusted population. Since the first reporting quarter, the participation rate for both the unadjusted and hysterectomy-adjusted 20-69 year old populations remained almost unchanged (76.6% unadjusted and 87.0% hysterectomy-adjusted).

Population coverage, the proportion of women aged 20-69 years who had a smear recorded on the NCSP-Register within the last 3 years, was 63.9% for the unadjusted population and 72.7% for the hysterectomy-adjusted population. These results are the same as those observed for the last reporting quarter and slightly less than those reported for the first reporting quarter, October-December 2000, (64.4% and 73.1%, respectively).

Enrolment, participation and coverage continued to be lower amongst Maori and Pacific women compared with 'Other' women.

Short interval re-screening, a measure of resource utilisation amongst women with a normal smear history, was estimated to be 25.1%. This continued to be much higher than the target of 10%. Because some normal smears classified as satisfactory but limited generate a repeat smear after one year, these smear result recommendations contribute to the high level of short interval re-screening. When satisfactory but limited smears were excluded, short interval re-screening was estimated to be 16.8%.

27,087 women with a history of HSIL or more serious abnormality who had completed their treatment by 1 July 2000 were enrolled on the NCSP-Register. While more than three-quarters (76.6%) of these women had had a smear within the 15 months prior to 30 September 2001, this was less than the 85% target.

For the 4,467 women who had a high grade or more serious cytology reported between 1 October 1999 and 30 September 2000, 77.4% had a histology result recorded on the NCSP-Register within 12 weeks of having their smear. There was no histology result recorded for 32 of these women.

With respect to laboratory reporting rates, all three hospital-based laboratories and three of twelve community-based laboratories reported more than 10% of smears they processed as abnormal. The proportions of smears reported as ASCUS by two community-based laboratories were noticeably higher than for the other community-based laboratories.

The timeliness of cytology reporting by laboratories has markedly improved since the first quarterly report. While the 7-day target has yet to be reached by three laboratories, all laboratories either achieved or were very close to achieving the 14-day target.

Four laboratories reported less than 0.5% of smears they processed during the quarter as unsatisfactory for reading.

2.0 Recommendations

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

2.1 Data Issues

1. The enrolment indicator is no longer reported quarterly, but annually.
2. Efforts to minimise the number of enrolled women with more than one National Health Index number need to continue.
3. Efforts to minimise the number of women for whom screening is no longer recommended but who are regarded as actively participating in screening on the NCSP-Register need to continue.
4. The participation indicator is no longer reported quarterly, but annually.
5. The coverage indicator is no longer reported quarterly, but annually.
6. The non-participation indicator is no longer reported quarterly, but annually.
7. The re-participation rate is no longer calculated quarterly, but annually.
8. Efforts to collect data required to calculate both waiting time for colposcopic assessment indicators from colposcopy clinics should continue.

2.2 Service Issues

1. Efforts to increase enrolments of women need to continue particularly in those areas with lower proportions of women enrolled (the West Coast and Wairarapa), and amongst women aged 50-69 years.
2. Efforts to increase enrolments of Maori and Pacific women in all 5-year age groups need to continue.
3. Efforts to increase the participation of Maori and Pacific women in all 5-year age groups need to continue.
4. Efforts to increase the participation of women need to continue, particularly in those areas where lower proportions of women were participating on the NCSP-Register, (the West Coast, Canterbury and the Wairarapa), and amongst women aged 45-69 years.

5. Efforts to improve coverage in all age groups, particularly the 45-69 year age group, in all areas need to continue.
6. Efforts to improve coverage amongst all ethnic groups, particularly amongst Maori and Pacific women need to continue.
7. The reasons why coverage is low, particularly amongst Maori and Pacific women, need further investigation.
8. Reasons for non-participation, particularly amongst Maori and Pacific women need to be assessed.
9. Efforts to reduce the non-participation rate in all regions need to continue.
10. Efforts to encourage re-participation need to continue in all NCSP regions, particularly for Pacific women.
11. Reasons for the relatively high level of short interval re-screening need to be examined, particularly in those areas with higher levels of short interval re-screening (Auckland, North West Auckland and Tairāwhiti).
12. Efforts to reduce the high level of short interval re-screening in all 5-year age-groups, particularly the 20-54 year age groups, need to continue including efforts to educate smear takers and women about the nationally recommended intervals for screening.
13. Reasons why 369 women with a history of a high grade abnormality have no follow up smear results recorded on the NCSP-Register need to be examined and follow-up arrangements for these women checked.
14. Efforts to encourage women with a history of a high grade or more serious abnormality to have annual smears should continue.
15. Reasons why women with a history of a high grade or more serious abnormality that have not had recommended annual smears should be assessed.
16. Reasons why no histology result was recorded on the NCSP-Register for 32 women who had a cytology report of high grade or more serious abnormality need to be assessed and follow-up arrangements for these women checked.
17. Reasons why an histology report was not received and recorded by the NCSP-Register within 12 weeks of a high grade or more serious cytology report for about one-quarter of women, particularly Maori and Pacific women, need to be examined.
18. An explanation for the relatively high level of ASCUS reporting should be sought from Medlab Bay of Plenty and Pathlab Waikato.
19. An investigation of the outcome for women with ASCUS cytology results is needed.
20. Medical Laboratory Wellington, Medlab Bay of Plenty and Valley Diagnostic Laboratory should continue to work towards achieving the 7-day target.

21. Reasons for laboratories reporting levels of unsatisfactory smears outside the target range should be sought, particularly those laboratories reporting levels below the target range.
22. Reasons for the wide variation and high level of reporting, of satisfactory but limited smears should be examined.
23. Efforts to reduce the number of women with HSIL cytology waiting more than 4 weeks for colposcopic assessment should continue.
24. Reasons why women with LSIL cytology waited for more than 26 weeks for a colposcopic assessment should be sought from Health Waikato, Healthcare Hawkes Bay and South Auckland Health.
25. Efforts to reduce the number of women with LSIL cytology waiting more than 26 weeks for colposcopic assessment should continue.
26. Reasons for the variation in the proportion of satisfactory but limited smears between smear taker groups and amongst smear taker subgroups defined by volume of smears taken in the previous 12 months need to be examined.

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. When more information is available, indicator targets may be changed. Also, new indicators may be developed. Some national indicators are reported quarterly and others are only included in 6-monthly or annual reports.

This report includes indicators that are calculated quarterly. Each indicator and how it is calculated is described in the results section under the separate headings that identify the specific indicators. Indicators that will be calculated 6-monthly or annually are listed and defined.

To calculate the indicators for this report, anonymous data for women enrolled on the NCSP-Register provided by the NSU were used. Smear results for some women whose smears were processed at Wellington Medical Laboratory and Valley Diagnostic Laboratory were missing. All smear results were forwarded to the NCSP Wellington regional site by these laboratories, but about 30% were not recorded on the NCSP-Register before the data download for this report.¹ This was due to temporary understaffing at the NCSP Wellington regional site.

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 this report women recorded on the NCSP-Register as not being either Maori or Pacific were grouped together as 'Other'. This group included those women for whom their ethnic group was unknown.²

Unless otherwise stated, women's ages at the end of the reporting quarter were used when calculating the indicators.

Each woman was allocated to the NCSP region and District Health Board (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 region to which they were allocated had boundaries identical to a DHB area, then they were allocated to that DHB area, otherwise their DHB area was unspecified.

For the calculation of many indicators, the number of 20-69 year old women usually resident in New Zealand was required. Because the actual 2001 population was not

¹ Personal communication Sandie Matcahm, NCSP-Register Co-ordinator.

² It was estimated that ethnicity was not recorded for about 10% of women enrolled on the NCSP-Register (personal communication Sandie Matcham, NCSP-Register Co-ordinator).

available, the projected mid-year population for the year 2001 was used. The NSU of the MoH provided these population projection data. Statistics New Zealand calculated these projections in November 1999 for the MoH. They were based on the 1996 census population data, the post census enumerator survey, and births, deaths and immigration data. It was expected, for the purposes of this report, that using the projected 2001 mid-year population was more likely to produce results, which reflected the current situation than, if the 1996 census data was used. Nevertheless, some results in this report may be slightly inaccurate, but any such errors are likely to be small.

Because most women who have had a hysterectomy have not had cervical dysplasia or neoplasia, they no longer require smears.³ Therefore, it is desirable to adjust the number of women in the population to allow for the prevalence of hysterectomy when calculating the estimated target population for NCSP. The MoH has previously calculated hysterectomy prevalence for 20-69 year old New Zealand women by 5-year age groups. While it is likely that there are regional and ethnic differences in hysterectomy prevalence, no allowance has been made for this, because the level of detail required was not available. In addition, no adjustment has been made for women with an abnormal smear history who have had a hysterectomy and continue to have smears as recommended.⁴

The projected mid-year 2001 population data for 20-69 year old women by 5-year age group for New Zealand overall, each NCSP region, each DHB area and for Maori, Pacific and 'Other' ethnic groups were calculated and are shown in Appendix 1. The hysterectomy-adjusted population data are also shown in Appendix 1.

³ Cervical Screening. Guidelines for the Management of Women with Abnormal Cervical Smears. National Cervical Screening Programme. 1999.

⁴ *ibid*

4.0 Results

This reporting quarter ended on 30 September 2001 and national indicators reported quarterly are included. 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 are presented for both NCSP regions and 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 Enrolment of women

Definition

Enrolled women were women aged 20-69 years, at the end of the quarter, 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 indicated to the programme that 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.

Calculation

The number of enrolled women on the NCSP-Register at the end of the reporting quarter was calculated using the date of birth and current registration status of women. Enrolment was expressed both as a proportion of the projected unadjusted and the hysterectomy-adjusted populations.

Results

Overall, there continued to be a high level of enrolment particularly when the population was adjusted for the prevalence of hysterectomy. 1,000,487 women aged 20-69 years were enrolled at 30 September 2001. This was 81.5% of the unadjusted target population and 92.7% of the hysterectomy-adjusted population. Since the first quarterly monitoring report for the October-December 2000 period, the number of 20-69 year old women enrolled has increased by 20,688, and the proportion enrolled has increased from 80.6% for the unadjusted target population and from 91.5% for the hysterectomy-adjusted population.

Table 1 shows the proportion of 20-69 year old women enrolled by 5-year age group for each NCSP region. Overall, these results were similar to those in the previous three reports. The proportion of all 20-69 year old women enrolled in each NCSP region ranged from 71.7% in the West Coast to 88.2% in Wellington, and from 82.3% to 99.7%, respectively, when adjusted for hysterectomy. Compared to Report 1, the proportion of

20-69 year old women enrolled has decreased in Northland by 0.6%, remained unchanged in Manawatu/Wanganui, Nelson/Marlborough and Tairāwhiti, and increased slightly in the other NCSP regions.

Table 2 shows the proportion of 20-69 year old women enrolled by 5-year age group for each DHB area. For 9,783 women, the DHB areas where they reside were unspecified on the NCSP-Register.⁵ Enrolment amongst the DHB areas ranged from 71.7% for the West Coast to 90.0% for Capital Coast, and from 82.3% to 101.1%, respectively, when adjusted for hysterectomy.

The proportion of women enrolled in each 5-year age group continued to vary. The overall patterns were similar to those observed in the previous three reports. The 25-44 year old age groups continued to have the highest proportions of women enrolled. For this reporting quarter, enrolment was 85% or more amongst these age groups in most NCSP regions and DHB areas. The most noticeable exception was the West Coast. Enrolment for all 20-24 year old women was 70.6%. Amongst the NCSP regions and DHB areas enrolment for 20-24 year old women ranged from 60.7% in both the West Coast and Wairarapa to 85.5% for the Lakes. Enrolment declined with increasing age from 80.3% for all 45-49 year old women to 53.6% for the 65-69 year old age group. This pattern was also observed for each of the NCSP regions and DHB areas.

Table 3 shows the proportion of 20-69 year old women enrolled by 5-year age group for Maori, 'Other' and Pacific women. Overall, enrolment continued to be higher for 'Other' women. The proportions of 20-69 year old women enrolled for Maori, 'Other' and Pacific women were 66.9%, 84.3% and 73.3%, respectively, for the unadjusted populations and 73.5%, 96.6% and 80.5%, respectively for the hysterectomy-adjusted populations. Compared with Report 2, these proportions were all higher by 1% or more.⁶ As was observed for each NCSP region and DHB area, enrolment was relatively higher amongst the 25-44 year age groups and declined from the 45-49 year age group to the 65-69 year age group for each ethnic group. Enrolment was about 60% or less amongst Maori and Pacific women aged 50-69 years.

Tables 1, 2 and 3 show that the estimated proportion of women enrolled continued to be greater than 100% for some 5-year age groups. When these data were adjusted for hysterectomy, estimated enrolment was much more likely to exceed 100% (data not shown). This was particularly noticeable for 'Other' women aged 25-49 years. There are several possible reasons for this and they have been explained in the enrolment section of the previous three reports. Also, because ethnicity was not recorded on the NCSP-Register for about 10% of enrolled women⁷ (and these women were classified as 'Other'), this may have contributed to an over-enumeration of enrolment for 'Other' women and an under-enumeration of enrolment for Maori and Pacific women.

⁵ See Methods section.

⁶ Enrolment for ethnic groups was not presented in Report 1.

⁷ Personal communication Sandie Matcham, NCSP-Register Co-ordinator.

RECOMMENDATIONS

Data Issues

1. The enrolment indicator is no longer reported quarterly, but annually.

The following recommendations were previously stated in Report 1, Section 4.1 and are still applicable.

2. Efforts to minimise the number of enrolled women with more than one National Health Index number need to continue.
3. Efforts to minimise the number of women for whom screening is no longer recommended but who are regarded as actively participating in screening on the NCSP-Register need to continue.

Service Issues

The following recommendations were previously stated in Report 1, Section 4.1 and Report 2, Section 4.1, and are still applicable.

1. Efforts to increase enrolments of women need to continue particularly in those areas with lower proportions of women enrolled (the West Coast and Wairarapa), and amongst women aged 50-69 years.
2. Efforts to increase enrolments of Maori and Pacific women in all 5-year age groups need to continue.

Table 1. The proportion (%) of women aged 20-69 years enrolled by 5-year age group in each NCSP region [no targets].

NCSP region	Age group (years)											
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69	
											Unadj.	Hyst adj.
Auckland	66.3	94.2	101.3	95.8	89.7	81.0	72.2	65.6	58.8	50.6	82.2	92.9
Bay of Plenty	82.5	102.2	101.6	96.4	91.8	82.8	71.1	64.7	59.3	54.1	83.4	95.9
Canterbury	72.9	91.7	97.3	94.3	86.6	76.5	68.4	60.5	54.5	48.1	78.5	89.6
Hawkes Bay	67.5	92.2	92.0	88.8	83.4	75.0	65.9	63.5	59.3	52.8	76.2	87.7
Manawatu/ Wanganui	68.6	89.3	94.2	90.5	87.3	77.4	69.0	62.9	60.6	56.4	78.1	89.0
Nelson/ Marlborough	71.5	92.5	92.4	92.1	88.3	78.9	71.8	64.6	58.7	56.5	79.3	91.3
Northland	69.1	91.0	91.7	90.3	86.1	79.3	71.2	64.7	59.9	56.6	78.0	90.1
Otago	74.1	90.5	94.4	91.3	86.6	79.9	71.3	68.5	62.0	58.8	79.8	90.7
Southland	66.3	97.2	94.8	89.8	89.1	78.5	71.9	67.8	66.2	57.1	80.6	91.8
Tairāwhiti	82.5	97.2	98.1	94.2	85.0	79.8	73.2	67.8	60.2	55.5	82.3	94.0
Taranaki	74.8	103.2	96.6	93.6	88.7	84.5	75.9	73.2	70.2	64.6	84.5	96.9
Waikato	70.2	93.1	97.3	93.5	89.0	81.8	71.8	66.2	60.8	55.6	81.0	92.1
Wellington	74.4	105.4	109.1	101.0	94.4	84.4	76.1	70.0	65.7	56.2	88.2	99.7
West Coast	60.7	75.8	81.1	83.6	80.8	74.0	66.4	59.1	60.3	51.3	71.7	82.3
Total	70.6	95.1	99.4	94.7	89.0	80.3	71.5	65.4	60.0	53.6	81.5	92.7

Table 2. The proportion (%) of women aged 20-69 years by 5-year age group enrolled in each DHB area [no targets].

District Health Board area	Age group (years)											Total 20-69	
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Unadj.	Hyst adj.	
	Auckland	61.5	99.6	104.1	96.7	88.3	81.5	74.0	66.7	60.2			49.3
Bay of Plenty	78.2	100.2	99.7	94.8	91.5	82.1	69.0	64.7	58.8	54.3	81.4	94.1	
Canterbury	71.3	89.9	96.2	94.1	85.7	75.9	67.5	59.8	53.4	47.3	77.7	88.5	
Capital Coast	74.2	107.8	110.2	101.7	96.3	86.2	78.0	70.2	66.2	57.4	90.0	101.1	
Hawkes Bay	67.5	92.2	92.0	88.8	83.4	75.0	65.9	63.5	59.3	52.8	76.2	87.7	
Hutt	72.0	95.1	103.3	97.7	91.1	82.5	71.8	69.8	66.1	56.1	84.2	95.6	
Lakes	85.5	101.3	100.5	96.3	90.2	81.8	72.8	62.9	59.1	52.2	84.2	95.9	
Manawatu	66.8	84.8	91.9	88.7	86.0	76.0	68.2	61.9	60.1	57.4	76.5	87.0	
Nelson/ Marlborough	71.5	92.5	92.4	92.1	88.3	78.9	71.8	64.6	58.7	56.5	79.3	91.3	
North West Auckland	64.2	85.9	96.6	92.0	88.0	78.9	70.2	64.6	58.4	51.6	78.8	89.6	
Northland	69.1	91.0	91.7	90.3	86.1	79.3	71.2	64.7	59.9	56.6	78.0	90.1	
Otago	74.1	90.5	94.4	91.3	86.6	79.9	71.3	68.5	62.0	58.8	79.8	90.7	
South Auckland	70.0	92.1	99.0	95.6	90.1	79.9	70.2	63.2	56.0	49.0	81.1	91.7	
South Canterbury	69.5	91.6	94.5	88.3	87.9	77.1	71.0	62.9	59.4	51.3	76.9	89.4	
Southland	66.3	97.2	94.8	89.8	89.1	78.5	71.9	67.8	66.2	57.1	80.6	91.8	
Tairāwhiti	82.5	97.2	98.1	94.2	85.0	79.8	73.2	67.8	60.2	55.5	82.3	94.0	
Taranaki	74.8	103.2	96.6	93.6	88.7	84.5	75.9	73.2	70.2	64.6	84.5	96.9	
Waikato	70.2	93.1	97.3	93.5	89.0	81.8	71.8	66.2	60.8	55.6	81.0	92.1	
Wairarapa	60.7	90.4	93.8	88.9	81.0	70.1	70.4	61.4	55.2	46.8	73.4	85.2	
West Coast	60.7	75.8	81.1	83.6	80.8	74.0	66.4	59.1	60.3	51.3	71.7	82.3	
Whanganui	61.8	87.4	90.6	88.5	85.3	76.5	67.9	61.6	60.0	52.8	75.5	86.5	
Total	70.6	95.1	99.4	94.7	89.0	80.3	71.5	65.4	60.0	53.6	81.5	92.7	
Number unspecified†	1,472	1,885	1,695	1,335	979	797	645	479	312	184	9,783		

† See Methods section.

Table 3. The proportion (%) of women aged 20-69 years by 5-year age group enrolled for each specified ethnic group [no targets].

Ethnic Group	Age group (years)											
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69	
											Unadj.	Hyst adj.
Maori	59.0	77.2	80.9	75.7	69.9	61.6	52.3	49.1	44.8	42.4	66.9	73.5
‘Other’	76.2	100.4	103.5	98.3	92.3	83.2	73.9	67.4	61.7	54.8	84.3	96.6
Pacific	47.1	82.2	94.1	90.7	82.2	69.5	60.9	54.5	51.9	41.9	73.3	80.5
Total	70.6	95.1	99.4	94.7	89.0	80.3	71.5	65.4	60.0	53.6	81.5	92.7

4.2 Participation

Definition

Participation is the proportion of women who have had a smear recorded on the NCSP-Register within the 6 years prior to the end of the reporting period. Women who were recorded on the NCSP-Register as living overseas, being too ill to continue being screened or having indicated to the programme that 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 screening because they had had a hysterectomy for a benign reason were also excluded.

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.

Calculation

The number of enrolled women aged 20-69 years at the end of the quarter with a smear recorded on the NCSP-Register in the 6 years to 30 September 2001 was calculated. This was expressed both as a proportion of the projected unadjusted and hysterectomy-adjusted populations.

Results

Overall, participation rates for all 20-69 year old women continued to be below the current targets for both the unadjusted and adjusted populations. 940,135 women had a smear recorded on the NCSP-Register during the 6-year period to 30 September 2001. This was 76.6% of the unadjusted 20-69 year old population and 87.1% of the hysterectomy-adjusted population (Table 4). Compared with the previous three reporting quarters, the participation rates for both the unadjusted and adjusted 20-69 year old populations have remained almost unchanged.

Table 4 shows the proportion of 20-69 year old women participating in the NCSP-Register by 5-year age groups for each NCSP region. The participation rates ranged from 68.1% in the West Coast to 83.0% in Wellington, and from 78.2% to 93.9%, respectively, when adjusted for hysterectomy. Table 5 shows the proportion of 20-69 year old women participating in the NCSP-Register by 5-year age groups for each DHB area. For 8,316 participating women, the DHB areas where they resided were unspecified.⁸ Amongst the DHB areas, participation rates for the unadjusted total 20-69 year old population ranged from 68.1% in the West Coast to 84.6% in Capital Coast, and from 78.2% to 95.2%, respectively, when adjusted for hysterectomy.

As observed in all previous reports, the target for the unadjusted total 20-69 year old population was not reached in any of the NCSP or DHB regions. When the 20-69 year old population was adjusted for hysterectomy prevalence, the 90% target was reached in some NCSP regions and DHB areas - Bay of Plenty (90.4%), Capital Coast (95.2%), Hutt (90.1%), Tairāwhiti (90.8%), Taranaki (93.0%) and Wellington (93.9%).

⁸ See Methods section.

The proportion of women participating in each 5-year age group continued to vary. Overall, participation rates were still highest, 80% or more, for the 25-44 year old age groups. For the 45-69 year age group, participation rates declined from 75.3% for the 45-49 year age group to 50.5% for the 65-69 year age group. While a relatively low proportion of 20-24 year old women (69.6%) had a smear recorded on the NCSP-Register within the previous 6 years, there was little difference between this proportion and the proportion of 20-24 year old women enrolled (70.6%). These overall patterns continued to be observed in each of the NCSP regions and DHB areas.

Amongst the NCSP regions, the lowest participation rates were observed in the West Coast for women aged 20-59 years and Canterbury for women aged 60-69 years. The highest 5-year age group participation rates were observed in Tairāwhiti for women aged 20-24 years, Wellington for women aged 25-44 years and Taranaki for women aged 45-69 years. Amongst the DHB areas, the lowest 5-year age group participation rates were observed in the Wairarapa (20-24 years and 45-49 years), the West Coast (25-44 years and 50-59 years) and Canterbury (60-69 years), and the highest participation rates were observed for Lakes (20-24 years), Capital Coast (25-54 years) and Taranaki (55-69 years).

Table 6 shows the proportion of 20-69 year old women participating in the NCSP by 5-year age groups for each specified ethnic group. Participation was lower amongst women who identified as Maori and Pacific. For 20-69 year old women the unadjusted participation rates were 60.5%, 79.9% and 63.6% for Maori, 'Other' and Pacific women, respectively. When adjusted for hysterectomy prevalence, participation rates were 66.6%, 91.6% and 69.8% for Maori, 'Other' and Pacific women, respectively. For each of the three ethnic groups, participation continued to be higher amongst women aged 25-44 years, compared with women aged 45 years and over. The lowest participation rates were observed amongst women aged 65-69 years in all three ethnic groups. These rates were 38.1%, 51.9% and 35.1% for Maori, 'Other' and Pacific women, respectively.

The calculated participation rates were greater than 100% for women aged 30-34 years in the Wellington NCSP region (Table 4) and women aged 25-34 years in the Capital Coast DHB area (Table 5). This also occurred when hysterectomy-adjusted participation rates were calculated for the 25-44 year age groups for the Capital Coast DHB area (data not shown). Possible reasons for these rates being greater than 100% are the same as those explained in the enrolment section of previous reports.

RECOMMENDATIONS

Data Issues

1. The participation indicator is no longer reported quarterly, but annually.
2. See Section 4.1, Recommendations 1 and 2.

Service Issues

The following recommendations were previously stated in Report 1, Section 4.2 and Report 2, Section 4.2, and are still applicable.

1. Efforts to increase the participation of Maori and Pacific women in all 5-year age groups need to continue.
2. Efforts to increase the participation of women need to continue, particularly in those areas where lower proportions of women were participating on the NCSP-Register, (the West Coast, Canterbury and the Wairarapa), and amongst women aged 45-69 years.

Table 4. The proportion (%) of 20-69 year old women participating in the NCSP by 5-year age group for each NCSP region [targets = 80% unadjusted and 90% adjusted].

NCSP region	Age group (years)											
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69	
											Unadj.	Hyst adj.
Auckland	65.3	87.9	92.9	87.9	82.6	74.8	66.7	60.6	54.3	46.4	76.3	86.1
Bay of Plenty	81.1	95.7	94.7	90.2	86.0	78.1	67.1	61.2	56.2	51.2	78.6	90.4
Canterbury	72.0	86.3	91.4	89.5	81.9	72.5	64.9	57.4	51.5	45.1	74.5	85.0
Hawkes Bay	66.4	87.0	86.8	84.6	79.3	71.9	63.1	61.4	56.9	50.9	72.8	83.8
Manawatu/ Wanganui	67.7	83.1	87.7	84.2	81.8	72.5	65.1	59.3	57.8	53.2	73.5	83.8
Nelson/ Marlborough	70.6	86.8	86.5	86.9	83.9	75.1	68.4	61.7	56.7	54.3	75.3	86.8
Northland	67.5	83.6	84.1	82.7	78.5	73.0	66.8	60.3	56.3	53.0	72.2	83.5
Otago	73.7	84.1	88.2	87.0	83.0	76.5	68.9	66.5	59.7	57.0	76.4	86.9
Southland	65.5	91.5	89.0	85.2	84.4	74.4	68.2	63.9	62.4	54.3	76.5	87.1
Tairāwhiti	81.7	93.4	93.0	90.6	82.0	77.3	70.4	65.5	58.7	54.8	79.5	90.8
Taranaki	74.0	98.0	91.6	89.5	84.8	80.7	73.4	70.5	67.9	63.0	81.1	93.0
Waikato	69.0	86.3	89.6	86.8	83.2	76.6	67.6	62.2	57.8	52.8	75.9	86.4
Wellington	73.6	99.5	101.0	94.4	88.0	79.3	71.6	65.8	61.8	53.4	83.0	93.9
West Coast	60.1	71.8	77.6	80.4	75.5	69.9	62.8	55.8	56.7	47.8	68.1	78.2
Total	69.6	89.1	92.1	88.3	83.2	75.3	67.2	61.5	56.6	50.5	76.6	87.1

Table 5. The proportion (%) of women aged 20-69 years by 5-year age group participating in each DHB area [targets = 80% unadjusted and 90% adjusted].

District Health Board area	Age group (years)											Total 20-69	
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Unadj.	Hyst adj.	
	Auckland	60.6	92.9	95.0	88.2	81.1	75.1	68.4	61.7	55.1			45.0
Bay of Plenty	76.9	93.9	93.6	89.4	86.4	77.8	65.6	61.6	56.0	51.7	77.2	89.2	
Canterbury	70.5	85.0	90.7	89.5	81.2	72.1	64.2	56.8	50.7	44.3	74.0	84.2	
Capital Coast	73.6	101.9	101.8	94.8	89.7	81.1	73.4	65.9	61.7	54.4	84.6	95.2	
Hawkes Bay	66.4	87.0	86.8	84.6	79.3	71.9	63.1	61.4	56.9	50.9	72.8	83.8	
Hutt	71.0	89.8	95.9	92.2	85.2	77.1	67.4	65.5	62.9	53.3	79.4	90.1	
Lakes	83.8	94.9	93.2	89.4	83.8	76.6	68.1	58.9	55.5	49.1	78.9	89.9	
Manawatu	66.1	79.8	86.4	83.3	80.8	71.9	64.9	59.1	57.6	54.7	72.6	82.6	
Nelson/ Marlborough	70.6	86.8	86.5	86.9	83.9	75.1	68.4	61.7	56.7	54.3	75.3	86.8	
North West Auckland	63.4	80.3	89.8	86.0	82.1	73.7	65.4	59.9	54.6	48.1	73.8	84.0	
Northland	67.5	83.6	84.1	82.7	78.5	73.0	66.8	60.3	56.3	53.0	72.2	83.5	
Otago	73.7	84.1	88.2	87.0	83.0	76.5	68.9	66.5	59.7	57.0	76.4	86.9	
South Auckland	68.8	85.9	90.2	86.8	82.3	73.2	64.2	58.0	51.1	44.4	74.7	84.5	
South Canterbury	68.4	86.4	88.9	84.2	83.4	72.8	67.3	59.7	55.3	48.9	73.0	84.8	
Southland	65.5	91.5	89.0	85.2	84.4	74.4	68.2	63.9	62.4	54.3	76.5	87.1	
Tairāwhiti	81.7	93.4	93.0	90.6	82.0	77.3	70.4	65.5	58.7	54.8	79.5	90.8	
Taranaki	74.0	98.0	91.6	89.5	84.8	80.7	73.4	70.5	67.9	63.0	81.1	93.0	
Waikato	69.0	86.3	89.6	86.8	83.2	76.6	67.6	62.2	57.8	52.8	75.9	86.4	
Wairarapa	59.3	83.6	89.0	83.6	75.9	67.2	66.5	58.2	53.1	45.3	69.6	80.7	
West Coast	60.1	71.8	77.6	80.4	75.5	69.9	62.8	55.8	56.7	47.8	68.1	78.2	
Whanganui	60.8	81.1	83.4	82.0	80.1	71.0	63.2	57.1	56.8	49.2	70.6	80.9	
Total	69.6	89.1	92.1	88.3	83.2	75.3	67.2	61.5	56.6	50.5	76.6	87.1	
Number unspecified†	1430	1630	1383	1056	801	635	546	419	269	147	8316		

† See Methods section.

Table 6. The proportion (%) of women aged 20-69 years by 5-year age group participating for each specified ethnic group [targets = 80% unadjusted and 90% adjusted].

Ethnic Group	Age group (years)											
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69	
											Unadj.	Hyst adj.
Maori	57.5	70.7	72.2	67.1	61.6	54.7	46.7	43.5	40.0	38.1	60.5	66.6
'Other'	75.3	94.5	97.0	92.9	87.3	78.8	70.0	63.8	58.5	51.9	79.9	91.6
Pacific	46.1	75.0	80.6	75.9	68.7	57.0	51.4	45.4	44.7	35.1	63.6	69.8
Total	69.6	89.1	92.1	88.3	83.2	75.3	67.2	61.5	56.6	50.5	76.6	87.1

4.3 Coverage

Definition

Coverage is the proportion of 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.⁹

Targets

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

Calculation

The number of enrolled women with a smear recorded on the NCSP-Register within the 3 years prior to, and aged 20-69 at, the end of the quarter was calculated. This was expressed both as a proportion of the projected unadjusted and hysterectomy-adjusted populations.

Results

Coverage for the total 20-69 year old population was 63.9% for the unadjusted population and 72.7% for the hysterectomy-adjusted population (Table 7). These results are the same as those observed for the last reporting quarter, similar to those for the second reporting quarter and slightly less than those reported for the first reporting quarter, October-December 2000 (64.4% and 73.1%, unadjusted and hysterectomy-adjusted, respectively). For this report and the previous three reports, the recommended targets of 80% for the unadjusted population and 85% for the hysterectomy-adjusted population were not reached.

Table 7 shows the proportion of 20-69 year old women screened in the previous 36 months by 5-year age groups for each NCSP region. These results were similar to those for the previous reporting quarters. For the total 20-69 year old age group the targets were not reached in any of the NCSP regions. Amongst the regions, coverage for the 20-69 year old population was highest in Taranaki (70.7% unadjusted and 81.1% when adjusted for hysterectomy prevalence) and lowest in the West Coast (56.6% unadjusted and 65.0% when adjusted for hysterectomy prevalence).

Table 8 shows the proportion of 20-69 year-old women screened in the previous 36 months by 5-year age groups for each DHB area. For the total 20-69 year old age group, the targets for both the unadjusted and hysterectomy-adjusted populations were also not reached in any of the DHB areas. Amongst these areas, coverage for the total 20-69 year old population was highest in Capital Coast and Taranaki and lowest in the West Coast.

As was observed for each of the previous reporting quarters, for each NCSP region and each DHB area, there was a difference of about 8% or more between coverage for the unadjusted and hysterectomy-adjusted 20-69 year old populations. However, there is only a 5% difference between the unadjusted and hysterectomy-adjusted targets.

⁹ Coleman D, Day N, Douglas G, Farmery E, Lyng E, Philip J, Segnan N. European Guidelines For Quality Assurance in Cervical Cancer Screening. Europe Against Cancer Programme. *Europ J Cancer*. 1993; 29A,S4: S1-S30.

Amongst the 5-year age groups, higher levels of coverage continued to be observed for the 25-39 year old age groups. For the total 25-39 year old age groups, coverage was more than 70%. Amongst the NCSP regions and DHB areas this level was not reached in all the 25-39 year age groups.. This was most apparent for Northland, the West Coast and Whanganui.

For the total 20-24 year age group coverage was 60.3%, which was slightly lower than that reported for the first reporting quarter (60.6%). Amongst the NCSP regions coverage for the 20-24 year old women ranged from 52.6% in the West Coast to 70.2% in Tairāwhiti (Table 7), and amongst the DHB areas it ranged from 50.9% in the Wairarapa to 70.6% in the Lakes area (Table 8).

As observed in all previous three reports, coverage declined with increasing age from the 45-49 year old age group to the 65-69 year old age group. This was observed for the total 20-69 year old population, and in each of the NCSP regions and DHB areas. A similar pattern was also observed for enrolment and participation. For the 65-69 year old age group, coverage continued to be less than 50% for the total population, and in all NCSP regions and DHB areas except Taranaki (56.1%). Particularly low coverage for the 65-69 year age group was observed in Auckland (36.7%), Canterbury (37.5%) South Auckland (36.4%) and Wairarapa (38.7%) DHB areas.

Table 9 shows the proportion of 20-69 year-old women screened in the previous 36 months by 5-year age groups for each specified ethnic group. There was very little change compared with the previous three reports. For all 20-69 year old women coverage amongst Maori and Pacific women continued to be about 20% less than for 'Other' women for the unadjusted population, and about 25% less for the adjusted population. The unadjusted coverage was 46.2%, 67.8% and 45.1% for Maori, 'Other' and Pacific 20-69 year old women, respectively. When adjusted for hysterectomy prevalence, coverage for each of these three groups was 50.8%, 77.7% and 49.5%, respectively.

For each of the three ethnic groups, coverage was relatively higher amongst 25-39 year old women and it was the lowest for 65-69 year old women. For Maori and Pacific women coverage was less than 50% for women aged 40-69 years. The lowest coverage was observed for 65-69 year old Pacific women, for whom it was 25.3%.

Table 10 shows the proportion of 20-69 year old women screened in the previous 36 months by ethnic group for each DHB for the unadjusted population. For all DHB areas, except South Canterbury, coverage for 'Other' women was higher than that for both Maori and Pacific women. For South Canterbury coverage was highest for Pacific women. The relatively small number of Pacific women living in South Canterbury compared with other DHB areas and the other ethnic groups in South Canterbury (Table 36) may have influenced this result. Coverage for each of the three ethnic groups varied considerably amongst DHB areas. For 'Other' women coverage ranged from 58.8% in the West Coast DHB area to 76.7% in the Capital Coast DHB area. For Maori women coverage ranged from 33.1% in the South Canterbury DHB area to 65.2% in the Tairāwhiti DHB area. For Pacific women coverage ranged from 23.6% in the West Coast DHB area to 68.6% in the South Canterbury DHB area.

Because ethnicity was not recorded on the NCSP-Register for about 10% of enrolled women¹⁰ (and these women were classified as ‘Other’), this may have contributed to an under-enumeration of coverage for both Maori and Pacific women.

Possible reasons for the observed coverage being less than the targets are explained in the section on coverage in the previous three reports.

RECOMMENDATIONS

Data Issues

1. The coverage indicator is no longer reported quarterly, but annually.
2. See Section 4.1, Recommendations 1 and 2.

Service Issues

The following recommendations were previously stated in Report 1, Section 4.3 and Report 2, Section 4.3, and are still applicable.

1. Efforts to improve coverage in all age groups, particularly the 45-69 year age group, in all areas need to continue.
2. Efforts to improve coverage amongst all ethnic groups, particularly amongst Maori and Pacific women need to continue.
3. The reasons why coverage is low, particularly amongst Maori and Pacific women, need further investigation.

¹⁰ Personal communication Sandie Matcham, NCSP-Register Co-ordinator.

Table 7. The proportion (%) of 20-69 year-old women screened in the previous 36 months by 5-year age group for each NCSP region [targets = 80% unadjusted and 85% adjusted].

NCSP Region	Age group (years)											
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69	
											Unadj.	Hyst adj.
Auckland	55.8	68.1	73.1	69.8	66.9	61.6	55.6	50.6	45.3	38.2	61.7	69.7
Bay of Plenty	68.1	77.2	77.3	75.1	72.7	66.8	58.5	53.7	50.2	44.3	66.3	76.2
Canterbury	63.6	69.6	77.0	76.1	70.1	62.7	56.6	49.7	44.5	38.1	63.5	72.5
Hawkes Bay	56.3	70.9	71.6	71.6	67.2	62.0	54.9	54.1	50.1	44.8	61.9	71.2
Manawatu/Wanganui	58.4	65.2	71.7	69.7	68.2	61.6	56.1	51.2	50.3	46.0	61.5	70.1
Nelson/Marlborough	60.7	70.5	72.8	75.6	72.5	66.0	60.5	54.8	50.3	46.3	65.0	74.8
Northland	55.2	65.5	68.4	68.0	65.5	61.6	57.7	52.3	48.2	44.3	60.0	69.4
Otago	66.6	66.5	77.0	75.6	73.0	68.3	62.0	60.2	53.3	49.7	66.9	76.0
Southland	58.0	74.8	74.3	72.1	71.6	63.7	58.3	55.4	53.4	45.8	64.9	73.9
Tairāwhiti	70.2	79.0	80.1	78.7	73.3	68.7	63.3	57.8	52.1	49.4	69.6	79.5
Taranaki	64.0	82.7	78.3	78.0	74.1	70.9	65.4	62.6	61.0	56.1	70.7	81.1
Waikato	58.9	66.7	72.3	70.9	68.0	64.4	57.3	53.1	49.4	44.6	62.6	71.2
Wellington	65.4	79.7	82.9	78.3	73.9	67.3	61.1	56.4	52.5	45.1	69.6	78.6
West Coast	52.6	58.0	64.0	65.1	63.5	58.0	52.1	46.2	48.3	40.7	56.6	65.0
Total	60.3	70.5	75.0	72.8	69.5	63.8	57.6	52.9	48.7	42.8	63.9	72.7

Table 8. The proportion (%) of women aged 20-69 years screened in the previous 36 months by 5-year age group for each DHB area [targets = 80% unadjusted and 85% adjusted].

District Health Board area	Age group (years)											
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69	
											Unadj.	Hyst adj.
Auckland	52.4	71.9	74.2	69.5	65.4	61.9	57.0	51.2	46.3	36.7	62.4	69.9
Bay of Plenty	64.6	76.0	77.1	75.2	73.6	67.2	57.5	54.0	50.6	45.0	65.6	75.8
Canterbury	62.4	68.7	76.6	76.3	69.5	62.5	56.1	49.2	43.9	37.5	63.1	71.9
Capital Coast	66.2	81.6	83.9	79.4	76.2	69.9	63.1	56.9	53.1	45.7	71.4	80.3
Hawkes Bay	56.3	70.9	71.6	71.6	67.2	62.0	54.9	54.1	50.1	44.8	61.9	71.2
Hutt	62.0	72.3	78.3	75.5	70.6	63.9	57.0	55.3	52.8	45.3	65.9	74.8
Lakes	70.6	76.4	75.2	73.3	70.1	64.8	58.9	51.7	48.5	41.9	65.8	74.9
Manawatu	57.9	63.9	71.9	69.7	68.0	62.2	56.3	51.1	50.7	47.7	61.6	70.0
Nelson/ Marlborough	60.7	70.5	72.8	75.6	72.5	66.0	60.5	54.8	50.3	46.3	65.0	74.8
North West Auckland	54.5	63.7	72.4	70.1	67.7	61.7	55.0	50.6	46.0	40.0	60.8	69.2
Northland	55.2	65.5	68.4	68.0	65.5	61.6	57.7	52.3	48.2	44.3	60.0	69.4
Otago	66.6	66.5	77.0	75.6	73.0	68.3	62.0	60.2	53.3	49.7	66.9	76.0
South Auckland	58.0	66.0	70.2	68.2	66.1	59.4	53.3	48.4	42.2	36.4	59.9	67.8
South Canterbury	60.2	70.9	74.7	71.1	72.2	62.4	58.0	51.8	47.7	41.2	62.3	72.4
Southland	58.0	74.8	74.3	72.1	71.6	63.7	58.3	55.4	53.4	45.8	64.9	73.9
Tairāwhiti	70.2	79.0	80.1	78.7	73.3	68.7	63.3	57.8	52.1	49.4	69.6	79.5
Taranaki	64.0	82.7	78.3	78.0	74.1	70.9	65.4	62.6	61.0	56.1	70.7	81.1
Waikato	58.9	66.7	72.3	70.9	68.0	64.4	57.3	53.1	49.4	44.6	62.6	71.2
Wairarapa	50.9	67.7	75.4	69.3	62.5	55.8	56.4	49.9	44.0	38.7	58.2	67.5
West Coast	52.6	58.0	64.0	65.1	63.5	58.0	52.1	46.2	48.3	40.7	56.6	65.0
Whanganui	51.1	63.3	66.6	66.7	66.5	58.2	54.1	49.4	48.3	41.9	58.2	66.7
Total	60.3	70.5	75.0	72.8	69.5	63.8	57.6	52.9	48.7	42.8	63.9	72.7
Number unspecified†	1,143	998	884	644	505	444	384	304	187	105	5,598	

† See Methods section.

Table 9. The proportion (%) of women aged 20-69 years screened in the previous 36 months by 5-year age group for each specified ethnic group [targets = 80% unadjusted and 85% adjusted].

Ethnic Group	Age group (years)											Total 20-69	
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Unadj.	Hyst adj.	
	Maori	46.4	53.0	53.9	49.9	46.3	42.0	36.2	34.3	31.7	30.3	46.2	50.8
'Other'	66.5	76.2	80.7	78.2	74.2	67.7	60.6	55.3	50.7	44.3	67.8	77.7	
Pacific	36.8	52.2	54.3	52.6	47.2	41.2	38.3	32.8	33.4	25.3	45.1	49.5	
Total	60.3	70.5	75.0	72.8	69.5	63.8	57.6	52.9	48.7	42.8	63.9	72.7	

Table 10. The proportion (%) of 20-69 year old women screened in the previous 36 months by ethnicity for each DHB area [targets = 80% unadjusted and 85% adjusted].

District Health Board area	Ethnic Group			Age group (years) Total 20-69
	Maori	Other	Pacific	
Auckland	39.4	67.2	43.7	62.4
Bay of Plenty	46.5	71.6	44.5	65.6
Canterbury	34.6	65.3	43.5	63.1
Capital Coast	48.8	76.7	36.8	71.4
Hawkes Bay	48.5	66.0	48.6	61.9
Hutt	51.2	70.2	42.0	65.9
Lakes	50.6	73.5	43.8	65.8
Manawatu	47.1	64.2	44.4	61.6
Nelson/ Marlborough	36.7	67.4	45.2	65.0
North West Auckland	39.6	64.0	42.1	60.8
Northland	50.4	64.4	29.0	60.0
Otago	38.2	68.6	52.9	66.9
South Auckland	46.6	65.1	50.7	59.9
South Canterbury	33.1	63.8	68.6	62.3
Southland	35.4	68.0	47.3	64.9
Tairāwhiti	65.2	73.1	57.7	69.6
Taranaki	50.8	74.1	28.7	70.7
Waikato	45.4	67.1	43.8	62.6
Wairarapa	36.6	62.6	25.1	58.2
West Coast	35.0	58.8	23.6	56.6
Whanganui	48.5	61.1	44.5	58.2
Total	46.2	67.8	45.1	63.9
Number unspecified†	630	4,884	84	5,598

† See Methods section.

4.4 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.

Calculation

This was calculated as the difference between the number of 25-69 year old enrolled women (section 4.1) and the number of 25-69 year old women participating (section 4.2) expressed both as a proportion of the projected 25-69 year old unadjusted and hysterectomy-adjusted populations.

Women aged 20-24 years were excluded because many of these women would not have been enrolled for 6 years or more.

Results

Table 11 shows the proportion of 25-69 year old women not currently participating for each NCSP region. The proportion of all 25-69 year old women whose last smear was recorded on the NCSP-Register before 1 October 1995 was 5.4% for the unadjusted population and 6.2% for the hysterectomy-adjusted population. These proportions were higher than those reported in all three previous reports. The proportion of women not participating has increased slightly each quarter from 4.2% for the unadjusted population and 4.8% for the hysterectomy-adjusted population in the October-December 2000 quarter.

Amongst the NCSP regions, the lowest non-participation rates for all 25-69 year old women were again observed in Tairāwhiti (3.1% for the unadjusted population and 3.5% when adjusted for hysterectomy prevalence) and the highest non-participation rates were again observed in Auckland (6.5% for the unadjusted population and 7.5% when adjusted for hysterectomy prevalence). High non-participation rates were also observed for Northland (6.1% for the unadjusted population and 7.1% when adjusted for hysterectomy prevalence).

Overall, the non-participation rates were highest amongst the younger age groups (data not shown). The non-participation rates were 6.1% for the 25-29 year age group and 7.5% for the 30-34 year age group. Thereafter, the non-participation rates declined with increasing age to 3.1% for the 65-69 year old age group. This pattern was observed for most of the regions. Relatively high non-participation rates were observed for the 30-34 year age group in both Auckland (8.4%) and Wellington (8.1%).

Table 12 shows the proportion of 25-69 year old women not currently participating for the unadjusted and hysterectomy-adjusted populations for each specified ethnic group. Compared with 'Other' women, non-participation rates were higher for Māori women and more than twice as high for Pacific women. For the unadjusted 25-69 year old population, the non-participation rates for Māori, 'Other' and Pacific women were 7.2%, 4.8% and 11.4%, respectively. When adjusted for hysterectomy, non-participation rates

for 25-69 year old Maori, 'Other' and Pacific women were 8.1%, 5.6% and 12.7%, respectively. For each ethnic group, the non-participation rates have increased slightly each quarter. Between the January-March 2001 and July-September 2001 reporting quarters, the unadjusted non-participation rate increased by 1.0% for Maori women, 0.7% for 'Other' women and 2.1% for Pacific women.

Possible reasons why some women enrolled on the NCSP-Register are not participating are explained in the sections on non-participation in the previous three quarterly reports.

RECOMMENDATIONS

Data Issues

1. The non-participation indicator is no longer reported quarterly, but annually.
2. See Section 4.1, Recommendations 1 and 2.

Service Issues

The following recommendations were previously stated in Report 1, Section 4.4 and Report 2, Section 4.4, and are still applicable.

1. Reasons for non-participation, particularly amongst Maori and Pacific women need to be assessed.
2. Efforts to reduce the non-participation rate in all regions need to continue.

Table 11. The non-participation rate (%) among women aged 25-69 years for each NCSP region [no targets].

NCSP region	25-69 year old women (unadjusted)	25-69 year old women (hysterectomy-adjusted)
Auckland	6.5	7.5
Bay of Plenty	5.1	5.9
Canterbury	4.3	5.0
Hawkes Bay	3.6	4.2
Manawatu/ Wanganui	5.1	5.9
Nelson/ Marlborough	4.2	4.9
Northland	6.1	7.1
Otago	3.8	4.5
Southland	4.5	5.2
Tairāwhiti	3.1	3.5
Taranaki	3.7	4.3
Waikato	5.5	6.4
Wellington	5.7	6.6
West Coast	3.8	4.5
Total	5.4	6.2

Table 12. The non-participation rate (%) among women aged 25-69 years for each specified ethnic group [no targets].

Ethnic Group	25-69 year old women (unadjusted)	25-69 year old women (hysterectomy-adjusted)
Maori	7.2	8.1
'Other'	4.8	5.6
Pacific	11.4	12.7
Total	5.4	6.2

4.5 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 quarter. 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.

Calculation

The number of enrolled 20-69 year old women with no smears recorded on the NCSP Register in the 6 years prior to the beginning of the quarter (1 July 2001) was calculated. The number of these women who had a smear during the quarter was calculated and expressed as a proportion of all enrolled 20-69 year old women who had not had a smear result recorded on the NCSP-Register in the 6 years prior to the beginning of the quarter. This was tabulated by women's ages at the end of the quarter.

Results

Overall 1,756 enrolled 20-69 year old women, who had no smear result recorded on the NCSP-Register in the 6-years prior to 1 July 2001, had a smear result recorded on the NCSP-Register between 1 July and 30 September 2001. Table 13 shows the re-participation rate for 20-69 year old women by 5-year age groups for each NCSP region. For 20-69 year old women the re-participation rate was 3.2%, which was similar to that reported in the previous three reporting quarters. Amongst the regions, the re-participation rates for 20-69 year old women ranged from 2.3% in Otago to 5.3% in Taranaki.

Table 14 shows the re-participation rate for 20-69 year old women by 5-year age group for each specified ethnic group. The re-participation rate for 20-69 year old Pacific women continued to be lower than the rates for Maori and 'Other' women. The re-participation rates for 20-69 year old Maori, 'Other' and Pacific women were 3.3%, 3.3% and 2.1%, respectively.

RECOMMENDATIONS

Data Issue

1. The re-participation rate is no longer calculated quarterly, but annually.

Service Issues

The following recommendation was previously stated in Report 2, Section 4.5 is still applicable.

1. Efforts to encourage re-participation need to continue in all NCSP regions, particularly for Pacific women.

Table 13. The re-participation rate (%) for 20-69 year old women by 5-year age group for each NCSP region [no targets].

NCSP region	Age group (years)										
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69
Auckland	3.1	3.4	2.5	2.7	3.1	3.2	3.0	3.1	2.7	3.1	2.9
Bay of Plenty	6.7	5.3	3.0	2.9	4.7	3.1	2.4	3.3	4.0	2.1	3.6
Canterbury	1.7	5.2	4.0	4.5	3.1	5.8	4.3	3.8	3.6	3.2	4.2
Hawkes Bay	7.9	5.0	4.3	3.6	3.3	2.7	5.8	4.1	2.8	5.8	4.2
Manawatu/ Wanganui	0.0	1.8	3.4	3.1	1.8	3.7	2.7	1.1	1.4	0.8	2.4
Nelson/ Marlborough	0.0	4.3	5.9	2.9	4.5	4.6	3.6	3.2	0.0	1.9	4.0
Northland	6.1	3.4	2.9	3.4	2.1	5.5	3.2	3.2	8.7	4.3	3.7
Otago	0.0	2.5	1.9	3.4	1.8	3.0	0.8	1.3	3.6	1.8	2.3
Southland	0.0	4.4	2.9	4.6	4.3	3.5	0.9	4.5	1.2	1.9	3.4
Tairāwhiti†	0.0	1.9	2.5	1.7	5.2	0.0	5.6	4.2	0.0	0.0	2.7
Taranaki	0.0	3.4	4.9	6.2	5.8	6.9	6.1	4.3	2.0	9.7	5.3
Waikato	4.0	3.8	2.5	1.9	2.7	3.4	3.3	2.4	2.6	2.1	2.8
Wellington	1.0	3.3	3.1	2.6	2.5	1.5	2.4	2.4	1.8	1.7	2.6
West Coast‡	0.0	5.4	7.5	2.6	3.3	2.3	5.1	6.7	0.0	0.0	3.9
Total	3.0	3.7	3.0	3.0	3.1	3.5	3.1	3.0	2.9	2.8	3.2

† 10 women re-participated during the July-September 2001 quarter.

‡ 13 women re-participated during the July-September 2001 quarter.

Table 14. The re-participation rate (%) for 20-69 year old women by 5-year age groups for each specified ethnic group [no targets].

Ethnic Group	Age group (years)										
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Total 20-69
Maori	4.8	4.6	3.2	2.9	2.9	4.0	2.0	2.2	2.9	2.7	3.3
‘Other’	2.4	3.7	3.1	3.2	3.2	3.7	3.3	3.2	2.7	2.8	3.3
Pacific	0.0	2.2	1.9	2.0	2.6	1.1	2.8	2.4	5.1	1.9	2.1
Total	3.0	3.7	3.0	3.0	3.1	3.5	3.1	3.0	2.9	2.8	3.2

4.6 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.

Target

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

Calculation

The number of enrolled women with a normal smear history and two or more normal smears recorded on the NCSP-Register in the 33 months before the end of the quarter was calculated. This was expressed as a proportion of the number of enrolled women with a normal smear history who had had at least one normal smear in the same 33-month period. Women with a normal history were defined as those women who were classified as having a normal smear history at enrolment and all subsequent smear results on the NCSP-Register were normal. Women whose smears were classified as unsatisfactory during the 33-month period were excluded. Women who enrolled during the 33-month period were also excluded. This was done to exclude women who had a recommended repeat smear 12 months after beginning screening or who joined the programme more than 5 years since their last smear. Women with an ASCUS, LSIL, HSIL or more serious smear recorded during the 33-month period were also excluded as more frequent smears than 3-yearly are indicated in these instances.

For the calculation of short interval re-screening in report 1, women with ASCUS detected during the 33-month period were not excluded. In report 2, women enrolled in the 12 months before the 33-month period were excluded. Therefore, the short interval re-screening results presented in this report are not directly comparable with those shown in reports 1 and 2.

Each smear is classified as satisfactory, satisfactory but limited or unsatisfactory for laboratory reading. All smears coded as unsatisfactory generate a 3-month recall. 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.¹¹ 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 varies amongst laboratories (see section 4.18).

Results

Table 15 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 was 25.1% when both satisfactory and satisfactory but limited smears were included in the calculations and 16.8% when only satisfactory smears were included. Both of these results were considerably higher than the target of 10%.

¹¹ Revised Bethesda Coding Standard. Appendix 9. National Cervical Screening Programme Interim Operational Policy and Quality Standards. Health Funding Authority. October 2000.

Short-interval re-screening was again observed to be highest in the 25-29 and 30-34 year age groups, 27.2% and 27.9%, respectively, when satisfactory and satisfactory but limited smears were included. The level of short interval re-screening was only slightly lower in the 20-24 and 35-54 year age groups, and it was lowest for the 65-69 year age group (16.7%). Similar patterns were observed when only satisfactory smears were included in the analysis, but the calculated proportions were less for each 5-year age group.

Table 16 shows the estimated level of short interval re-screening for 20-69 year old women by DHB area. The level of short interval re-screening continued to vary amongst the DHB areas and it ranged from 18.6% (9.7% for satisfactory smears only) in Waikato to 32.4% (22.7% for satisfactory smears only) in Auckland. High levels of short interval re-screening were also observed for North West Auckland (32.0% for satisfactory and satisfactory but limited smears and 22.0% for satisfactory smears only) and Tairāwhiti (31.7% for satisfactory and satisfactory but limited smears and 21.3% for satisfactory smears only).

As mentioned in previous reports, it is likely that some women will have had smears more frequently than 3-yearly as part of the investigation of symptoms, but this is very unlikely to fully explain the continued high level of short interval re-screening observed. Three-yearly cervical screening is considered to reduce cervical cancer incidence by 91.4% compared with 93.4% if annual screening is done, while the costs are much higher.¹²

RECOMMENDATIONS

Service Issues

The following recommendations were previously stated in Report 2, Section 4.7 and are still applicable.

1. Reasons for the relatively high level of short interval re-screening need to be examined, particularly in those areas with higher levels of short interval re-screening (Auckland, North West Auckland and Tairāwhiti).
2. Efforts to reduce the high level of short interval re-screening in all 5-year age-groups, particularly the 20-54 year age groups, need to continue including efforts to educate smear takers and women about the nationally recommended intervals for screening.

¹² 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.

Table 15. Short interval re-screening proportion (%) for 20-69 year old women by 5-year age group [target = less than 10%].

Age groups (years)	Number of women with at least one A1† or A2‡ smear	Number of women with more than one A1† or A2‡ smear	Number of women with an abnormal smear (ASCUS or worse)	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	31,086	11,870	5,182	25.8	16.1
25-29	48,263	17,014	5,353	27.2	18.1
30-34	54,021	18,075	4,190	27.9	19.2
35-39	56,037	16,944	3,412	25.7	17.7
40-44	52,163	15,291	3,039	24.9	16.9
45-49	43,186	12,712	2,309	25.4	17.3
50-54	36,497	10,402	1,711	25.0	17.2
55-59	25,963	6,692	999	22.8	15.1
60-64	20,559	4,688	586	20.5	13.1
65-69	14,995	2,838	397	16.7	9.9
Total 20-69	382,770	11,6526	27,178	25.1	16.8

† A1 = satisfactory smear

‡ A2 = satisfactory but limited smear

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

Table 16. Short-interval re-screening proportion (%) for 20-69 year old women for each DHB area [target = less than 10%].

District Health Board area	Smear Adequacy	
	Satisfactory (A1) & satisfactory but limited (A2) smears	Satisfactory (A1) smears only
Auckland	32.4	22.7
Bay of Plenty	21.0	10.7
Canterbury	22.5	17.4
Capital Coast	28.6	17.0
Hawkes Bay	21.3	14.6
Hutt	23.6	16.3
Lakes	22.5	14.2
Manawatu	22.2	15.4
Nelson/Marlborough	20.9	10.6
North West Auckland	32.0	22.0
Northland	27.1	17.8
Otago	19.3	15.8
South Auckland	28.7	18.5
South Canterbury	23.5	17.9
Southland	20.0	16.9
Tairāwhiti	31.7	21.3
Taranaki	22.6	13.9
Waikato	18.6	9.7
Wairarapa	24.7	15.1
West Coast	23.0	15.7
Whanganui	19.5	15.9
DHB Unspecified	26.9	20.0
Total	25.1	16.8

4.7 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 CIN-not otherwise specified, HSIL, AIS or invasive carcinoma who have completed treatment and had a smear within specified time periods. For these women, where 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.¹³

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% for a smear within the last 18 months.

Calculation

The calculation of this indicator included only participating women with a previous smear or histology result recorded as CIN-not otherwise specified, HSIL, AIS or invasive carcinoma and had completed assessment and treatment prior to 1 July 2000. This date was chosen because it was 15 months before the end of the reporting quarter, allowing sufficient opportunity for a recommended annual follow up smear 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 women participating on the NCSP-Register who had had a cytology or histology report of CIN-not otherwise specified, HSIL, AIS or invasive carcinoma and had completed treatment before 1 July 2000.

Results

Table 17 shows the number and proportion of women with a history of HSIL or more serious abnormality, who had completed treatment and whose previous smear was less than 15 months ago, between 15 and 18 months ago and more than 18 months ago. 27,087 women with a history of HSIL or more serious abnormality had completed assessment and treatment before 1 July 2000. Of these 27,087 women, 76.6% had a smear within 15 months of the end of this reporting quarter. This was less than the target of 85%. For 16.8% of the 27,087 women, their last smear was more than 18 months before the end of the reporting quarter. This was much more than the target of 1%.

There was no record of a smear result on the NCSP-Register for 369 women with a history of HSIL or more serious abnormality. Some of these women may have moved to live overseas and the NCSP-Register did not have this information recorded. Sometimes there are clinical reasons for follow up smears not being taken. These explanations are unlikely to be the only ones.

¹³ Cervical Screening. Guidelines for the Management of Women with Abnormal Cervical Smears. National Cervical Screening Programme. 1999.

While the number of women with a history of HSIL or more serious abnormality has increased since the first reporting quarter (23,490), the proportion of women having follow-up smears within the recommended time intervals has not improved.

RECOMMENDATIONS

Service Issues

1. Reasons why 369 women with a history of a high grade abnormality have 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 previously stated in Report 1, Section 4.8 and are still applicable.

2. Efforts to encourage women with a history of a high grade or more serious abnormality to have annual smears should continue.
3. Reasons why women with a history of a high grade or more serious abnormality that have not had recommended annual smears should be assessed.

Table 17. Timeliness of the most recent smear among women with a history of a 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	20,739	76.6	76.6
15-18 months	1,441	5.3	81.9
More than 18 months	4,538	16.8	98.7
No smear recorded	369	1.4	100.0
Total	27,087		

4.8 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 report has been recorded by the NCSP-Register within specified time periods from the time the smear was taken. 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 report received by the NCSP-Register within 12 weeks of the smear being taken, and 99% for a histology report received by the NCSP-Register within 52 weeks of the smear being taken.

Calculation

The number of enrolled 20-69 year old women who had a smear result of HSIL or more serious abnormality recorded on the NCSP-Register between 1 October 1999 and 30 September 2000 was calculated. The time between the date of the smear and the date of the biopsy was calculated. The numbers of women with histology results recorded within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and more than 52 weeks after their high grade or more serious cytology result were expressed as proportions of the total number of women with an HSIL or more serious cytology result between 1 October 1999 and 30 September 2000. This indicator was calculated for women of all ethnic groups, and Maori, Pacific and 'Other' women separately.

Results

Table 18 shows the number and proportion of 20-69 year old women with HSIL cytology reported for the period 1 October 1999 to 30 September 2000 for whom a histology report was received by the NCSP-Register within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and after more than 52 weeks of the smear being taken. The number of women with an HSIL report for which there was no subsequent histology result recorded on the NCSP-Register is also shown. Between 1 October 1999 and 30 September 2000, 4,467 women had an HSIL cytology result recorded on the NCSP-Register. Over three-quarters (77.4%) of these women had a recorded histology report within 12 weeks of having their smear. This was similar to that reported in the previous three reports, but less than the target of 90%. More than 90% of the 4,467 women with HSIL cytology had a recorded histology report within 26 weeks of having their smear.

Of the 4,467 women who had an HSIL cytology report recorded on the NCSP-Register 98.4% had a histology result recorded within 52 weeks. This was slightly less than the 99% target and slightly less than that reported for the last quarter (99.3%).

Tables 19, 20 and 21 show the number and proportion of Maori, 'Other' and Pacific women with HSIL cytology reported during the period 1 October 1999 to 30 September 2000 for whom a histology report was recorded on the NCSP-Register within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and after more than 52 weeks of the smear being taken. 'Other' women had the highest proportion (80.0%) of women with HSIL cytology who had a histology result recorded within 12 weeks of having their

smear. About 13% fewer Maori women and about 17% fewer Pacific women compared with 'Other' women had a histology report recorded within 12 weeks of having their HSIL cytology. Differences in the timeliness of histology reports between the three ethnic groups persisted for the 13-26 week period, but they were less, and for the more than 52 weeks period there was very little difference.

Table 22 shows the number and proportion of 20-69 year old women in each NCSP region with HSIL cytology between 1 October 1999 and 30 September 2000 for whom a histology report was recorded on the NCSP-Register within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and after more than 52 weeks of the smear being taken. Amongst the NCSP regions the proportion of women with HSIL cytology who had a histology result recorded on the NCSP-Register within 12 weeks of having their smear ranged from 62.2% (Bay of Plenty) to 85.9% (Manawatu/Wanganui). While no NCSP region reached the 12-week target of 90%, four regions achieved the 52-week target of 99%. These four regions were Hawkes Bay (99.4%), Nelson/Marlborough (99.4%), Otago (99.3%) and Taranaki (99.4%).

For 32 women a histology result was not recorded on the NCSP-Register (Table 18). Of these women, nine were Maori women, twenty-two were 'Other' women and one was a Pacific woman. It is possible that some of these women may have had further investigations and treatment, but their histology reports were not received and recorded on the NCSP-Register. Some women may have moved to live in another country 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.

RECOMMENDATIONS

Service Issues

1. Reasons why no histology result was recorded on the NCSP-Register for 32 women who had a cytology report of high grade or more serious abnormality need to be assessed and follow-up arrangements for these women checked.

The following recommendations were previously stated in Report 2, Section 4.9 and are still applicable.

2. Reasons why an histology report was not received and recorded by the NCSP-Register within 12 weeks of a high grade or more serious cytology report for about one-quarter of women, particularly Maori and Pacific women, need to be examined.

Table 18. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old women [targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number (%)	Cumulative proportion (%)
Within 12 weeks	3,457 (77.4)	77.4
13-26 weeks	673 (15.1)	92.5
27-52 weeks	263 (5.9)	98.4
More than 52 weeks	42 (0.9)	99.3
Subtotal	4,435	
No histology recorded	32 (0.7)	100.0
Total	4,467	

Table 19. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old Maori women [targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number (%)	Cumulative proportion (%)
Within 12 weeks	475 (66.6)	66.6
13-26 weeks	154 (21.6)	88.2
27-52 weeks	66 (9.3)	97.5
More than 52 weeks	9 (1.3)	98.8
Subtotal	704	
No histology recorded	9 (1.3)	100.00
Total	713	

Table 20. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old ‘Other’ women
[targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number (%)	Cumulative proportion (%)
Within 12 weeks	2,912 (80.0)	80.0
13-26 weeks	496 (13.6)	93.6
27-52 weeks	182 (5.0)	98.6
More than 52 weeks	30 (0.8)	99.4
Subtotal	3,620	
No histology recorded	22 (0.6)	100.0
Total	3,642	

Table 21. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old Pacific women
[targets = 90% within 12 weeks and 99% within 52 weeks].

Time period	Number (%)	Cumulative proportion
Within 12 weeks	70 (62.5)	62.5
13-26 weeks	23 (20.5)	83.0
27-52 weeks	15 (13.4)	96.4
More than 52 weeks	3 (2.7)	99.1
Subtotal	111	
No histology recorded	1 (0.9)	100.0
Total	112	

Table 22. Timeliness of histology reports after an HSIL 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 period										
	Within 12 weeks		13-26 weeks		27-52 weeks		More than 52 weeks		No histology reported		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Auckland	1,020	79.4	164	12.8	83	6.5	11	0.9	7	0.5	1,285
Bay of Plenty	255	62.2	115	28.0	33	8.0	6	1.5	1	0.2	410
Canterbury	426	84.7	49	9.7	16	3.2	6	1.2	6	1.2	503
Hawkes Bay	130	77.4	19	11.3	18	10.7	1	0.6	0	0.0	168
Manawatu/ Wanganui	243	85.9	25	8.8	11	3.9	2	0.7	2	0.7	283
Nelson/ Marlborough	106	64.6	45	27.4	12	7.3	1	0.6	0	0.0	164
Northland	111	74.5	25	16.8	11	7.4	1	0.7	1	0.7	149
Otago	233	77.9	51	17.1	13	4.3	0	0.0	2	0.7	299
Southland	114	82.0	17	12.2	5	3.6	1	0.7	2	1.4	139
Tairāwhiti	63	73.3	15	17.4	4	4.7	1	1.2	3	3.5	86
Taranaki	124	79.5	24	15.4	7	4.5	1	0.6	0	0.0	156
Waikato	281	75.1	60	16.0	24	6.4	3	0.8	6	1.6	374
Wellington	333	77.6	63	14.7	24	5.6	7	1.6	2	0.5	429
West Coast	18	81.8	1	4.5	2	9.1	1	4.5	0	0.0	22
Total	3,457	77.4	673	15.1	263	5.9	42	0.9	32	0.7	4,467

4.9 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 cancer cases classified as FIGO stage I at diagnosis.

Results

This national indicator will be reported in the annual reports. However, the number of new registrations of all invasive cervical cancers and the standardisation registration ratios for different regions and for all New Zealand for the periods 1990-1993 and 1994-1997 have been included in Appendix 2. These calculations were done as part of a report prepared by the Ministry of Health and the New Zealand Health Funding Authority in 2000. It is important to note that the regional boundaries used in the analysis do not correspond to the NCSP-Register regional sites or DHB areas, and the most recent year for which the data was available was 1997.

Because there was wide variation in the regional populations and the total numbers of new registrations of invasive cervical cancer in some regions were relatively small, standardised registration ratios were used to compare the relative incidence of cervical cancer between regions with New Zealand overall.

For the latter 1994-1997 three-year period, compared with New Zealand overall, statistically significantly higher rates of invasive cervical cancer were observed in Northland, Eastern Bay of Plenty and Tairāwhiti. Statistically significant lower rates were observed in Wellington and Otago.

4.10 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.

Results

This will be provided in the annual report.

4.11 Cytology abnormality reporting

The Bethesda System is used by the NCSP to record the cytological result of each smear. Each smear can be assigned more than one Bethesda diagnosis code. Therefore, a hierarchy of the codes is used by the NCSP for the recommended follow-up and tabulation of the results. Similarly, for the purposes of this report the most serious diagnosis code for each smear according to the hierarchy of codes was used. The hierarchy of codes by broad cytological category, with increasing severity from (a) to (l) used for this report was:

- (a) negative for dysplasia or malignancy
- (b) abnormal but not otherwise specified
- (c) atypical squamous cells of undetermined significance (ASCUS), excluding ASCUS possible high grade
- (d) low grade squamous intraepithelial neoplasia (LSIL)
- (e) atypical glandular cells of undetermined significance (AGUS) favouring a reactive process
- (f) atypical glandular cells of undetermined significance (AGUS) favouring a dysplastic process
- (g) ASCUS possible high grade
- (h) high grade squamous intraepithelial neoplasia (HSIL)
- (i) adenocarcinoma-in-situ (AIS)
- (j) adenocarcinoma of the cervix,
- (k) cancer not otherwise specified
- (l) squamous carcinoma of the cervix

The Bethesda diagnosis codes assigned to each broad cytological category are shown in Appendix 3.

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.

Results

This will be provided in the annual report.

4.12 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 four 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, cervical 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.

Results

This will be provided in the annual report.

4.13 Interval cancer

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.

Result

This will be provided in the annual report.

4.14 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.

Result

This will be provided in the annual report.

4.15 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.

Result

This will be provided in the annual report.

Laboratory Indicators

Several NCSP national indicators focus on laboratory performance. These are laboratory smear reporting, cytology turn around time, satisfactory but limited and unsatisfactory smear reporting, accuracy of cytology reports predicting HSIL (positive predictive value) and accuracy of negative cytology reports. The latter two indicators are reported 6-monthly, whereas the other laboratory indicators are reported quarterly. Table 23 summarises the laboratory indicators by laboratory for this quarterly report. These indicators are discussed in detail in sections 4.16 - 4.18 that follow.

Table 23. A summary of laboratory indicators reported quarterly.

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%)		Total ASCUS* (including ASCUS possible HSIL)		HSIL* (target = not less than 0.6%)		Total abnormalities†** (target = not more than 10%)		Smear turn around time proportion (%)
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<i>Predominantly hospital clinic work</i>	Number	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Within 7 days
Auckland Hospital Laboratory‡	2,073	581	28.0	71	3.4	1,431	71.73	314	15.74	100	5.01	564	28.27	97.63
Canterbury Health Laboratories	1,413	259	18.3	19	1.3	1,149	83.75	83	6.05	43	3.13	223	16.25	100.00
Waikato Hospital Laboratory	157	28	17.8	1	0.6	123	79.87	19	12.34	4	2.60	31	20.13	100.00
Rest of table 23 continued on next page														

* Unsatisfactory smears excluded.

† Does not include inflammation or infection.

‡ Auckland Hospital Laboratory was previously known as National Women’s Hospital Laboratory.

Table 23 continued

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%)		Total ASCUS* (including ASCUS possible HSIL)		HSIL* (target = not less than 0.6%)		Total abnormalities†* (target = not more than 10%)		Smear turn around time proportion (%)
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<i>Predominantly community work</i>	Number	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Within 7 days
Diagnostic Medlab Auckland	31,294	6,956	22.2	219	0.7	29,539	95.27	608	1.96	208	0.67	1,468	4.73	99.19
Medical Laboratory Southland‡	1,154	136	11.8	5	0.4	1,055	92.46	37	3.24	12	1.05	86	7.54	100.00
Medical Laboratory Wellington#	9,034	2,046	22.6	160	1.8	7,995	90.26	484	5.46	75	0.85	863	9.74	78.72
Medlab Bay of Plenty	6,941	1,929	27.8	47	0.7	5,811	84.40	707	10.27	91	1.32	1,074	15.60	74.97
Medlab Central, Palmerston North	7,853	1,634	20.8	36	0.5	7,140	91.90	258	3.32	69	0.89	629	8.10	99.89
Medlab Hamilton	7,526	1,588	21.1	23	0.3	6,740	90.06	348	4.65	72	0.96	744	9.94	99.94
Medlab South Christchurch	9,528	1,345	14.1	35	0.4	8,749	92.63	319	3.38	78	0.83	696	7.37	100.00
Pathlab Waikato	2,845	896	31.5	21	0.7	2,297	81.74	348	12.38	54	1.92	513	18.26	99.85
SCL** Christchurch	5,069	481	9.5	16	0.3	4,783	95.28	75	1.49	52	1.04	237	4.72	99.92
SCL** Dunedin	9,652	648	6.7	92	1.0	9,007	94.98	89	0.94	122	1.29	476	5.02	99.85
Taranaki Medlab	4,478	855	19.1	91	2.0	3,896	89.07	238	5.44	58	1.33	478	10.93	98.25
Valley Diagnostic Laboratory#	3,240	566	17.5	80	2.5	2,987	94.68	58	1.84	22	0.70	168	5.32	75.84
Total	102,257	19,948	19.5	916	0.9	92,702	91.86	3,985	3.95	1,060	1.05	8,219	8.14	95.25

† Does not include inflammation or infection.

* Unsatisfactory smears excluded.

**SCL = Southern Community Laboratory.

‡ Medical Laboratory Southland ceased processing smears in August 2001 and data presented for this laboratory also includes some smears processed by Medlab South after August 2001.

The results of some smears processed at these laboratories during the quarter were not recorded on the NCSP-Register due to staffing issues at the Wellington NCSP regional site.

4.16 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.¹⁴

Definition

Laboratory smear reporting is measured by the number and proportion of satisfactory or satisfactory but limited smears in the specified broad cytological categories (negative for dysplasia or malignancy, total ASCUS, AGUS favour reaction, AGUS favour dysplasia, LSIL, ASCUS possible high grade, and HSIL) (see Section 4.11).

Targets

The targets for laboratory smear reporting are:

1. Negative for dysplasia or malignancy not more than 96%,
2. HSIL not less than 0.6%,
3. Total abnormalities not more than 10%.

Calculation

The Bethesda diagnosis codes, as recorded on the NCSP-Register, of smears taken during the 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 smears reported by each laboratory. As for the calculation of cytology abnormality reporting, where a single smear had more than one diagnosis code, only the most serious ranked code was used according to the hierarchy of codes (section 4.11). Total abnormalities included all smears with a diagnosis code of ASCUS or more serious abnormality. Smear results for women of all ages were included. Smears recorded as being unsatisfactory for evaluation were excluded.

Results

Table 24 shows the number and proportion of satisfactory or satisfactory but limited smears in the specified cytological categories for each of the laboratories that processed smears during the reporting quarter. The results were grouped into laboratories reporting smears predominantly for hospital clinics, and laboratories reporting smears predominantly from the community. During the reporting quarter, 100,921 satisfactory or satisfactory but limited smears were taken, and the number of smears reported by each laboratory during the quarter ranged from 154 for Waikato Hospital Laboratory to 31,007 for Diagnostic Medlab Auckland.

¹⁴ 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 this group 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 both hospital and private gynaecology colposcopy clinics.

Reporting practices may also differ among laboratories. In particular, there are variations in the reporting of the ASCUS (atypical squamous cells of undetermined significance) category. The interpretation and value of this ASCUS category is the subject of an international debate amongst cytopathologists.

Overall, 91.9% of smears were negative for dysplasia or malignancy, which was within the target of not more than 96% of smears being negative for dysplasia or malignancy. While this result is similar to those calculated for the previous three reporting quarters, it included all women whereas the first and second reports included smear results for women aged 20-69 years only. While all laboratories combined met the target, there was variation amongst the laboratories. The proportion of smears reported as negative for dysplasia or malignancy ranged from 71.7% for Auckland Hospital Laboratory to 83.8% for Canterbury Health Laboratories amongst the three hospital-based laboratories, and from 81.7% for Pathlab Waikato to 95.3% for both Diagnostic Medlab Auckland and Southern Community Laboratory Christchurch amongst the twelve community-based laboratories.

The proportion of smears reported as HSIL was 1.1% for all laboratories combined. No laboratories were below the target of not less than 0.6%. The proportion of smears reported as HSIL was clearly higher for each of the hospital-based laboratories compared with the community-based laboratories.

For all laboratories combined, the target of not more than 10% of smears reported as abnormal was not exceeded. The proportion of all satisfactory or satisfactory but limited smears reported with an abnormality was 8.1%, which is the same as that reported for the October-December 2000 quarter, lower than that reported for January-March 2001 (9.1%) and higher than that reported for the April-June 2001 (7.8%). However, as mentioned above only results for women aged 20-69 years were included when calculating this indicator for the first two monitoring reports. All three hospital-based laboratories reported many more than 10% of the slides they processed to be abnormal: Auckland Hospital Laboratory (28.3%), Canterbury Health Laboratories (16.3%), and Waikato Hospital Laboratory (20.1%). Three laboratories that reported smears predominantly from the community reported more than 10% of the slides as abnormal. They were Medlab Bay of Plenty (15.6%), Pathlab Waikato (18.3%) and Taranaki Medlab (10.9%). As observed in the previous reports, the Medlab Bay of Plenty and Pathlab Waikato also reported relatively high proportions of smears as ASCUS compared with the other community laboratories, 10.3% and 12.4%, respectively.

RECOMMENDATIONS

Service Issues

1. An explanation for the relatively high level of ASCUS reporting should be sought from Medlab Bay of Plenty and Pathlab Waikato.

The following recommendation was stated in Report 1, Section 4.17 and is still applicable.

2. An investigation of the outcome for women with ASCUS cytology results is needed.

Table 24. 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 reaction		AGUS favour dysplasia		ASCUS possible HSIL		HSIL (target = not less than 0.6%)		Total abnormalities† (target = not more than 10%)		Total number of smears
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<i>Predominantly hospital clinic work</i>																	
Auckland Hospital Laboratory‡	1,431	71.73	314	15.74	138	6.92	5	0.25	1	0.05	11	0.55	100	5.01	564	28.27	1,995
Canterbury Health Laboratories	1,149	83.75	83	6.05	94	6.85	1	0.07	1	0.07	12	0.87	43	3.13	223	16.25	1,372
Waikato Hospital Laboratory	123	79.87	19	12.34	8	5.19	0	0.00	0	0.00	0	0.00	4	2.60	31	20.13	154
Rest of table 24 continued on next page																	

† Does not include inflammation or infection

‡ Auckland Hospital Laboratory was previously known as National Women's Hospital Laboratory.

Table 24 continued

Laboratory	Negative for dysplasia or malignancy (target = not more than 96%)		Total ASCUS (including ASCUS possible HSIL)		LSIL		AGUS favour reaction		AGUS favour dysplasia		ASCUS possible HSIL		HSIL (target = not less than 0.6%)		Total abnormalitie† (target = not more than 10%)		Total number of smears
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<i>Predominantly community work</i>																	
Diagnostic Medlab Auckland	29,539	95.27	608	1.96	640	2.06	6	0.02	0	0.00	49	0.16	208	0.67	1,468	4.73	31,007
Medical Laboratory Southland‡	1,055	92.46	37	3.24	35	3.07	0	0.00	0	0.00	3	0.26	12	1.05	86	7.54	1,141
Medical Laboratory Wellington#	7,995	90.26	484	5.46	284	3.21	13	0.15	6	0.07	29	0.33	75	0.85	863	9.74	8,858
Medlab Bay of Plenty	5,811	84.40	707	10.27	264	3.83	8	0.12	1	0.01	9	0.13	91	1.32	1,074	15.60	6,885
Medlab Central, Palmerston North	7,140	91.90	258	3.32	287	3.69	6	0.08	7	0.09	5	0.06	69	0.89	629	8.10	7,769
Medlab Hamilton	6,740	90.06	348	4.65	316	4.22	6	0.08	0	0.00	6	0.08	72	0.96	744	9.94	7,484
Medlab South Christchurch	8,749	92.63	319	3.38	283	3.00	7	0.07	4	0.04	18	0.19	78	0.83	696	7.37	9,445
Pathlab Waikato	2,297	81.74	348	12.38	106	3.77	3	0.11	1	0.04	10	0.36	54	1.92	513	18.26	2,810
SCL* Christchurch	4,783	95.28	75	1.49	106	2.11	3	0.06	0	0.00	7	0.14	52	1.04	237	4.72	5,020
SCL* Dunedin	9,007	94.98	89	0.94	264	2.78	0	0.00	0	0.00	20	0.21	122	1.29	476	5.02	9,483
Taranaki Medlab	3,896	89.07	238	5.44	176	4.02	5	0.11	1	0.02	13	0.30	58	1.33	478	10.93	4,374
Valley Diagnostic Laboratory#	2,987	94.68	58	1.84	88	2.79	0	0.00	0	0.00	2	0.06	22	0.70	168	5.32	3,155
Total	92,702	91.86	3,985	3.95	3,089	3.06	63	0.06	22	0.02	194	0.19	1,060	1.05	8,219	8.14	100,921

† Does not include inflammation or infection.

* SCL = Southern Community Laboratory.

‡ Medical Laboratory Southland ceased processing smears in August 2001 and data presented for this laboratory also includes some smears processed by Medlab South after August 2001.

The results of some smears processed at these laboratories during the quarter were not recorded on the NCSP-Register due to staffing issues at the Wellington NCSP regional site.

4.17 Laboratory cytology turn around time

Definition

Laboratory cytology turn around time is the period of time between the smear being received in 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 on the NCSP-Register, was used to measure the laboratory cytology 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 each laboratory during the quarter. Smear results for women of all ages were included.

Results

Table 25 shows the proportion of smears received and reports issued within the specified time periods for each laboratory. Overall 95.3% smear reports were issued within 7 working days of smears being received by laboratories during the reporting quarter. This was much better than that reported for the previous reporting quarters and more than the target of 90%. For each of the previous three reporting quarters the target was not reached – April-June 2001 (87.8%), January-March 2001 (85.8%) and October-December 2000 (86.2%). Three of the fifteen laboratories processing smears during the quarter did not reach the 7-day target. These laboratories were Medical Laboratory Wellington (78.7%), Medlab Bay of Plenty (75.0%) and Valley Diagnostic Laboratory (75.8%).

Overall, almost all smear reports (99.97%) were issued within 14 working days of smears being received by the laboratory. This was also better than that reported for the previous reporting quarters - April-June 2001 (96.8%), January-March 2001 (90.3%) and October-December 2000 (95.1%). The five laboratories that did not reach the 14-day target of 100% were very close to achieving this target.

Compared with previous reporting quarters, cytology turn around times have markedly improved at both Medlab Bay of Plenty and Medlab Hamilton laboratories.

RECOMMENDATIONS

Service Issues

1. Medical Laboratory Wellington, Medlab Bay of Plenty and Valley Diagnostic Laboratory should continue to work towards achieving the 7-day target.

Table 25. Timeliness of smear reporting by laboratories [targets = 90% within 7 working days and 100% within 14 working days].

Laboratory	Within 7 working days	From 8-14 working days		More than 14 working days
	Proportion (%)	Proportion (%)	Cumulative Proportion (%)	Proportion (%)
<i>Predominantly hospital clinic work</i>				
Auckland Hospital Laboratory	97.63	2.11	99.74	0.26
Canterbury Health Laboratories	100.00	0.00	100.00	0.00
Waikato Hospital Laboratory	100.00	0.00	100.00	0.00
<i>Predominantly community work</i>				
Diagnostic Medlab Auckland	99.19	0.79	99.98	0.02
Medical Laboratory Southland†	100.00	0.00	100.00	0.00
Medical Laboratory Wellington‡	78.72	21.28	100.00	0.00
Medlab Bay of Plenty	74.97	25.03	100.00	0.00
Medlab Central, Palmerston North	99.89	0.11	100.00	0.00
Medlab Hamilton	99.94	0.06	100.00	0.00
Medlab South Christchurch	100.00	0.00	100.00	0.00
Pathlab Waikato	99.85	0.15	100.00	0.00
Southern Community Laboratory Christchurch	99.92	0.04	99.96	0.04
Southern Community Laboratory Dunedin	99.85	0.08	99.93	0.07
Taranaki Medlab	98.25	1.75	100.00	0.00
Valley Diagnostic Laboratory‡	75.84	24.00	99.84	0.16
Total	95.25	4.72	99.97	0.02

† Medical Laboratory Southland ceased processing smears in August 2001 and data presented for this laboratory also includes some smears processed by Medlab South after August 2001.

‡ The results of some smears processed at these laboratories during the quarter were not recorded on the NCSP-Register due to staffing issues at the Wellington NCSP regional site.

4.18 Satisfactory but limited and unsatisfactory smears by laboratory

Definitions

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 code 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.

Targets

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 each expressed as a proportion of the total number of reports of smears taken during the quarter by each laboratory.

Results

Table 26 shows the number and proportion of satisfactory but limited and unsatisfactory smears taken and reported during the quarter by the specified laboratories. Overall, of the 102,257 smears processed, 19.5% were reported as being satisfactory but limited. This met the target of not more than 20%, whereas the target was not reached for the April - June 2001 (21.4%) and January - March (20.1%) reporting quarters. The proportion of satisfactory but limited smears reported ranged from 17.8% for Waikato Hospital Laboratory to 28.0% at Auckland Hospital Laboratory amongst the hospital-based laboratories, and from 6.7% at Southern Community Laboratory Dunedin to 31.5% at Pathlab Waikato amongst the community-based laboratories. Seven of the fifteen laboratories who processed smears during the reporting quarter reported more than 20% of smears as satisfactory but limited. A high level of satisfactory but limited smears is associated with a higher degree of short interval re-screening (see Section 4.6).

Overall, 0.9% of the 102,257 smears processed were reported as unsatisfactory. This was the same as that reported for the last two reporting quarters and within the target range of 0.5-2.0%. Two laboratories reported more than 2.0% of the smears they processed as

unsatisfactory. They were Auckland Hospital Laboratory (3.4%) and Valley Diagnostic Laboratory (2.5%). Four laboratories reported less than 0.5% of the smears they processed as unsatisfactory. They were Medical Laboratory Southland (0.4%), Medlab Hamilton (0.3%), Medlab South Christchurch (0.4%) and Southern Community Laboratory Christchurch (0.3%). All these four laboratories also reported less than 0.5% of all the smears they processed as unsatisfactory for the previous two reporting quarters.¹⁵

RECOMMENDATIONS

Service Issues

1. Reasons for laboratories reporting levels of unsatisfactory smears outside the target range should be sought, particularly those laboratories reporting levels below the target range.

The following recommendation was previously stated in Report 2, Section 4.19, and is still applicable.

2. Reasons for the wide variation and high level of reporting, of satisfactory but limited smears should be examined.

¹⁵ This indicator was not included in the first quarterly monitoring report.

Table 26. The number and proportion of satisfactory but limited and unsatisfactory smears reported by laboratory.

Laboratory	Total smears processed	Satisfactory but limited smears (target = not more than 20%)	Unsatisfactory smears (target = 0.5 – 2.0%)
	Number	Number (%)	Number (%)
<i>Predominantly hospital clinic work</i>			
Auckland Hospital Laboratory	2,073	581 (28.0)	71 (3.4)
Canterbury Health Laboratories	1,413	259 (18.3)	19 (1.3)
Waikato Hospital Laboratory	157	28 (17.8)	1 (0.6)
<i>Predominantly community work</i>			
Diagnostic Medlab Auckland	31,294	6,956 (22.2)	219 (0.7)
Medical Laboratory Southland†	1,154	136 (11.8)	5 (0.4)
Medical Laboratory Wellington‡	9,034	2,046 (22.6)	160 (1.8)
Medlab Bay of Plenty	6,941	1,929 (27.8)	47 (0.7)
Medlab Central, Palmerston North	7,853	1,634 (20.8)	36 (0.5)
Medlab Hamilton	7,526	1,588 (21.1)	23 (0.3)
Medlab South Christchurch	9,528	1,345 (14.1)	35 (0.4)
Pathlab Waikato	2,845	896 (31.5)	21 (0.7)
Southern Community Laboratory Christchurch	5,069	481 (9.5)	16 (0.3)
Southern Community Laboratory Dunedin	9,652	648 (6.7)	92 (1.0)
Taranaki Medlab	4,478	855 (19.1)	91 (2.0)
Valley Diagnostic Laboratory‡	3,240	566 (17.5)	80 (2.5)
Total	102,257	19,948 (19.5)	916 (0.9)

† Medical Laboratory Southland ceased processing smears in August 2001 and data presented for this laboratory also includes some smears processed by Medlab South after August 2001.

‡ The results of some smears processed at these laboratories during the quarter were not recorded on the NCSP-Register due to staffing issues at the Wellington NCSP regional site.

4.19 Cytology reports predicting HSIL (positive predictive value)

The reporting of histology involves a degree of subjective assessment of the cellular appearances as examined under a microscope and histology reporting practices can differ among pathologists and laboratories. A different pathologist or laboratory from that which reported the cervical smear may issue the histology reports.

Definition

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

Target

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

Results

This indicator will be reported 6-monthly and annually.

4.20 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

The proportion of smears originally reported as negative for dysplasia or malignancy within the preceding 42 months of a histological diagnosis of HSIL or more serious which, on review, are consistent with HSIL or more serious abnormality should be less than 20%.

Results

This indicator will be reported annually.

4.21 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 to enable the calculation of the waiting time for assessment for HSIL or ASCUS possible high grade indicator are collected by DHB colposcopy clinics and these have not been collected previously. Again, it was not possible to calculate and comment on the proportion of women with an HSIL or ASCUS possible high grade cytology result referred for colposcopic assessment who were waiting longer than 4 weeks. 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 for each DHB colposcopy service were provided by the MoH.

Results

Table 27 shows the monthly number of women with an HSIL or ASCUS possible high grade cytology result referred for a colposcopic assessment for each DHB colposcopy service and the number of women referred for colposcopic assessment of HSIL or ASCUS possible high grade cytology result waiting longer than 4 weeks at the end of each month. Data were missing for several DHB colposcopy services.

Because the number of women waiting longer than the recommended 4 weeks for colposcopic assessment is collected only at the end of each month, rather than the number of individual women who were waiting longer than 4 weeks during the entire month, this indicator was not able to be calculated.

RECOMMENDATIONS

Data Issues

The following recommendation was previously stated in Report 1, Section 4.22 and is still applicable.

1. Efforts to collect data required to calculate this indicator from colposcopy clinics should continue.

Service Issues

1. Efforts to reduce the number of women with HSIL cytology waiting more than 4 weeks for colposcopic assessment should continue.

Table 27. Waiting time for colposcopic assessment for HSIL or ASCUS possible high grade by DHB colposcopy services.

DHB Colposcopy Service	Number of women referred each month for colposcopic assessment of HSIL or ASCUS-HG			Number of women referred waiting longer than 4 weeks at the end of each month		
	July	August	September	July	August	September
Auckland	31	24	39	1	1	6
Bay of Plenty†						
Canterbury†						
Capital and Coast†						
Counties Manakau†						
Hawkes Bay	13	11	18	2	0	0
Hutt Valley†						
Lakes†						
MidCentral	16	15	18	0	0	0
Nelson/Marlborough†				0	0	0
Northland†				2	1	3
Otago†				0	0	0
South Canterbury	1	3	1	0	0	0
Southland	15	22	8	6	5	10
Tairāwhiti†						
Taranaki†				0	0	0
Waikato†				8	7	7
Wairarapa†						
Waitemata†						
Whanganui†						
West Coast	1	3	3	0	0	0
Total						

† Data not provided

4.22 Waiting time for colposcopic assessment for LSIL

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 cytology result to the time of the first colposcopic assessment.

Target

The target is for 95% or more of women with a low grade cytology result to be assessed within 26 weeks.

Calculation

Data required to enable the calculation of the waiting time for assessment for LSIL indicator are collected by DHB colposcopy clinics and these have not been collected previously. Again, it was not possible to calculate and comment on the proportion of women with a LSIL cytology result referred for colposcopic assessment who were waiting longer than 26 weeks. The number of women with low grade cytology results who were referred to a DHB colposcopy clinic each month, and the number of women with low grade cytology results who were waiting longer than 26 weeks for a colposcopic assessment at the end of each month for each DHB colposcopy service were provided by the MoH.

Results

Table 28 shows the monthly number of women with a LSIL or ASCUS cytology result referred for a colposcopic assessment for each DHB colposcopy service and the number of women referred for colposcopic assessment of low grade cytology results waiting longer than 26 weeks at the end of each month. Data were missing for several DHB colposcopy services.

Because the number of women waiting longer than the recommended 26 weeks for colposcopic assessment is collected only at the end of each month, rather than the number of individual women who were waiting longer than 26 weeks during the entire month, the indicator could not be calculated.

RECOMMENDATIONS

Data Issues

1. See Section 4.21.

Service Issues

1. Reasons why women with low grade cytology waited for more than 26 weeks for a colposcopic assessment should be sought from the Counties Manakau, Hawkes Bay and Waikato DHB colposcopy services.

2. Efforts to reduce the number of women with LSIL cytology waiting more than 26 weeks for colposcopic assessment should continue.

Table 28. Waiting time for colposcopic assessment of LSIL or ASCUS by DHB colposcopy services.

DHB Colposcopy Services	Number of women referred each month for colposcopic assessment of LSIL or ASCUS			Number of women referred waiting longer than 26 weeks at the end of each month		
	July	August	September	July	August	September
Auckland	51	29	31	0	0	0
Bay of Plenty†						
Canterbury†						
Capital and Coast†						
Counties Manakau†				130	107	123
Hawkes Bay	85	93	110	90	90	108
Hutt Valley†						
Lakes†						
MidCentral	12	8	18	0	1	1
Nelson/Marlborough†				3	0	0
Northland†				18	12	6
Otago†				0	0	0
South Canterbury	17	15	18	0	0	0
Southland	7	15	14	1	0	1
Tairāwhiti†						
Taranaki†				11	11	8
Waikato†				151	196	221
Wairarapa†						
Waitemata†						
Whanganui†						
West Coast	4	6	4	0	0	0
Total						

† Data not provided

4.23 Residual high grade disease after treatment

Definition

Residual high grade disease after treatment is high grade squamous or glandular intraepithelial lesions (CIN2-3) 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.

Results

This indicator will be reported in the annual report.

4.24 Satisfactory but limited and unsatisfactory smears by smear taker

Definitions

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 code 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 smear taker 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

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 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 the group.

For each smear taker group, the number of unsatisfactory smears was expressed as a proportion of the total number of smears taken by the group.

Results

Table 29 shows the number and proportion of satisfactory but limited and unsatisfactory smears taken in the quarter by annual volume of smears taken by each smear taker group. Overall, 102,257 smears were taken during the reporting quarter, of which 12 were taken by lay smear takers, 66,696 by medical smear takers, 25,292 by nurses, 9,784 by specialists and 473 by midwives. Of the 102,257 smears, 79.6% were considered satisfactory, 19.5% were considered satisfactory but limited and 0.9% were considered unsatisfactory for reading. Overall, the proportion of satisfactory but limited smears and the proportion of unsatisfactory smears were within the targets.

For all medical smear takers, the proportion of satisfactory but limited smears (20.2%) was slightly above the upper limit of the target. For medical smear takers who took more than 100 smears during the preceding 12 months, the proportion of satisfactory but limited smears (19.5%) taken in the quarter was within the target, unlike the medical smear taker groups who took fewer than 30 smears per year (26.4%) and 30-100 smears per year (20.7%). The proportions of satisfactory but limited smears for each of the specialist, nurse and lay smear taker groups were all within the target. Amongst both the specialist and midwife groups who took less than 30 or 30-100 smears in the previous 12 months, the proportions of satisfactory but limited smears were at or above the 20% upper limit of the target.

The lay smear taker group did not have any smears classified as unsatisfactory, but this group took very few smears. Also, no unsatisfactory smears were recorded amongst the midwives who took 30-100 or greater than 100 smears in the previous 12 months. The proportion of unsatisfactory smears taken by all midwives (0.4%) was slightly below the target range of 0.5-2.0%. Amongst the smear taker subgroups defined by volume of smears taken in the previous 12 months, the proportion of unsatisfactory smears was less than the target amongst nurses who took more than 100 smears during the previous 12 months, and greater than the target for specialists who took 30 or 30-100 smears during the previous 12 months.

RECOMMENDATIONS

Service Issues

1. Reasons for the variation in the proportion of satisfactory but limited smears between smear taker groups and amongst smear taker subgroups defined by volume of smears taken in the previous 12 months need to be examined.

Table 29. The number and proportion (%) of satisfactory but limited and unsatisfactory smears in the quarter by annual volume of smears taken 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 (%)	Number (%)	Number (%)
Lay	< 30	0	0 (0.0)	0 (0.0)	0 (0.0)
	30-100	12	11 (91.7)	1 (8.3)	0 (0.0)
	> 100	0	0 (0.0)	0 (0.0)	0 (0.0)
	Total	12	11 (91.7)	1 (8.3)	0 (0.0)
Medical	< 30	3,397	2,452 (72.2)	897 (26.4)	48 (1.4)
	30-100	18,686	14,615 (78.2)	3,875 (20.7)	196 (1.0)
	> 100	44,613	35,554 (79.7)	8,692 (19.5)	367 (0.8)
	Total	66,696	52,621 (78.9)	13,464 (20.2)	611 (0.9)
Nurse	< 30	1,517	1,203 (79.3)	302 (19.9)	12 (0.8)
	30-100	9,743	7,812 (80.2)	1,871 (19.2)	60 (0.6)
	> 100	14,032	11,667 (83.1)	2,303 (16.4)	62 (0.4)
	Total	25,292	20,862 (81.8)	4,476 (17.7)	134 (0.5)
Specialist	< 30	123	90 (73.2)	30 (24.4)	3 (2.4)
	30-100	656	464 (70.7)	174 (26.5)	18 (2.7)
	> 100	9,005	7,144 (79.3)	1,713 (19.0)	148 (1.6)
	Total	9,784	7,698 (78.7)	1,917 (19.6)	169 (1.7)
Midwife	< 30	225	159 (70.7)	64 (28.4)	2 (0.9)
	30-100	70	56 (80.0)	14 (20.0)	0 (0.0)
	> 100	178	166 (93.3)	12 (6.7)	0 (0.0)
	Total	473	381 (80.5)	90 (19.0)	2 (0.4)
Total		102,257	81,393 (79.6)	19,948 (19.5)	916 (0.9)

APPENDIX 1

Table 30. The projected number of women aged 20-69 years by 5-year age group for each NCSP region.

NCSP region	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Auckland	41,950	47,880	52,970	53,540	48,800	42,880	38,810	29,000	22,760	17,630	396,220
Bay of Plenty	7,400	8,710	10,150	10,950	10,800	9,530	8,810	7,210	6,700	5,570	85,830
Canterbury	16,240	18,040	18,960	19,390	19,310	17,690	16,590	12,420	10,890	9,160	158,690
Hawkes Bay	4,000	4,570	5,115	5,625	5,750	5,310	5,080	3,770	3,375	2,850	45,445
Manawatu/ Wanganui	8,145	7,923	8,201	8,814	8,674	7,625	6,971	5,465	4,997	4,314	71,129
Nelson/ Marlborough	3,040	3,820	4,570	4,970	5,140	4,620	4,360	3,410	2,880	2,370	39,180
Northland	3,590	4,100	5,000	5,550	5,710	5,060	4,740	3,980	3,560	2,940	44,230
Otago	7,787	6,530	6,184	6,629	6,853	6,121	5,765	4,299	3,921	3,355	57,444
Southland	3,383	3,550	4,026	4,481	4,367	3,719	3,335	2,481	2,249	1,915	33,506
Tairāwhiti	1,260	1,430	1,630	1,790	1,890	1,630	1,340	1,040	920	820	13,750
Taranaki	3,020	3,140	3,720	4,070	4,350	3,620	3,330	2,600	2,310	2,000	32,160
Waikato	11,053	11,554	12,224	12,537	12,631	11,003	10,035	7,928	6,790	5,607	101,362
Wellington	15,082	16,583	18,185	18,549	17,145	14,712	13,534	10,097	8,173	6,669	138,729
West Coast	820	970	1,170	1,310	1,300	1,080	1,080	890	700	550	9,870
Total	126,770	138,800	152,105	158,205	152,720	134,600	123,780	94,590	80,225	65,750	1,227,545

Table 31. The projected number of women aged 20-69 years by 5-year age group for each NCSP region adjusted for hysterectomy prevalence.

NCSP region	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Auckland	41,937	47,678	51,905	50,520	43,240	35,137	29,845	21,546	16,525	12,485	350,816
Bay of Plenty	7,398	8,673	9,946	10,332	9,569	7,809	6,775	5,357	4,864	3,944	74,668
Canterbury	16,235	17,964	18,579	18,296	17,110	14,496	12,758	9,227	7,907	6,487	139,058
Hawkes Bay	3,999	4,551	5,012	5,308	5,095	4,351	3,906	2,801	2,450	2,018	39,491
Manawatu/ Wanganui	8,143	7,890	8,036	8,317	7,686	6,248	5,361	4,060	3,628	3,055	62,423
Nelson/ Marlborough	3,039	3,804	4,478	4,690	4,554	3,786	3,353	2,533	2,091	1,678	34,006
Northland	3,589	4,083	4,899	5,237	5,059	4,146	3,645	2,957	2,585	2,082	38,282
Otago	7,785	6,502	6,060	6,255	6,072	5,016	4,433	3,194	2,847	2,376	50,540
Southland	3,382	3,535	3,945	4,228	3,869	3,047	2,565	1,843	1,633	1,356	29,404
Tairāwhiti	1,260	1,424	1,597	1,689	1,675	1,336	1,030	773	668	581	12,032
Taranaki	3,019	3,127	3,645	3,840	3,854	2,966	2,561	1,932	1,677	1,416	28,038
Waikato	11,050	11,505	11,978	11,830	11,192	9,016	7,717	5,890	4,930	3,971	89,078
Wellington	15,077	16,513	17,819	17,503	15,191	12,056	10,408	7,502	5,934	4,723	122,725
West Coast	820	966	1,146	1,236	1,152	885	831	661	508	389	8,595
Total	126,732	138,214	149,046	149,281	135,319	110,296	95,186	70,276	58,247	46,561	1,079,157

Table 32. The projected number of women aged 20-69 years by 5-year age group for each DHB.

DHB	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Auckland	15,450	16,950	18,800	18,250	16,100	13,900	11,800	8,500	6,500	5,050	131,300
Bay of Plenty	4,520	5,230	6,190	6,880	6,860	6,170	5,810	4,790	4,650	3,850	54,950
Canterbury	14,950	16,600	17,230	17,360	17,190	15,750	14,750	10,930	9,480	7,900	142,140
Capital Coast	9,682	10,713	11,635	11,539	10,225	8,732	7,884	5,837	4,593	3,709	84,549
Hawkes Bay	4,000	4,570	5,115	5,625	5,750	5,310	5,080	3,770	3,375	2,850	45,445
Hutt	4,350	4,860	5,380	5,660	5,370	4,550	4,340	3,230	2,600	2,170	42,510
Lakes	2,880	3,480	3,960	4,070	3,940	3,360	3,000	2,420	2,050	1,720	30,880
Manawatu	6,098	5,817	5,925	6,261	6,045	5,408	4,976	3,843	3,487	2,961	50,821
Nelson/ Marlborough	3,040	3,820	4,570	4,970	5,140	4,620	4,360	3,410	2,880	2,370	39,180
North West Auckland	13,740	16,390	18,280	19,480	18,370	16,100	15,170	11,430	9,100	7,110	145,170
Northland	3,590	4,100	5,000	5,550	5,710	5,060	4,740	3,980	3,560	2,940	44,230
Otago	7,787	6,530	6,184	6,629	6,853	6,121	5,765	4,299	3,921	3,355	57,444
South Auckland	12,760	14,540	15,890	15,810	14,330	12,880	11,840	9,070	7,160	5,470	119,750
South Canterbury	1,290	1,440	1,730	2,030	2,120	1,940	1,840	1,490	1,410	1,260	16,550
Rest of table 32 continued on next page											

Table 32 continued

DHB	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Southland	3,383	3,550	4,026	4,481	4,367	3,719	3,335	2,481	2,249	1,915	33,506
Tairāwhiti	1,260	1,430	1,630	1,790	1,890	1,630	1,340	1,040	920	820	13,750
Taranaki	3,020	3,140	3,720	4,070	4,350	3,620	3,330	2,600	2,310	2,000	32,160
Waikato	11,053	11,554	12,224	12,537	12,631	11,003	10,035	7,928	6,790	5,607	101,362
Wairarapa	1,050	1,010	1,170	1,350	1,550	1,430	1,310	1,030	980	790	11,670
Wanganui	2,047	2,106	2,276	2,553	2,629	2,217	1,995	1,622	1,510	1,353	20,308
West Coast	820	970	1,170	1,310	1,300	1,080	1,080	890	700	550	9,870
Total	126,770	138,800	152,105	158,205	152,720	134,600	123,780	94,590	80,225	65,750	1,227,545

Table 33. The projected number of women aged 20-69 years by 5-year age group for each DHB adjusted for hysterectomy prevalence.

DHB	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Auckland	15,445	16,878	18,422	17,221	14,266	11,390	9,074	6,315	4,719	3,576	117,307
Bay of Plenty	4,519	5,208	6,066	6,492	6,078	5,056	4,468	3,559	3,376	2,726	47,547
Canterbury	14,946	16,530	16,884	16,381	15,231	12,906	11,343	8,120	6,883	5,594	124,817
Capital Coast	9,679	10,668	11,401	10,888	9,060	7,155	6,063	4,337	3,335	2,627	75,212
Hawkes Bay	3,999	4,551	5,012	5,308	5,095	4,351	3,906	2,801	2,450	2,018	39,491
Hutt	4,349	4,839	5,272	5,341	4,758	3,728	3,337	2,400	1,888	1,537	37,449
Lakes	2,879	3,465	3,880	3,840	3,491	2,753	2,307	1,798	1,488	1,218	27,121
Manawatu	6,096	5,792	5,806	5,908	5,356	4,432	3,827	2,855	2,532	2,097	44,700
Nelson/ Marlborough	3,039	3,804	4,478	4,690	4,554	3,786	3,353	2,533	2,091	1,678	34,006
North West Auckland	13,736	16,321	17,912	18,381	16,277	13,193	11,666	8,492	6,607	5,035	127,619
Northland	3,589	4,083	4,899	5,237	5,059	4,146	3,645	2,957	2,585	2,082	38,282
Otago	7,785	6,502	6,060	6,255	6,072	5,016	4,433	3,194	2,847	2,376	50,540
South Auckland	12,756	14,479	15,570	14,918	12,697	10,554	9,105	6,739	5,198	3,874	105,890
South Canterbury	1,290	1,434	1,695	1,915	1,878	1,590	1,415	1,107	1,024	892	14,240
Rest of table 33 continued on next page.											

Table 33 continued

DHB	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Southland	3,382	3,535	3,945	4,228	3,869	3,047	2,565	1,843	1,633	1,356	29,404
Tairāwhiti	1,260	1,424	1,597	1,689	1,675	1,336	1,030	773	668	581	12,032
Taranaki	3,019	3,127	3,645	3,840	3,854	2,966	2,561	1,932	1,677	1,416	28,038
Waikato	11,050	11,505	11,978	11,830	11,192	9,016	7,717	5,890	4,930	3,971	89,078
Wairarapa	1,050	1,006	1,146	1,274	1,373	1,172	1,007	765	712	559	10,064
West Coast	820	966	1,146	1,236	1,152	885	831	661	508	389	8,595
Whanganui	2,046	2,097	2,230	2,409	2,329	1,817	1,534	1,205	1,096	958	17,722
Total	126,732	138,214	149,046	149,281	135,319	110,296	95,186	70,276	58,247	46,561	1,079,157

Table 34. The projected number of women aged 20-69 years by 5-year age group for each ethnic group.

Ethnic Group	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Maori	25,335	24,800	23,735	22,425	19,525	14,710	11,375	7,965	6,631	4,710	161,211
Other	92,090	105,365	119,330	127,465	126,605	114,590	108,345	83,715	71,379	59,460	1,008,344
Pacific	9,345	8,635	9,040	8,315	6,590	5,300	4,060	2,910	2,215	1,580	57,990
Total	126,770	138,800	152,105	158,205	152,720	134,600	123,780	94,590	80,225	65,750	1,227,545

Table 35. The projected number of women aged 20-69 years by 5-year age group for each ethnic group adjusted for hysterectomy prevalence.

Ethnic Group	Age group (years)										Total 20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Maori	25,327	24,695	23,258	21,160	17,300	12,054	8,747	5,918	4,814	3,335	146,609
Other	92,062	104,920	116,930	120,275	112,179	93,899	83,317	62,196	51,824	42,106	879,709
Pacific	9,342	8,599	8,858	7,846	5,839	4,343	3,122	2,162	1,608	1,119	52,838
Total†	126,732	138,214	149,046	149,281	135,319	110,296	95,186	70,276	58,247	46,561	1,079,157

† For the total of some 5-year age groups, there is a difference of one between the stated total and the sum of the separate ethnic groups. This is due to rounding when calculating the hysterectomy-adjusted populations.

Table 36. The projected number of women aged 20-69 years by ethnicity group for each DHB area.

District Health Board	Ethnic Group			Total 20-69
	Maori	Other	Pacific	
Auckland	10,940	106,500	13,860	131,300
Bay of Plenty	12,690	41,770	490	54,950
Canterbury	8,540	131,440	2,160	142,140
Capital Coast	7,829	70,971	5,749	84,549
Hawkes Bay	9,710	34,895	840	45,445
Hutt	5,720	34,165	2,625	42,510
Lakes	9,650	20,650	580	30,880
Manawatu	6,831	43,104	886	50,821
Nelson/ Marlborough	2,990	35,940	250	39,180
North West Auckland	12,010	125,505	7,655	145,170
Northland	12,420	31,255	555	44,230
Otago	2,998	53,792	654	57,444
South Auckland	19,040	82,145	18,565	119,750
South Canterbury	825	15,655	70	16,550
Southland	3,067	30,198	241	33,506
Tairāwhiti	5,820	7,755	175	13,750
Taranaki	4,190	27,740	230	32,160
Waikato	19,084	80,361	1,917	101,362
Wairarapa	1,685	9,790	195	11,670
West Coast	835	8,980	55	9,870
Whanganui	4,337	15,733	238	20,308
Total	161,211	1,008,344	57,990	1,227,545

APPENDIX 2

Table 37. Registrations of malignant neoplasm of cervix uteri, 1990-1997 by Region (Numbers, and Standardised Registration Ratios).

Region		1990-93		1994-97		1990-97		Differences in Observed 90-93 to 94-97
		Total Observed		Total Observed		Total Observed		
		Number	SRR	Number	SRR	Number	SRR	Number
1	Northland	44	131.2%	55	167.1%	99	146.7%	11
2	North West Auckland	79	82.5%	94	96.6%	173	86.8%	15
3	Central Auckland	84	94.7%	89	103.4%	173	98.3%	5
4	South Auckland	88	115.3%	79	102.4%	167	105.7%	-9
5	Thames Valley & Peninsula	10	89.0%	14	126.8%	24	106.0%	4
6	Central & North Waikato	18	94.6%	18	100.0%	36	97.6%	0
7	Hamilton City	31	118.3%	30	119.9%	61	119.1%	-1
8	South & Eastern Waikato	12	87.3%	11	89.9%	23	91.7%	-1
9	Western BoP	37	128.4%	33	111.0%	70	114.9%	-4
10	Lakes	35	153.5%	27	123.6%	62	138.5%	-8
11	Eastern BoP	22	187.3%	23	208.5%	45	199.0%	1
12	King Country	6	83.5%	5	77.6%	11	83.3%	-1
13	Tairāwhiti	20	172.7%	24	228.0%	44	204.1%	4
14	Taranaki	42	146.0%	28	108.2%	70	132.1%	-14
15	Hawkes Bay	41	107.4%	25	70.9%	66	91.4%	-16
16	Wanganui	17	92.7%	12	73.2%	29	86.4%	-5
17	Manawatu	41	106.2%	32	90.3%	73	100.6%	-9
18	Porirua-Kapiti	24	108.5%	23	107.9%	47	107.6%	-1
19	Hutt	37	105.4%	27	85.2%	64	98.6%	-10
20	Wellington	26	63.8%	22	57.1%	48	60.9%	-4
21	Wairarapa	5	47.0%	11	114.3%	16	81.1%	6
22	Nelson-Marlborough	17	56.4%	28	95.0%	45	74.5%	11
23	West Coast	9	105.5%	7	90.4%	16	100.9%	-2
24	Canterbury	87	79.2%	99	95.3%	186	87.4%	12
25	South Canterbury	18	112.7%	9	63.4%	27	92.8%	-9
26	Otago	45	89.8%	30	65.3%	75	79.7%	-15
27	Southland	25	95.3%	23	99.0%	48	100.9%	-2
99	Total NZ	920	100.0%	878	100.0%	1798	100.0%	-42

Source: Cancer of Cervix Uteri. Regional Analysis. New Zealand 1990-1997. Prepared jointly by the Ministry of Health and the New Zealand Health Funding Authority. August 2000.

The methods used by the authors to calculate the Standardised Registration Ratios (SRRs) in Table 40 are described on the following page. The description is taken directly from the report, Cancer of Cervix Uteri. Regional Analysis. New Zealand 1990-1997.

METHODS

New Zealand Cancer Register

The analysis was carried out on data sourced from the New Zealand Cancer Register maintained by the New Zealand Health Information Service. The Registry believes that registration of invasive cancer of the cervix was virtually complete throughout the period reviewed.

Exclusions

Data about patients domiciled overseas have been excluded.

Age-standardisation of incidence rates

Most diseases are related to age. For example, the highest rates of cancer and cardiovascular disease generally occur at the oldest age groups. Populations with a high number of older people will therefore have a higher crude (total number of cases divided by the total population) rate of a disease such as cancer than a population of predominantly younger people. Age-standardisation is a technique of adjusting rates of disease in a population to control for the effects of age. Consequently, the disease experience in two populations can be validly compared despite them having different population structures.

There are two commonly accepted methods for age standardisation. One method, called 'direct standardisation' multiplies the disease rates in each age group of a study population (eg, a region such as Auckland) by the population in a so-called standard population (eg, NZ). The alternative method, called 'indirect standardisation', multiplies the disease rates in each age group of a standard population (eg, NZ) by the population in each region (eg, Auckland) to give an expected number of cases.

Apart from a few regions, cervical cancer numbers are very small in statistical terms and any analysis should be interpreted with caution. In many regions the addition or subtraction of a single case can make a very large difference to the analysis.

The direct method is not robust when there are small numbers of cases in any of the age groups of a study population (eg, a region). In these circumstances, as for the analysis presented in this paper, the indirect method of standardisation is preferred. Indirectly standardised rates, presented here as ratios, can only be compared with the national average; they cannot be compared with ratios for other regions

Calculation Procedure for Standardised Cervical Cancer Registration Ratios (SRRs)

For the purposes of producing indirectly age-standardised ratios, standard age-specific rates were calculated by aggregating national registration data across the whole period 1990-1997 and applying them to the New Zealand populations at the 1996 Census. The standard rates were applied to regional populations in order to calculate expected numbers of registrations. The ratio of the observed numbers of cases to expected numbers cases was then calculated and expressed as a percentage, which we have called the Standardised Registration Ratio (SRR). SRRs greater than 100% are higher than the national average and SRRs below 100% are lower than the national average.

Confidence Intervals

The 95 percent confidence interval for each SRR was computed. The 95 percent confidence interval is a range of computed values that is likely to cover the true

population value. If a range of values above and below an SRR does not include 100 percent then we can say, with 95 percent confidence that the ratio is significantly different from the national average.

For example the SRR for Eastern Bay of Plenty in 1990-93 was 196.1 percent. The computed 95 percent confidence interval for the region was in a range from 126 percent to 293 percent. Because the range does not include 100 percent it is deemed to be significantly different from the national average.

APPENDIX 3

BETHESDA codes by broad cytological abnormality category used for the IMG-NCSP reports.

- (a) negative for dysplasia
- (b) abnormal not otherwise specified - C6
- (c) ASCUS, excluding ASCUS possible high grade - C3A1; C3A1A; C3A1B; C3A1C; C3A1D; C3A1F; C3A1G
- (d) LSIL - C3A2A; C3A2A1; C3A2A2; C3A2A3
- (e) AGUS favouring a reactive process - C3B2; C3B2A; C3B2B; C3B2B1; C3B2C; C3B2E
- (f) AGUS favouring a dysplastic process - C3B2A1; C3B2B2; C3B2D
- (g) ASCUS possible high grade - C3A1E
- (h) HSIL - C3A2B; C3A2B1; C3A2B2; C3A2B3; C3A2B4; C3A2B5; C3A2B6; C3A2B7
- (i) AIS - C3B3D; C3B3E; C3B3F
- (j) Adenocarcinoma of the cervix (not otherwise specified, endocervical & other) - C3B3; C3B3A; C3B3C; C3B3B
- (k) Cancer not otherwise specified - C3C; C4
- (l) Squamous Cancer - C3A3