

Quarterly Report 2

National Cervical Screening Programme

January – March 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 8 May 2001. This quarterly report was sent to the Ministry of Health on 26 October 2001.

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.

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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 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 the second report of the IMG-NCSP.

National Indicators for the NCSP, established by the NSU in 2000, provide the basis for monitoring reports produced by the IMG-NCSP. The frequency with which each National Indicator is reported varies. Indicators reported quarterly and 6-monthly are included in this report. Anonymous data for women enrolled on the NCSP-Register and the projected 2001 census data, provided by the NSU, were used to calculate the indicators.

At 31 March 2001, 984,460 women aged 20-69 years were enrolled on the NCSP-Register, which is 4641 more women than the number enrolled at 31 December 2000. This was 80.2% (91.2% hysterectomy-adjusted) of the estimated target 20-69 year old female population (1,227,545). The number of women aged 20-69 years who had had a smear recorded on the NCSP-Register in the previous 6 years was 933,704 (76.1% of the target population and 86.5% of the hysterectomy-adjusted target population). Population coverage, the proportion of women aged 20-69 years who had had a smear recorded on the NCSP-Register within the last 3 years, was 63.7% (72.5% hysterectomy-adjusted).

Enrolment, participation and coverage were lower amongst Maori and Pacific women when compared with all 'Other' women.

Short interval re-screening, which is a measure of excessive resource utilisation amongst women with a normal smear history, was estimated to be 25.8% this quarter. The level of short interval re-screening varied considerably amongst the regions.

There were 24,562 enrolled women with a history of HSIL or invasive carcinoma who had completed their treatment before 1 January 2000. Of these women, 76.9% had a smear within the 15 months to 31 March 2001.

For the 3,615 enrolled women who had high grade or more serious cytology reported between 1 April 1999 and 31 March 2000, 77.6% had an histology report recorded by the NCSP-Register within 12 weeks of their HSIL cytology report. There was no histology result on the NCSP-Register for only 27 of the 3,615 women.

The age-standardised cytology reporting rates per 1,000 women for ASCUS, LSIL and HSIL were 46.01, 27.65 and 11.21, respectively. The age-specific cytology reporting rates for these three abnormalities were highest for women aged 20-29 years, whereas the age-specific cytology reporting rates for squamous carcinoma of the cervix were highest for women aged 45-69 years.

The results for each laboratory reporting indicator varied considerably. This is likely to reflect regional differences in the prevalence of cervical abnormalities, population coverage by the programme, smear taking practice and laboratory reporting practice.

Overall 90.9% of smears reported were negative for ASCUS, AGUS, intraepithelial neoplasia or malignancy. The proportion of HSIL cytology reports predicting high grade abnormalities, for all laboratories, was 77.3%.

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. Efforts to minimise the number of enrolled women with more than one National Health Index number need to continue.
2. 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.
3. The new recruitment rate should not be included as a national indicator.
4. Efforts to collect required data from colposcopy clinics to calculate colposcopy waiting time indicators need to continue.

2.2 Service Issues

1. Efforts to increase enrolments of women in all 5-year age groups need continue, particularly in those NCSP regions and DHB areas with lower proportions of women enrolled in the NCSP – Wairarapa and the West Coast.
2. Efforts to increase enrolments of women in the 50-69 year old age group in all regions need to continue.
3. Efforts to increase enrolments of Maori and Pacific women in all 5-year age groups need to continue.
4. Efforts to increase the participation of women in all 5-year age groups in those NCSP regions and DHB areas where lower proportions of women were participating on the NCSP-Register, in particular Canterbury, the West Coast, Whanganui, South Auckland and Wairarapa need to continue.
5. Efforts to increase the participation of women in the 45-69 year old age group in all regions need to continue.
6. Efforts to increase the participation of Maori and Pacific women in all 5-year age groups need to continue.

7. Efforts to improve coverage in all 5-year age groups in those areas with lower coverage rates, in particular Northland, South Auckland, Wairarapa West Coast and Whanganui need to continue.
8. Efforts to improve coverage in all age groups, but particularly in the 45-69 year old age groups in all areas need to continue.
9. Efforts to improve coverage amongst all ethnic groups, but particularly amongst Maori and Pacific women need to continue.
10. Reasons for low coverage, particularly amongst Maori and Pacific women, need further investigation.
11. Reasons for non-participation need to be assessed.
12. Efforts to reduce the non-participation rate in all regions need to continue.
13. Efforts to encourage re-participation need to continue in all NCSP regions, particularly for Pacific women.
14. 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 Capital Coast).
15. 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.
16. Reasons why women with a history of a high grade abnormality whose last smear was more than 18 months overdue ago need to be examined.
17. Reasons why 382 women with a history of a high grade abnormality have no follow up smear results recorded in the NCSP-Register need to be examined.
18. Efforts to encourage women with a history of a high grade abnormality to have annual smears need to continue.
19. 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.
20. Reasons why no histology result was recorded by the NCSP-Register for 26 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.
21. The type of histology results recorded by the NCSP-Register as 'Other' should be examined.

22. An investigation of the outcome of women with ASCUS cytology results should be undertaken.
23. Explanations for the relatively high level of total abnormalities reported should be sought from Medlab Bay of Plenty, Medlab Hamilton and Pathlab Waikato.
24. Reasons for long smear reporting times should be sought from those laboratories who did not reach the targets, in particular Auckland Hospital Laboratory, Medlab Hamilton and Medlab Bay of Plenty.
25. Reasons for the wide variation and high level of reporting, of satisfactory but limited smears need to be examined.
26. Reasons why women with HSIL cytology are waiting more than four weeks for a colposcopic assessment should be sought from Pacific Health Whakatane and Health Waikato.
27. Efforts to reduce the number of women with HSIL cytology waiting more than four weeks for a colposcopic assessment should continue.
28. Reasons why women with LSIL cytology waited for more than 26 weeks for a colposcopic assessment should be sought from South Auckland Health, Health Waikato and Healthcare Hawkes Bay.
29. Efforts to reduce the number of women with LSIL cytology waiting more than 26 weeks for a colposcopic assessment should continue.
30. Reasons for the variation in the proportion of satisfactory but limited smears between smear taker groups 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 2000¹. 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. In the future, when more information is available, indicator targets may be changed. Also, new indicators may be developed. The agreed reporting frequency of National Indicators varies. This report includes indicators that are calculated quarterly and 6-monthly. In this report, those indicators that will be calculated annually are listed along with their reporting frequency. Each indicator and how it is calculated, is described in the results section under the separate headings that identify the specific indicators.

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

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 belonging to the Maori and Pacific ethnic groups on the NCSP-Register, respectively. For the purposes of this report, all women who were not recorded as being either Maori or Pacific on the NCSP were grouped together as 'Other'. This group includes those women for whom their ethnic group was unknown².

During the preparation of this report the Ministry of Health discovered an error in the extraction of smear results from the NCSP-Register for the IMG for women in the Northland region. The results were correctly recorded on the NCSP-Register but were misclassified during the extraction process. A further set of data from the NCSP-Register was provided, but this set of data did not include details of ethnicity. For the preparation of most of this report the second set of data was used. For those tables detailing ethnicity, the first set of data was used. These tables are marked by a footnote. Because two sets of data were used to prepare this report, the totals in the tables in some sections of this report do not match. The differences in totals are very small. The impact of this discrepancy is likely to be minor and have little effect on the recommendations of the report.

For the calculation of many indicators, it was necessary to use the estimated number of 20-69 year old women usually resident in New Zealand. The NSU of the MoH provided these population data. The projected population for the year 2001 was used. 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. While the true population in 2001 was not known, for the purposes of this report it was decided that using the estimated 2001 population was more likely to produce results which reflected the current situation than the 1996 census data. It is

¹ National Cervical Screening Programme Interim Operational and Quality Standards. October 2000. National Screening Team, Health Funding Authority.

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).

acknowledged that by using the estimated 2001 population data, some results in this report may be higher and others may be lower than the real situation. However, any such discrepancies are likely to be small.

Because most women who have had a hysterectomy have not had cervical dysplasia or neoplasia, they no longer require smears³. 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 all 20-69 year old New Zealand women by 5-year age groups. While it is likely that there are regional 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 recommended⁴.

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

The NCSP was established in 1990 and the current reporting quarter ended on 31 March 2001. This report includes results for the national indicators reported quarterly and 6-monthly. For each indicator, the indicator is defined, the target, if any, is stated and how the indicator was calculated is explained. The level of detail reported for each indicator varies.

For some indicators, results 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 some of these match. They are Hawkes Bay, Nelson/Marlborough, Northland, Otago, Tairāwhiti, Taranaki, Southland, Waikato and West Coast.

4.1 Enrolment of women

Definition

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

Target

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

Calculation

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

Results

Overall, there was a high level of enrolment particularly when the population was adjusted for the prevalence of hysterectomy. 984,460 women aged 20-69 years were enrolled. This was 80.2% of the unadjusted target population and 91.2% of 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 are similar to those in Report 1. The proportion of all 20-69 year old women enrolled in each NCSP region ranged from 71.2% in the West Coast to 87.0% in Wellington, and from 81.8% to 98.3%, respectively, when adjusted for hysterectomy.

Table 2 shows the proportion of 20-69 year old women enrolled by 5-year age group for each DHB area. For 9482 women, the DHB area where they reside were unspecified on

the NCSP-Register (data not shown)⁵. Enrolment amongst the DHB areas ranged from 71.2% for the West Coast to 88.7% for Capital Coast, and from 81.8% to 99.7%, respectively, when adjusted for hysterectomy.

The proportion of women enrolled in each 5-year age group varied. The overall patterns were similar to those observed in the first report. 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 for these age groups in most NCSP regions and DHB areas. The West Coast had lower levels of enrolment (less than 85%) amongst these age groups compared with other areas. Enrolment for all 20-24 year old women was 71.3% and amongst the NCSP regions it ranged from 61.6% in the West Coast to 84.8% in Tairāwhiti. Amongst the DHB areas Wairarapa had the lowest enrolment for 20-24 year old women (60.2%). Enrolment declined with increasing age from 77.9% for all 45-49 year old women to 52.0% 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 was higher for 'Other' women. The proportions of 20-69 year old women enrolled for Maori, 'Other' and Pacific women were 65.9%, 83.3% and 71.2%, respectively. Enrolments after adjustment for hysterectomy were 72.5%, 95.5% and 78.2%, respectively. As was observed for the NCSP regions and DHB areas, 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 groups for each ethnic group. Enrolment was about 50% or less amongst Maori and Pacific women aged 55-69 years.

Tables 1, 2 and 3 show that the estimated proportion of women enrolled for some 5-year age groups was greater than 100%. When the proportions for the 5-year age groups were adjusted for hysterectomy, estimated enrolment was much more likely to exceed 100% (data not shown). It is most unlikely that all women for whom screening is recommended in a particular 5-year age group in a particular NCSP region or DHB area are enrolled on the NCSP-Register because, it is known that some women opt not to enrol on the NCSP-Register when they have their cervical smears. Also opt-off rates are likely to vary throughout New Zealand. An estimate of opt-off rates will be reported in the annual reports of the Independent Monitoring Group.

There are several possible reasons for some enrolment proportions being greater than 100% and some proportions possibly being higher than the true situation. One reason is that some individual women are enrolled on the NCSP-Register more than once, because they have been assigned more than one National Health Index (NHI) number. Multiple NHI numbers for individual women can arise when women change their surname, or return to New Zealand after living overseas for a period of time, or are issued a new NHI number by different health providers. Another possible reason is that some women for whom routine screening is no longer recommended may be incorrectly classified as still actively participating on the NCSP-Register. This group of women includes those who now live overseas, those who have died, and those who have had a total hysterectomy for a benign condition and have a normal smear history. A third possible reason for proportions of women enrolled being more than 100% is that the projected year 2001 population used

⁵ See Methods section.

to calculate these proportions may be less than the true population in 2001. The significance of these factors may vary between regions, and as a result may contribute to the regional variation in enrolments.

RECOMMENDATIONS

Data Issues

1. Efforts to minimise the number of enrolled women with more than one National Health Index number need to continue.
2. 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

1. Efforts to increase enrolments of women in all 5-year age groups need continue, particularly in those NCSP regions and DHB areas with lower proportions of women enrolled in the NCSP – Wairarapa and the West Coast.
2. Efforts to increase enrolments of women in the 50-69 year old age group in all regions need to continue.
3. 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.

NCSP region	Age group (years)										Total 20- 69	Total (hysterect omy- adjusted)
	20- 24	25- 29	30- 34	35- 39	40- 44	45- 49	50- 54	55- 59	60- 64	65- 69		
Auckland	66.9	94.6	98.8	93.8	85.8	78.1	69.3	62.0	55.6	48.0	80.1	90.4
Bay of Plenty	83.2	104.5	100.4	96.3	89.4	79.3	69.9	62.6	57.2	52.7	82.3	94.6
Canterbury	73.4	93.9	96.2	93.3	84.7	75.0	66.7	59.1	52.6	47.0	77.7	88.6
Hawkes Bay	69.6	94.9	89.1	90.3	80.5	73.4	64.5	60.8	56.4	52.7	75.4	86.7
Manawatu/ Wanganui	70.1	90.5	93.2	91.8	85.1	75.3	67.0	62.2	59.2	54.8	77.5	88.3
Nelson/ Marlborough	72.1	95.5	92.0	92.3	86.2	77.2	70.5	63.3	55.8	54.6	78.5	90.5
Northland	71.2	92.0	92.1	91.0	86.0	78.1	70.4	63.2	58.9	55.2	77.8	89.9
Otago	72.3	90.4	93.7	92.8	85.0	77.9	69.8	67.3	59.8	58.3	78.8	89.6
Southland	65.6	97.0	94.1	90.0	85.6	77.1	71.5	65.2	63.7	55.8	79.4	90.4
Tairāwhiti	84.8	100.2	99.5	95.5	82.9	77.3	70.	65.9	59.1	53.8	82.0	93.7
Taranaki	77.0	103.3	96.9	95.5	86.6	82.8	75.0	70.7	69.2	63.4	84.0	96.4
Waikato	71.1	93.9	96.1	93.3	86.8	78.9	70.0	63.7	58.6	54.7	79.8	90.8
Wellington	75.2	107.5	107.2	100.2	91.4	82.3	74.4	67.6	62.5	54.3	87.0	98.3
West Coast	61.6	78.4	82.5	83.2	79.4	72.0	65.6	59.2	55.6	49.8	71.2	81.8
Total	71.3	96.3	97.8	94.1	86.3	77.9	69.6	63.0	57.6	52.0	80.2	91.2

Table 2. The proportion (%) of women aged 20-69 years by 5-year age group enrolled in each DHB area.

District Health Board	Age group (years)										Total 20-69	Total 20-69 (hysterectomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Auckland	61.3	99.0	100.8	94.5	83.9	78.2	71.0	62.4	56.7	47.3	81.2	90.9
Bay of Plenty	78.9	102.5	98.9	94.6	89.1	78.8	67.7	63.1	56.6	53.0	80.4	92.9
Canterbury	71.7	92.0	95.3	92.8	83.9	74.2	65.7	58.3	51.5	46.2	76.9	87.5
Capital Coast	74.7	109.8	108.3	100.4	93.4	84.4	75.8	68.1	63.1	54.9	88.7	99.7
Hawkes Bay	69.6	94.9	89.1	90.3	80.5	73.4	64.5	60.8	56.4	52.7	75.4	86.7
Hutt	72.8	97.2	102.0	97.7	88.8	80.0	71.2	66.8	63.1	55.5	83.3	94.5
Lakes	85.9	102.9	99.3	96.4	88.0	78.2	71.6	60.1	57.3	50.6	83.1	94.6
Manawatu	68.0	86.3	90.0	89.9	84.0	74.1	66.3	61.6	58.2	55.5	75.9	86.2
Nelson/ Marlborough	72.1	95.5	92.0	92.3	86.2	77.2	70.5	63.3	55.8	54.6	78.5	90.5
North West Auckland	65.2	86.6	95.1	89.9	84.5	75.9	67.7	61.0	55.7	48.4	76.9	87.4
Northland	71.2	92.0	92.1	91.0	86.0	78.1	70.4	63.2	58.9	55.2	77.8	89.9
Otago	72.3	90.4	93.7	92.8	85.0	77.9	69.8	67.3	59.8	58.3	78.8	89.6
South Auckland	70.8	93.2	96.6	93.8	86.4	77.4	67.2	60.2	52.3	46.6	79.2	89.5
South Canterbury	70.6	96.3	93.5	90.7	85.9	77.7	70.3	61.6	58.4	50.2	77.1	89.6
Southland	65.6	97.0	94.1	90.0	85.6	77.1	71.5	65.2	63.7	55.8	79.4	90.4
Tairāwhiti	84.8	100.2	99.5	95.5	82.9	77.3	70.7	65.9	59.1	53.8	82.0	93.7
Taranaki	77.0	103.3	96.9	95.5	86.6	82.8	75.0	70.7	69.2	63.4	84.0	96.3
Waikato	71.1	93.9	96.1	93.3	86.8	78.9	70.0	63.7	58.6	54.7	79.8	90.8
Wairarapa	60.2	94.4	91.4	90.4	76.8	68.0	68.4	58.9	52.2	44.3	72.0	83.5
West Coast	61.6	78.4	82.5	83.2	79.4	72.0	65.6	59.2	55.6	49.8	71.2	81.8
Whanganui	64.3	88.4	92.8	90.1	83.1	74.5	66.2	59.7	59.7	51.6	75.4	86.4

Total	71.3	96.3	97.8	94.1	86.3	77.9	69.6	63.0	57.6	52.0	80.2	91.2
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Table 3. The proportion (%) of women aged 20-69 years by 5-year age group enrolled for each specified ethnic group*.

Ethnic Group	Age group (years)										Total 20-69	Total (hysterectomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Maori	60.5	78.1	79.1	75	67.4	58	50.3	46.6	43.7	40.8	65.9	72.5
Other	76.7	102.2	102.3	98.1	90	81.4	72.4	65.3	59.4	53.6	83.3	95.5
Pacific	48.2	80.9	93.1	87.6	78.2	65.9	57	50.6	49.2	38.1	71.2	78.2
Total	71.4	96.6	98.1	94.3	86.6	78.2	69.9	63.2	57.8	52.3	80.4	91.5

* Different set of data used (see Methods).

4.2 Participation of women

Definition

Participation refers to the proportion of 20-69 year old alive women, not living overseas, who have had a smear recorded on the NCSP-Register within the previous 6 years. For this reporting quarter, the 6-year period was 1 April 1995 to 31 March 2001.

Targets

The targets for participation are 85% for the unadjusted population and 90% for the hysterectomy-adjusted population.

Calculation

The number of enrolled women aged 20-69 years with a smear recorded on the NCSP-Register in the past 6 years was calculated. This was expressed as a proportion of the estimated unadjusted and hysterectomy-adjusted populations.

Results

Overall, as reported for the last quarter, participation rates for all 20-69 year old women were below the current targets for both the unadjusted and adjusted populations. 933,704 women had had a smear recorded on the NCSP-Register during the 6-year period to 31 March 2001. This was 76.1% of the unadjusted 20-69 year old population and 86.5% of the hysterectomy-adjusted population.

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 target for the unadjusted total 20-69 year old population was not reached in any of the NCSP regions. These participation rates ranged from 68.1% in the West Coast to 82.8% in Wellington.

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 8,368 participating women, the DHB area where they reside were unspecified⁶. Amongst the DHB areas, participation rates for the unadjusted total 20-69 year old population ranged from 68.1% in the West Coast to 84.3% in Capital Coast. When the 20-69 year old population was adjusted for hysterectomy prevalence, the 90% target was reached in several NCSP regions and DHB areas - Tairāwhiti (90.9%), Taranaki (92.8%), Wellington (93.5%), Capital Coast (94.8%) and Hutt (90.2%).

For each NCSP region and DHB area, the participation rates for the unadjusted 20-69 year old population were about 10% lower than those for the hysterectomy-adjusted 20-69 year old population. However, there is only a 5% difference between the unadjusted and hysterectomy-adjusted targets.

Overall, participation rates were highest, 80% or more, for the 25-44 year old age groups. For the 45-69 year age group, participation rates declined from 73.8% for the 45-49 year age group to 49.4% for the 65-69 year age group. While a relatively low proportion of 20-24 year old women (70.4%) had had a smear within the previous 6 years, there was little

⁶ See Methods section.

difference between this proportion and the proportion of 20-24 year old women enrolled (71.3%). These overall patterns were 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 20-54 years and Canterbury for women aged 55-69 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, lower participation rates amongst the 5-year age groups were observed in the Wairarapa, the West Coast, Whanganui and South Auckland, and higher participation rates were observed for Capital Coast and Taranaki.

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. Overall, participation was lower amongst Maori and Pacific women. For 20-69 year old women the unadjusted participation rates were 60.5%, 79.5% and 63.3% for Maori, 'Other' and Pacific women, respectively. When adjusted for hysterectomy prevalence, participation rates were 66.5%, 91.2% and 69.4% for Maori, 'Other' and Pacific women, respectively. For each of the three ethnic groups, participation was 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 were 37.3%, 51.1% and 32.5% for Maori, 'Other' and Pacific women, respectively.

The calculated participation rates for women aged 25-34 years in the Wellington NCSP region were greater than 100% (Table 4). This also occurred when the participation rates was calculated for the same age groups for the Capital Coast DHB area (Table 5). When the 5-year age group populations were adjusted for hysterectomy (data not shown), rates greater than 100% were also observed for the 35-39 year age group in both the Wellington NCSP region and Capital Coast DHB area. Possible reasons for these rates being greater than 100% are the same as those given previously for higher than expected enrolments.

RECOMMENDATIONS

Data Issues

As for section 4.1

Service Issues

1. Efforts to increase the participation of women in all 5-year age groups in those NCSP regions and DHB areas where lower proportions of women were participating on the NCSP-Register, in particular Canterbury, the West Coast, Whanganui, South Auckland and Wairarapa need to continue.
2. Efforts to increase the participation of women in the 45-69 year old age group in all regions need to continue.

3. Efforts to increase the participation of Maori and Pacific women in all 5-year age groups need to continue.

Table 4. The proportion (%) of 20-69 year old women participating in the NCSP by 5-year age groups for each NCSP region.

NCSP region	Age group (years)										Total 20-69	Total (hysterectomy- adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Auckland	66.0	89.2	92.0	87.4	80.1	73.0	64.9	57.9	51.8	44.7	75.2	84.9
Bay of Plenty	81.8	98.5	94.7	90.9	84.4	75.5	66.4	59.5	54.6	50.2	78.2	89.9
Canterbury	72.6	89.1	91.3	89.1	80.4	71.5	63.5	56.1	50.1	44.5	74.1	84.6
Hawkes Bay	68.5	90.1	84.8	86.7	77.0	70.7	61.9	58.9	54.5	50.8	72.4	83.3
Manawatu/ Wanganui	69.4	85.0	87.3	86.6	80.4	71.1	63.8	58.9	57.1	52.2	73.6	83.9
Nelson/ Marlborough	71.4	90.1	86.8	87.8	82.3	73.5	68.0	60.7	53.9	52.5	75.0	86.5
Northland	69.7	85.5	85.5	84.1	79.6	72.8	66.7	59.4	55.5	51.9	72.8	84.1
Otago	72.0	84.6	88.3	89.3	81.8	75.2	67.6	65.6	57.9	56.7	75.9	86.3
Southland	65.0	92.4	89.3	86.1	82.0	73.7	68.5	62.3	60.5	53.2	76.0	86.6
Tairāwhiti	84.0	96.2	95.4	92.0	80.4	75.3	68.4	64.1	57.7	53.4	79.5	90.9
Taranaki	76.4	98.4	92.6	91.6	83.1	79.3	72.6	68.3	67.1	61.5	80.9	92.8
Waikato	70.1	87.7	89.8	87.8	81.9	74.6	66.4	60.5	56.1	52.3	75.6	86.0
Wellington	74.6	102.2	100.5	94.9	86.4	78.2	70.9	64.3	59.5	52.0	82.8	93.5
West Coast	61.2	74.6	79.7	80.1	75.0	68.7	61.9	56.3	52.4	47.1	68.1	78.2
Total	70.4	90.9	91.8	88.7	81.4	73.8	66.0	59.8	54.7	49.4	76.1	86.5

Table 5. The proportion (%) of women aged 20-69 years by 5-year age group participating in each DHB area.

District Health Board	Age group (years)										Total 20-69	Total (hysterectomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Auckland	60.5	93.3	93.3	87.6	78.0	73.1	66.5	58.3	52.5	44.0	76.0	85.1
Bay of Plenty	77.8	96.8	93.7	89.9	84.	75.2	64.9	60.3	54.4	50.8	76.7	88.6
Canterbury	71.1	87.7	90.7	88.8	79.8	70.9	62.7	55.5	49.2	43.8	73.6	83.8
Capital Coast	74.2	104.6	101.4	94.8	88.1	80.1	72.2	64.5	59.6	52.4	84.3	94.8
Hawkes Bay	68.5	90.1	84.8	86.7	77.0	70.7	61.9	58.9	54.5	50.8	72.4	83.3
Hutt	72.1	92.4	96.2	93.0	84.2	76.3	67.6	63.7	60.5	53.5	79.5	90.2
Lakes	84.2	97.0	93.4	90.6	82.5	74.1	67.2	56.8	53.9	47.8	78.5	89.4
Manawatu	67.4	81.7	85.1	85.6	79.7	70.7	63.8	59.1	56.4	53.3	72.6	82.5
Nelson/ Marlborough	71.4	90.1	86.8	87.8	82.3	73.5	68.0	60.7	53.9	52.5	75.0	86.5
North West Auckland	64.5	81.5	89.6	85.0	79.7	71.7	63.8	57.3	52.4	45.6	72.7	82.7
Northland	69.7	85.5	85.5	84.1	79.6	72.8	66.7	59.4	55.5	51.9	72.8	84.1
Otago	72.0	84.6	88.3	89.3	81.8	75.2	67.6	65.6	57.9	56.7	75.9	86.3
South Auckland	69.6	88.2	89.3	86.6	80.2	71.9	62.4	55.8	48.5	42.8	74.0	83.7
South Canterbury	69.8	90.3	88.4	86.7	81.5	73.5	67.2	58.7	55.2	47.5	73.3	85.2
Southland	65.0	92.4	89.3	86.1	82.0	73.7	68.5	62.3	60.5	53.2	76.0	86.6
Tairāwhiti	84.0	96.2	95.4	92.0	80.4	75.3	68.4	64.1	57.7	53.4	79.5	90.9
Taranaki	76.4	98.4	92.6	91.6	83.1	79.3	72.6	68.3	67.1	61.5	80.9	92.8
Waikato	70.1	87.7	89.8	87.8	81.9	74.6	66.4	60.5	56.1	52.3	75.6	86.0
Wairarapa	58.8	88.0	86.1	86.4	72.6	64.9	65.3	56.9	50.6	42.9	68.6	79.6
West Coast	61.2	74.6	79.7	80.1	75.0	68.7	61.9	56.3	52.4	47.1	68.1	78.2
Whanganui	63.3	83.0	85.9	84.3	78.5	69.5	61.9	55.4	57.3	48.4	71.0	81.3
Total	70.4	90.9	91.8	88.7	81.4	73.8	66.0	59.8	54.7	49.4	76.1	86.5

Number of unspecified†	1,524	1,635	1,335	1,088	774	655	532	412	260	153	8,368	
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† See Methods section.

Table 6. The proportion (%) of women aged 20-69 years by 5-year age group participating for each specified ethnic group*.

Ethnic Group	Age group (years)										Total 20-69	Total (hysterectomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Maori	59.2	72.3	71.8	67.7	60.4	52.2	45.7	41.9	39.4	37.3	60.5	66.5
Other	76.0	96.9	96.8	93.5	85.7	77.7	69.0	62.3	56.7	51.1	79.5	91.2
Pacific	47.3	75.0	82.0	75.6	67.0	55.9	49.4	43.0	42.6	32.5	63.3	69.4
Total	70.5	91.2	92.0	88.9	81.6	74.0	66.2	59.9	54.9	49.6	76.3	86.8

* Different set of data used (see Methods).

4.3 Coverage of women

Definition

Coverage is the proportion of 20-69 year old alive women who have had a cervical smear recorded on the NCSP-Register in the 36 months prior to the end of the quarter. The 36-month period for this reporting quarter was 1 April 1998 to 31 March 2001. A 36-month period was used because this is the recommended cervical screening interval for women in New Zealand. Also, international comparisons will be possible.

Targets

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

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 as a proportion of the estimated unadjusted and hysterectomy-adjusted populations.

Results

Coverage for the total 20-69 year old population was 63.7% for the unadjusted population and 72.5% for the hysterectomy-adjusted population. These proportions were similar to that reported for the last quarter (64.4% and 73.1%, respectively) and lower than the recommended targets of 80% for the unadjusted population and 85% for the hysterectomy-adjusted population.

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. Overall these results for this quarter were similar to those for the October-December 2000 reporting quarter. The targets were not reached in any of the NCSP regions for the total 20-69 year old age group. Amongst the regions, coverage for the 20-69 year old population was highest in Tairāwhiti (71.1% unadjusted and 81.2% when adjusted for hysterectomy prevalence) and lowest in the West Coast (57.6% unadjusted and 66.2% 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 region. For the total 20-69 year old age group, the targets for both the unadjusted and hysterectomy-adjusted populations were 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 Tairāwhiti and lowest in the West Coast.

As was observed in Report 1, for each NCSP region and for each DHB area there was a difference in coverage of about 8% or more between the unadjusted total 20-69 year old population and the hysterectomy-adjusted total 20-69 year old population. However, there is only a 5% difference between the unadjusted and hysterectomy-adjusted targets.

For the 5-year age groups, higher levels of coverage were observed amongst the 25-39 year old age groups. This pattern was also observed in each of the NCSP regions and DHB areas. For the total 25-39 year old age groups, coverage was more than 70%, but this level

was not always reached in each NCSP region or DHB area. This was most apparent for Northland, the West Coast and Whanganui.

When compared to the 25-44 year old age groups, coverage for the 20-24 year old age group was lower. For the total 20-24 year age group coverage was 61.1%. Amongst the NCSP regions it ranged from 53.2% in the West Coast to 74.0% in Tairāwhiti (Table 7), and amongst the DHB areas it ranged from 51.0% in the Wairarapa to 74.0% in Tairāwhiti (Table 8).

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 New Zealand as a whole and in each of the NCSP regions and DHB areas. A similar pattern was also observed for enrolments and participation. For the 65-69 year old age group, coverage was less than 50% for the total population and in most NCSP regions and DHB areas. The exceptions were Otago and Taranaki, where the coverage for this age group was 50.8% and 55.4%, respectively. For this age group particularly low coverage was observed for Auckland (36.0%), Canterbury (36.8%), and South Auckland (35.3%).

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. For all 20-69 year old women coverage amongst Māori and Pacific women was about 20% less than for 'Other' women. The unadjusted coverage was 46.3%, 67.7% and 45.4% for Māori, 'Other' and Pacific 20-69 year old women, respectively. When adjusted for hysterectomy prevalence, coverage for each of these three groups was 50.9%, 77.6% and 49.8%, respectively.

For each of the three ethnic groups, coverage was relatively higher amongst 25-44 year old women and it was the lowest for 65-69 year old women. For Māori and Pacific women coverage was 40% or less for women aged 45-69 years. The lowest coverage amongst the 5-year age groups was for 65-69 year old Pacific women, for whom it was 24.2%.

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, coverage for 'Other' women was higher than that for both Māori and Pacific women. Amongst DHB areas, coverage for each of the three specified ethnic groups varied considerably. Coverage for 'Other' women ranged from 59.7% for the West Coast DHB area to 76.5% for the Capital Coast DHB area. For Māori women coverage ranged from 34.3% for the Southland DHB area to 67.4% for the Tairāwhiti DHB area. For Pacific women coverage ranged from 27.9% for the Wairarapa DHB area to 67.1% for the South Canterbury DHB area.

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 under-enumeration of coverage for Māori and Pacific women.

Women having smears less frequently than 3-yearly is the most likely reason for coverage being less than the targets. An overestimate of the target population will have resulted in coverage being underestimated. On the other hand, if the estimated denominator

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

population was less than the true population, coverage will have been overestimated. Also, individual women enrolled on the NCSP-Register more than once because they have more than one National Health Index (NHI) number and who are having smears more frequently than 3-yearly, and the inclusion of women classified as actively participating in screening on the NCSP-Register for whom routine screening is no longer recommended will have resulted in coverage being overestimated. It is unknown how many women to whom these issues apply.

RECOMMENDATIONS

Data Issues

As for section 4.1

Service Issues

1. Efforts to improve coverage in all 5-year age groups in those areas with lower coverage rates, in particular Northland, South Auckland, Wairarapa, West Coast and Whanganui need to continue.
2. Efforts to improve coverage in all age groups, but particularly in the 45-69 year old age groups in all areas need to continue.
3. Efforts to improve coverage amongst all ethnic groups, but particularly amongst Maori and Pacific women need to continue.
4. The reasons for low coverage, particularly amongst Maori and Pacific women, needs further investigation.

Table 7. The proportion (%) of 20-69 year-old women screened in the previous 36 months by 5-year age groups for each NCSP region.

NCSP Region	Age group (years) (%)										Total 20-69	Total (hysterectomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Auckland	56.5	69.6	73.0	69.9	65.3	60.7	54.3	48.6	43.3	36.9	61.2	69.1
Bay of Plenty	69.4	80.4	77.7	76.3	71.9	65.1	58.1	52.2	48.6	43.5	66.3	76.2
Canterbury	64.3	72.5	77.3	76.1	68.5	61.5	55.5	48.4	43.1	37.2	63.2	72.2
Hawkes Bay	58.9	73.7	71.1	73.4	65.4	61.3	54.5	52.3	48.5	45.2	62.0	71.3
Manawatu/Wanganui	60.1	67.3	72.1	72.2	67.8	60.6	54.8	51.2	49.0	44.7	61.9	70.5
Nelson/Marlborough	61.2	73.5	72.9	75.8	71.0	64.3	59.4	53.7	48.1	46.8	64.6	74.4
Northland	57.0	66.7	69.1	69.4	65.3	60.5	57.8	50.8	47.2	43.6	60.1	69.5
Otago	64.9	67.6	76.8	77.9	72.1	67.3	61.3	59.7	52.5	50.8	66.7	75.8
Southland	57.6	74.3	74.2	72.5	70.1	63.5	58.5	53.6	53.1	44.8	64.4	73.4
Tairāwhiti	74.0	83.6	82.8	81.3	73.0	68.8	62.0	59.2	53.0	48.9	71.1	81.2
Taranaki	66.3	81.9	79.5	79.9	72.5	69.1	64.4	60.4	59.6	55.4	70.4	80.7
Waikato	60.5	68.7	72.8	72.6	67.9	63.0	57.2	52.2	48.9	44.9	63.0	71.7
Wellington	66.3	82.8	83.4	79.1	72.8	66.9	60.8	55.5	50.8	44.7	69.8	78.9
West Coast	53.2	60.8	63.6	67.8	63.5	59.6	53.7	49.4	45.3	40.5	57.6	66.2
Total	61.1	72.5	75.2	73.6	68.3	62.8	56.8	51.5	47.2	42.2	63.7	72.5

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.

District Health Board	Age group (years)										Total 20-69	Total (hysterec tomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Auckland	52.3	72.5	73.4	69.4	63.6	60.4	55.6	49.1	44.5	36.0	61.6	69.0
Bay of Plenty	66.3	79.5	77.7	76.1	72.9	64.9	57.2	53.2	48.7	44.4	65.6	75.8
Canterbury	62.9	71.6	77.2	76.0	68.3	61.3	54.9	48.1	42.4	36.8	62.9	71.7
Capital Coast	66.8	84.5	84.4	79.9	74.9	69.5	62.7	56.3	51.3	45.2	71.6	80.5
Hawkes Bay	58.9	73.7	71.1	73.4	65.4	61.3	54.5	52.3	48.5	45.2	62.0	71.3
Hutt	62.8	75.5	79.3	76.3	70.1	64.0	57.0	54.2	51.3	45.5	66.4	75.3
Lakes	71.1	78.9	75.6	75.2	69.2	63.9	58.5	49.1	47.8	40.9	65.9	75.0
Manawatu	59.2	66.0	71.3	71.8	67.8	61.0	55.4	51.8	48.6	46.2	61.8	70.2
Nelson/ Marlborough	61.2	73.5	72.9	75.8	71.0	64.3	59.4	53.7	48.1	46.8	64.6	74.4
North West Auckland	55.8	64.7	73.0	69.9	65.9	60.8	53.9	48.3	44.5	38.1	60.3	68.6
Northland	57.0	66.7	69.1	69.4	65.3	60.5	57.8	50.8	47.2	43.6	60.1	69.5
Otago	64.9	67.6	76.8	77.9	72.1	67.3	61.3	59.7	52.5	50.8	66.7	75.8
South Auckland	59.0	68.7	70.1	68.6	64.8	58.9	52.1	46.7	39.7	35.3	59.7	67.6
South Canterbury	61.2	74.5	73.6	73.7	67.8	61.3	58.0	49.3	46.8	38.8	61.7	71.7
Southland	57.6	74.3	74.2	72.5	70.1	63.5	58.5	53.6	53.1	44.8	64.4	73.4
Tairāwhiti	74.0	83.6	82.8	81.3	73.0	68.8	62.0	59.2	53.0	48.9	71.1	81.2
Taranaki	66.3	81.9	79.5	79.9	72.5	69.1	64.4	60.4	59.6	55.4	70.4	80.7
Waikato	60.5	68.7	72.8	72.6	67.9	63.0	57.2	52.2	48.9	44.9	63.0	71.7
Wairarapa	51.0	72.8	74.2	71.5	61.1	54.5	55.6	48.9	42.2	37.3	58.0	67.3
West Coast	53.2	60.8	63.6	67.8	63.5	59.6	53.7	49.4	45.3	40.5	57.6	66.2
Whanganui	53.1	64.9	69.8	69.8	65.7	57.9	51.9	47.8	49.0	40.7	58.8	67.4
Total	61.1	72.5	75.2	73.6	68.3	62.8	56.8	51.5	47.2	42.2	63.7	72.5



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*.

Ethnic Group	Age group (years)										Total 20-69	Total (hysterectomy-adjusted)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69		
Maori	48.1	54.7	53.3	50.4	45.6	39.9	35.6	33.2	31.5	29.6	46.3	50.9
Other	67.1	78.5	81.1	79.1	73.0	66.9	59.9	54.0	49.2	43.7	67.7	77.6
Pacific	38.0	53.1	55.9	52.4	46.6	40.9	36.7	32.0	32.0	24.2	45.4	49.8
Total	61.2	72.6	75.3	73.6	68.3	62.9	56.9	51.6	47.3	42.3	63.8	72.6

* Different set of data used (see Methods).

Table 10. The proportion (%) of women aged 20-69 years screened in the previous 36 months by ethnicity for each DHB area*.

District Health Board	Ethnic Group			Total 20-69 years
	Maori	Other	Pacific	
Auckland	40.2	66.1	44.4	61.7
Bay of Plenty	47.5	70.7	44.6	65.2
Canterbury	34.9	65.2	45.6	63.1
Capital Coast	50.6	76.5	39.6	71.6
Hawkes Bay	50.0	65.6	51.4	62.1
Hutt	53.2	70.4	44.8	66.6
Lakes	50.7	72.8	42.1	65.5
Manawatu	48.7	64.0	46.7	61.7
Nelson/ Marlborough	37.0	67.0	52.2	64.7
North West Auckland	40.2	63.2	43.1	60.3
Northland	51.3	64.1	31.0	60.2
Otago	38.4	68.7	53.0	67.0
South Auckland	47.7	64.1	51.9	59.7
South Canterbury	34.4	63.2	67.1	61.8
Southland	34.3	67.6	50.9	64.5
Tairāwhiti	67.4	74.6	61.8	71.5
Taranaki	52.0	73.6	29.1	70.5
Waikato	46.5	67.2	46.7	63.0
Wairarapa	37.4	62.0	27.9	58.0
West Coast	37.0	59.7	33.3	57.8
Whanganui	49.7	61.5	40.4	58.8
Total	47.2	67.4	46.5	63.8

Number unspecified†	637	5,055	91	5,783
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† See Methods section.

4.4 Women enrolled on the register but not currently participating

Definition

Non-participants are women enrolled on the NCSP-Register who are alive, not living overseas, and have not had a smear recorded on the NCSP-Register in the 6 years prior to the end of the quarter.

Target

There is no target for this indicator.

Calculation

This is calculated as the difference between the number of 25-69 year old women enrolled (section 4.1) and the number of 25-69 year old women participating (section 4.2) expressed both as a proportion of the estimated 25-69 year old unadjusted and of the 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 who had not had a smear recorded on the NCSP-Register in the previous 6 years to 31 March 2001 was 4.5% for the unadjusted population and 5.2% for the hysterectomy-adjusted population. These proportions are slightly higher than those reported for the October-December 2000 quarterly report, which were 4.2% for the unadjusted population and 4.8% for the hysterectomy-adjusted population.

Amongst the NCSP regions, the lowest non-participation rates for all 25-69 year old women were observed in Tairāwhiti (2.7% for the unadjusted population and 3.1% when adjusted for hysterectomy prevalence) and the highest non-participation rates were observed in Auckland (5.4% for the unadjusted population and 6.1% when adjusted for hysterectomy prevalence) and Northland (5.3% for the unadjusted population and 6.2% when adjusted for hysterectomy prevalence).

Generally, the non-participation rates for the 25-54 year age groups were relatively similar and these rates were higher than those for the older 55-69 year age groups (data not shown). This pattern was observed for the total population and most of the regions.

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 slightly higher for Maori women, but almost twice as high for Pacific women. For the unadjusted 25-69 year old population, the non-participation rates for Maori, 'Other' and Pacific women were 6.2%, 4.1% and 9.3%, respectively. When adjusted for hysterectomy, non-participation rates for 25-69 year old Maori, 'Other' and Pacific women were 6.9%, 4.7% and 10.4%, respectively.

Some women enrolled on the NCSP-Register for whom smears are recommended may not be having regular smears for a variety of reasons, for example, cost and embarrassment. Other women may have been classified as not participating, but are no longer participating for valid reasons. These women include those who have had a hysterectomy for a benign reason and their smear history was normal, and those who are now living overseas. Also, some women may have moved within New Zealand and the NCSP-Register has not been informed of their new contact address. These women are referred to as 'gone no address' (GNA).

RECOMMENDATIONS

Data Issues

As for section 4.1.

Service Issues

1. Reasons for non-participation 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.

NCSP region	All 25-69 year old women	All 25-69 year old women (hysterectomy-adjusted)
Auckland	5.4	6.1
Bay of Plenty	4.4	5.1
Canterbury	3.8	4.5
Hawkes Bay	3.1	3.7
Manawatu/ Wanganui	4.4	5.1
Nelson/ Marlborough	3.7	4.3
Northland	5.3	6.2
Otago	3.3	3.9
Southland	3.7	4.3
Tairāwhiti	2.7	3.1
Taranaki	3.4	3.9
Waikato	4.6	5.4
Wellington	4.7	5.4
West Coast	3.4	3.9
Total	4.5	5.2

Table 12. The non-participation rate (%) among women aged 25-69 years for each specified ethnic group*.

Ethnic Group	All 25-69 year old women	All 25-69 year old women (hysterectomy-adjusted)
Maori	6.2%	6.9%
Other	4.1%	4.7%
Pacific	9.3%	10.4%
Total	4.6%	5.3%

* Different set of data used (see Methods).

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 quarter, 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 before the beginning of the quarter who had a smear during the quarter is expressed as a proportion of 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 is tabulated by age at the end of the quarter.

Results

Table 13 shows the re-participation rate for this quarter for 20-69 year old women by 5-year age groups for each NCSP region. For all 20-69 year old women the re-participation rate was 2.9%, which is less than that reported for the October-December 2000 quarter (3.4%). Amongst the regions, the re-participation rate for all 20-69 year old women ranged from 0% in the West Coast to 3.2% in Northland and Canterbury.

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 was low compared with that for Maori and 'Other' women. The re-participation rates for 20-69 year old Maori, 'Other' and Pacific women were 3.8%, 3.8% and 1.6%, respectively.

RECOMMENDATIONS

Service Issues

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 groups 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	2.9	3.1	3.0	2.9	2.7	2.7	2.8	3.6	3.3	3.7	3.0
Bay of Plenty	3.3	3.6	3.3	2.1	3.4	2.7	3.6	1.7	1.2	2.4	2.9
Canterbury	3.5	3.5	3.3	2.7	3.3	2.2	3.3	3.2	4.0	3.4	3.2
Hawkes Bay	1.9	3.2	3.2	3.2	2.0	4.6	2.4	3.1	3.4	3.7	3.0
Manawatu/ Wanganui	2.7	2.1	2.2	2.9	3.2	2.2	2.2	2.9	1.9	2.5	2.5
Nelson/ Marlborough	5.2	3.5	2.8	1.3	4.1	2.9	3.1	3.7	2.9	0.0	3.0
Northland	2.0	5.8	3.4	2.5	3.1	2.8	1.5	2.2	4.2	6.0	3.2
Otago	1.3	2.0	2.8	1.5	1.3	2.7	2.8	2.1	0.5	0.0	1.8
Southland	2.7	2.3	2.5	4.0	2.7	3.0	4.0	3.4	3.7	3.5	3.1
Tairāwhiti	1.8	1.9	2.0	3.2	4.3	2.0	5.4	0.0	8.7	0.0	3.0
Taranaki	3.0	2.2	4.1	2.8	2.2	3.2	3.3	2.9	2.5	4.2	3.0
Waikato	3.3	3.2	2.2	2.1	1.7	3.0	2.1	2.1	2.5	0.7	2.4
Wellington	2.5	2.8	2.9	3.4	3.5	2.2	3.5	2.5	3.1	1.2	2.9
West Coast	0	0	0	0	0	0	0	0	0	0	0
Total	2.9	3.1	2.9	2.7	2.8	2.6	2.9	2.9	2.9	2.7	2.9

Table 14. The re-participation rate (%) for 20-69 year old women by 5-year age groups for each specified ethnic group*.

Ethnic Group	Age group (years)										Total
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	20-69
Maori	5.6	4.4	4.1	3.6	4.3	3.7	2.2	2.7	2.3	3.2	3.8
Other	4.3	4.2	4.1	4.0	3.3	3.6	3.6	3.6	3.7	2.6	3.8
Pacific	4.8	1.9	1.4	1.3	1.5	1.9	2.4	1.0	1.5	1.2	1.6
Total	4.8	4.1	3.8	3.6	3.3	3.5	3.3	3.3	3.4	2.6	3.6

* Different set of data used (see Methods).

4.6 New recruitment rate

Definition

The new recruitment rate is the proportion of women aged 20-69 years not previously recorded on the NCSP-Register who have had a smear recorded on the register during this reporting quarter.

Target

There is no target for this indicator.

Calculation

The difference between the estimated unadjusted target population aged 20-69 years and the number of women enrolled in that age group before the beginning of the quarter was used to estimate the number of women who have not been screened in the programme. The new recruitment rate was calculated by identifying enrolled women as in Section 4.1 and determining whether their date of enrolment occurred in the quarter. This was expressed as a proportion of those 20-69 year old women who have not been screened in the programme.

Results

The new recruitment rate was calculated, but the target population and the number of women enrolled could not be determined precisely enough for this measure of health promotion activity to be accurately determined.

RECOMMENDATIONS

Data Issues

1. The new recruitment rate should not be included as a national indicator.

4.7 Short interval re-screening

Definition

Short interval re-screening is the proportion of 20-69 year old women screened without a previous high grade or more serious result, who have had a smear earlier than the recommended interval of the screening programme. 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 women with two or more 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 women who had had at least one smear in the same 33-month period. Unlike the calculation in report 1, women with any abnormalities detected prior to the 33-month period were excluded. Therefore, the short interval re-screening rate presented in this report is not directly comparable with that shown in report 1. Women who enrolled in the 12 months before or during the 33-month period were 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 a history of ASCUS possible high grade, HSIL or more serious, and women with a LSIL, ASCUS possible high grade, 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. Also, women with unsatisfactory smears during the 33-month period were excluded from the analysis.

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 25.8%, which was considerably higher than the target of 10%.

Short-interval re-screening was observed to be highest in the 25-34 year age groups (28.2%), and it was only slightly lower in the 20-24 and 35-54 year age groups.

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 varied amongst the DHB areas, and it ranged from 19.3% in Waikato to 32.3% in Auckland. High levels of short interval re-screening were also observed for North West Auckland (31.3%) and Capital Coast (30.7%).

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 high level of short interval re-screening observed. Three-yearly cervical screening is considered to reduce the incidence by 91.4% compared with 93.4% if annual screening is done⁸, while the costs are much higher.

⁸ 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.

RECOMMENDATIONS

Service Issues

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 Capital Coast).
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.

Table 15. Short-interval re-screening proportion (%) by 5-year age groups.

Age group (years)										Total
20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	20-69
27.4	28.2	28.2	26.4	25.6	26.1	25.8	23.3	20.2	17.3	25.8

Table 16. Short-interval re-screening proportion (%) for 20-69 year old women for each DHB area.

District Health Board	Total 20-69 years
Auckland	32.3
Bay of Plenty	21.9
Canterbury	23.7
Capital Coast	30.7
Hawkes Bay	22.5
Hutt	25.7
Lakes	24.6
Manawatu	23.9
Nelson/Marlborough	21.1
North West Auckland	31.3
Northland	28.1
Otago	19.8
South Auckland	28.4
South Canterbury	24.8
Southland	20.9
Tairāwhiti	29.3
Taranaki	22.9
Waikato	19.3
Wairarapa	23.9
West Coast	25.2
Whanganui	20.0
Unspecified	29.2

Total	25.8
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4.8 Delayed re-screening for women with HSIL or invasive carcinoma

Definition

Re-screening for women with HSIL or invasive carcinoma is the proportion of women participating in the NCSP with a history of HSIL or invasive carcinoma who have completed treatment and had a smear within specified time periods.

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 invasive carcinoma 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 biopsy result recorded as CIN-not otherwise specified, or HSIL or more serious, prior to 1 January 2000, and who had completed treatment. This date was chosen because it was 15 months before the end of the reporting quarter, allowing sufficient opportunity for a follow up smear to be taken and recorded on the NCSP-Register. The numbers of these women who had had a smear 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 HSIL or worse before 1 January 2000 and who had completed treatment.

Results

Table 17 shows the number and proportion of women with a history of HSIL or more serious abnormality, who have completed treatment and whose previous smear was less than 15 months ago, between 15 and 18 months ago and more than 18 months ago. 24,562 women with a history of HSIL or invasive carcinoma had completed treatment before 1 January 2000.

Of these 24,562 women, 76.9% had had a smear within 15 months of the end of the reporting quarter. This was less than the target of 85%. For 16.4% of the 24,562 women their last smear was more than 18 months previously. This is much more than the target of 1%. There was no record of a smear result for 382 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 are unlikely to be the only explanations.

RECOMMENDATIONS

Service Issues

1. Reasons why women with a history of a high grade abnormality whose last smear was more than 18 months overdue ago need to be examined.
2. Reasons why 382 women with a history of a high grade abnormality have no follow up smear results recorded in the NCSP-Register need to be examined.
3. Efforts to encourage women with a history of a high grade abnormality to have annual smears need to continue.

Table 17. Timeliness of the most recent smear among women with a previous significant abnormality.

Time period	Number (%)	Cumulative proportion (%)
Less than 15 months	18,881 (76.9)	76.9
15-18 months	1,274 (5.2)	82.1
More than 18 months	4,025 (16.4)	98.4
No smear	382 (1.6)	100.0
Total	24,562	

4.9 Follow-up of women with HSIL cytology

Definition

Follow-up of women with HSIL cytology is defined as the proportion of 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 of 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 women who had a smear result of HSIL or more serious abnormality recorded on the NCSP-Register between 1 April 1999 and 31 March 2000 was calculated. The time between the date of the smear and the date of the biopsy was calculated. The numbers of women with the different follow-up times were expressed as a proportion of the total number of women with a HSIL or more serious cytology result between 1 April 1999 and 31 March 2000. This indicator was calculated for all women, and Maori women, Pacific women and 'Other' women.

Results

Table 18 shows the number and proportion of women with HSIL cytology reported for the period 1 April 1999 to 31 March 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 a HSIL report for which there was no subsequent histology result recorded on the NCSP-Register is also shown. Over three-quarters (77.6%) of the 3,615 women with HSIL cytology had a histology report recorded by the NCSP-Register within 12 weeks of having their smear. This is similar to that reported last reporting quarter (78.0%), but less than the target of 90%. More than 90% of women with HSIL cytology had a histology report received by the NCSP-Register within 26 weeks of having their smear.

The 99% target for histology being reported within 52 weeks of women having an HSIL cytology report was almost reached. 97.6% of the 3,615 women had an histology result recorded on the NCSP-Register within 52 weeks. This is 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 April 1999 to 31 March 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. About 13% fewer Maori women and about 20% fewer Pacific women compared with 'Other' women had an histology report received by the NCSP-Register within 12 weeks of having their HSIL cytology. After 26 weeks of having an HSIL cytology report, the differences in the time for reporting and recording a histology result on the NCSP-

Register between the three ethnic groups persisted, but they were not as great and after 52 weeks there was very little difference.

For 26 women an histology result was not recorded on the NCSP-Register (Table 18). Of these 26 women, 6 were Maori women and 20 were ‘Other’ women. It is possible that some of these women may have had further investigations and treatment, but their histology reports had not been 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 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.
2. Reasons why no histology result was recorded by the NCSP-Register for 26 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.

Table 18. Timeliness of histology reports after an HSIL cytology result for all enrolled 20-69 year old women*.

Time period	Number (%)	Cumulative proportion (%)
Within 12 weeks	2,804 (77.6)	77.6
13-26 weeks	512 (14.2)	91.8
27-52 weeks	208 (5.8)	97.6
More than 52 weeks	64 (1.8)	99.4
Subtotal	3,588	
No histology reported	27 (0.7)	100.0

Total	3,615	
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Table 19. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old Maori women*.

Time period	Number (%)	Cumulative proportion (%)
Within 12 weeks	378 (67.5)	67.5
13-26 weeks	108 (19.3)	86.8
27-52 weeks	51 (9.1)	95.9
More than 52 weeks	17 (3.0)	98.9
Subtotal	554	
No histology reported	6 (1.1)	100.0
Total	560	

* Some abnormal results for Northland women not included (see Methods).

Table 20. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old 'Other' women*.

Time period	Number (%)	Cumulative proportion (%)
Within 12 weeks	2,321 (80.5)	80.5%
13-26 weeks	365 (12.7)	93.2%
27-52 weeks	136 (4.7)	97.9%
More than 52 weeks	40 (1.4)	99.3%
Subtotal	2,862	
No histology reported	20 (0.7)	100.0%
Total	2,882	

* Some abnormal results for Northland women not included (see Methods).

Table 21. Timeliness of histology reports after an HSIL cytology result for enrolled 20-69 year old Pacific women*.

Time period	Number (%)	Cumulative proportion
Within 12 weeks	44 (60.3)	60.3
13-26 weeks	14 (19.2)	79.5
27-52 weeks	13 (17.8)	97.3
More than 52 weeks	2 (2.7)	100.0
Subtotal	73	
No histology reported	0 (0.0)	100.0
Total	73	

* Some abnormal results for Northland women not included (see Methods).

4.10 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 by 2005 for Maori women.

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

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.

4.11 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 by 2005 for Maori women.

Results

This will be provided in the annual report.

4.12 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 diagnostic Bethesda code. Therefore, a hierarchy of the codes is used by the NCSP for the purposes of clinical management. Similarly for the purposes of this report the most serious diagnostic smear code according to the hierarchy of codes is used. The hierarchy of codes by broad cytological category, with increasing severity from (a) to (f) were:

- (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),
- (f) ASCUS possible high grade,
- (g) high grade squamous intraepithelial neoplasia (HSIL),
- (h) squamous carcinoma of the cervix,
- (i) adenocarcinoma-in-situ (AIS),
- (j) adenocarcinoma of the cervix,
- (k) cancer not otherwise specified.

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.

Calculation

Cytology abnormality reporting rates were calculated for smears and for women. For each 5-year age group, the number of smear results in each of the specified cytological categories and the total number of satisfactory or satisfactory but limited smears processed during the quarter were used to calculate a rate per 1000 smears. Also, for each 5-year age group, the number of women with a smear result in each of the specified cytological categories and the total number of women who had satisfactory or satisfactory but limited smears processed during the quarter were used to calculate a rate per 1000 women. For both calculations, where a single smear had more than one diagnostic code, the most serious ranked code according to the hierarchy of codes was used. For the latter calculation, where a woman had more than one abnormal smear result during the quarter, only the most serious ranked smear result was used.

For each specified cytological category, the age-standardised rate was calculated using Segi's World population.

Results

Smears

Table 22 shows reported smear results by specified cytological result category per 1000 smears reported during the quarter by 5-year age group and age-standardised rates. The age-standardised reporting rate for a negative smear was 910.67 per 1000 smears. Amongst the 5-year age groups, the age-specific reporting rates for a negative smear increased from 833.26 per 1000 smears for 20-24 year old women to 956.36 per 1000 for 65-69 year old women.

ASCUS and LSIL were the most frequently reported abnormal smear results. The age-standardised rates were 46.53 per 1000 smears and 27.78 per 1000 smears, respectively. For both abnormalities the highest age-specific rates were recorded for women aged 20-24 years. Except for the 20-24 year old age group, for each of the other 5-year old age groups the ASCUS age-specific rate was higher than the LSIL age-specific rate. The ASCUS age-specific rate decreased from 71.71 per 1000 smears for the 20-24 year old age group to 25.74 for the 65-69 year age group, and the LSIL age-specific rate decreased from 71.46 per 1000 smears for the 20-24 year age group to 9.70 per 1000 smears for the 65-69 year old age group.

The age-standardised ASCUS possible high grade rate was 2.93 per 1000 smears. The age-specific reporting rates for this abnormality were relatively similar to this rate and did not follow the age distribution of the reporting rate of HSIL.

The age-standardised HSIL rate was 11.48 per 1000 smears. The age-specific HSIL reporting rates were highest for the 20-24 year old age group (20.76 per 1000 smears) and the 25-29 year old age group (20.70 per 1000 smears), and decreased with increasing age to 3.73 per 1000 smears for women aged 65-69 years.

The age-standardised cervical squamous carcinoma rate was 0.18 per 1000 smears. Amongst the 5-year age groups the age-specific cervical squamous carcinoma reporting rates were highest amongst women aged 45-69 years, with the highest rate amongst women aged 60-64 years (1.01 per 1000 smears).

Women

Table 23 shows reported smear results by specified cytological result category per 1000 women screened during the reporting quarter by 5-year age group and age-standardised rates. Overall, these results were very similar to those age-specific reporting rates per 1000 smears and age-standardised rates shown in Table 22.

RECOMMENDATIONS

None

Table 22. Reported smear results by specified cytological result category per 1000 smears by 5-year age group.

Category of cytology result	Age groups (years)										Age-standardised rates* (20-69 years)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Negative for dysplasia or malignancy	833.26	879.07	911.17	920.14	925.63	935.42	936.02	946.99	953.20	956.36	910.76
ASCUS	71.71	55.68	44.24	44.38	42.21	41.89	43.45	33.73	30.20	25.74	46.53
LSIL	71.46	41.11	24.28	23.01	18.76	15.74	12.47	11.49	8.05	9.70	27.87
ASCUS-HG	2.72	3.21	3.90	2.85	3.77	1.43	2.77	2.78	2.77	2.98	2.93
HSIL	20.76	20.70	16.27	9.55	9.46	5.31	4.66	4.26	4.03	3.73	11.48
Squamous carcinoma cervix	0	0	0	0.07	0.08	0.20	0.25	0.37	1.01	0.37	0.18
Adenocarcinoma-in-situ	0.09	0.07	0.14	0	0	0	0.13	0	0.25	0	0.07
Adenocarcinoma - other	0	0	0	0	0	0	0	0.19	0.25	0	0.03
Adenocarcinoma - not otherwise specified	0	0.15	0	0	0	0	0.13	0	0.25	0.75	0.09
Abnormal smear - not otherwise specified	0	0	0	0	0	0	0.13	0.19	0	0	0.02
Cancer - not otherwise specified	0	0	0	0	0.08	0	0	0	0	0.37	0.03

Total number of smears	11,755	13,380	14,624	14,037	11,940	9,787	7,940	5,395	3,974	2,681	95,513
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* Age-standardised to Segi's World population (see Appendix 3).

Table 23. Reported smear results by specified cytological result category per 1000 women by 5-year age group.

Category of cytology result	Age groups (years)										Age-standardised rates* (20-69 years)
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Negative for dysplasia or malignancy	834.46	881.37	912.50	920.63	926.39	936.01	937.17	947.99	953.88	957.89	911.91
ASCUS	71.36	54.44	43.92	44.17	42.08	41.73	42.48	33.30	29.90	24.44	46.01
LSIL	2.66	2.87	3.79	2.87	3.54	1.44	2.67	2.81	2.53	3.01	2.82
ASCUS-HG	71.10	40.63	24.13	22.94	18.72	15.46	12.34	11.41	7.86	9.40	27.65
HSIL	20.33	20.54	15.51	9.32	9.11	5.15	4.71	3.74	4.05	3.76	11.21
Squamous carcinoma cervix	0	0	0	0.07	0.08	0.21	0.25	0.37	1.01	0.38	0.18
Adenocarcinoma-in-situ	0.09	0.08	0.14	0	0	0	0.13	0	0.25	0	0.07
Adenocarcinoma – other	0	0	0	0	0	0	0	0.19	0.25	0	0.03
Adenocarcinoma - not otherwise specified	0	0.08	0	0	0	0	0.13	0	0.25	0.75	0.08
Abnormal smear - not otherwise specified	0	0	0	0	0.08	0	0	0	0	0.38	0.03
Cancer - not otherwise specified	0	0	0	0	0	0	0.13	0.19	0	0	0.02

Total number of women	11,659	13,243	14,503	13,947	11,859	9,705	7,863	5,345	3,946	2,660	94,730
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* Age-standardised to Segi's World population (see Appendix 3).

4.13 Histology abnormality reporting

The Systematised Nomenclature of Medicine (SNOMED) histology codes is 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 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.

Calculation

For each 5-year age group, the total number of histology results for satisfactory specimens in each of the specified histological categories were tabulated.

For each 5-year age group, the number of women with a histology result in each of the specified histological categories were tabulated. If a woman had more than one histology result, only the most serious result was used.

While these histology results were recorded on the NCSP-Register between 1 January and 31 March 2001, the time since the histology specimen was taken varied and may have been taken up to 12 months or more previously. Also, because the type of histology specimen was not always recorded, all cervical histology results recorded on the NCSP-Register during the reporting quarter were used. This included diagnostic biopsies, treatment biopsies and the cervical tissue of total hysterectomy specimens.

Histology reporting rates per 10,000 women screened per average quarter in the past three years were also calculated. The number of women with a particular histology result was divided by the average number of women screened in the quarter. This was expressed as a rate per 10,000 women. The average number of women screened in the quarter was calculated by dividing the number of women screened in the past three years by 12. There are 12 quarters in a three year period.

Results

Histology specimens

Table 24 shows the number of histology reports for satisfactory specimens by specified histological result category by 5-year age group. Between 1 January and 31 March 2001, 'Other' was the most frequently reported non-negative histology result (1,423). As defined by the SNOMED coding, this category includes "morphological abnormality, not

dysplastic or malignant". The two most frequently reported abnormal histology results were HSIL (1,562) and LSIL (1,107). Five specimens were reported as microinvasive squamous cell carcinoma of the cervix and 39 specimens were reported as invasive squamous cell carcinoma of the cervix.

Table 25 shows the number of histology reports by most severe histological result category for women by 5-year age group and quarterly histology reporting rates per 10,000 women screened. During the reporting quarter 1,322 women had an 'Other' histology result, which was the most frequently reported non-negative result. Amongst the 5-year age groups, higher numbers of women in the 35-49 year age groups were reported as having an 'Other' histology result.

962 women had LSIL and 1,318 women had HSIL reported on histology. For both the LSIL and HSIL histology results, these were reported in greater numbers amongst women in the 20-34 year age groups. When age-specific rates were calculated, the highest LSIL and HSIL rates were observed in the 20-29 year age groups. The LSIL rate declined from 16.7 per 10,000 screened women in the 20-24 year age group to 0.9 per 10,000 screened women in the 65-69 year age group. The HSIL rate peaked in the 25-29 year age group (26.0 per 10,000 women screened) and declined to 0.7 per 10,000 screened women in the 65-69 year age group. Four women had a microinvasive squamous cell carcinoma and 32 women had an invasive squamous cell carcinoma.

The number of women and the age-specific rates for adenocarcinoma-in-situ were higher amongst women aged 20-39 years compared with older aged women. Because the origin of the adenocarcinomas was not known from the data provided, it was not possible to comment on the numbers of women with a primary cervical adenocarcinoma compared to an adenocarcinoma of the cervix originating from other sites.

RECOMMENDATIONS

Data Issues

1. The type of histology results recorded by the NCSP-Register as 'Other' should be examined.

Table 24. The number of histology reports by histological result category by 5-year age group.

Category of histology result	Age groups (years)										Total number of histology reports
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Normal	47	103	128	156	178	191	136	76	55	25	1,095
Other	103	144	172	199	216	217	165	90	79	38	1,423
Polyp	0	0	3	6	12	26	28	18	6	3	102
Atypia/HPV	176	171	146	128	100	92	50	30	17	11	921
CIN-not otherwise specified	1	0	1	2	1	1	0	0	0	0	6
LSIL	276	234	207	107	123	72	42	23	10	13	1,107
HSIL	352	440	305	173	136	61	40	21	22	12	1,562
Microinvasive squamous carcinoma	0	0	2	1	1	0	1	0	0	0	5
Invasive squamous carcinoma	1	1	7	6	3	1	6	5	2	7	39
Glandular dysplasia	0	1	0	0	0	0	0	0	0	0	1
Adenocarcinoma-in-situ	3	6	7	5	2	2	2	1	0	0	28
Invasive adenocarcinoma†	0	5	0	2	1	1	4	4	0	3	20
Metastatic carcinoma‡ or other malignnncy	0	0	0	0	0	3	0	0	1	1	5

Total	959	1,105	978	785	773	667	474	268	192	113	6,314
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† Origins of adenocarcinomas were unknown but possible sites include cervical, endometrial and bowel. ‡ Primary site unknown.

Table 25. The number of histology reports by most severe histological result category for women by 5-year age group and quarterly histology reporting rate per 10,000 women screened in last 3 years.

Category of histology result		Age groups (years)										Total number of histology reports and crude rate
		20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Normal	Number	41	86	113	138	167	183	129	69	50	23	999
	Rate	2.9	6.1	8.0	9.8	11.8	13.0	9.1	4.9	3.5	1.6	70.8
Other	Number	86	133	157	184	199	208	158	87	74	36	1322
	Rate	6.1	9.4	11.1	13.0	14.1	14.7	11.2	6.2	5.2	2.6	93.7
Polyp	Number	0	0	3	6	12	26	28	18	6	3	102
	Rate	0.0	0.0	0.2	0.4	0.9	1.8	2.0	1.3	0.4	0.2	7.2
Atypia/HPV	Number	147	146	126	116	88	83	43	29	15	9	802
	Rate	10.4	10.3	8.9	8.2	6.2	5.9	3.0	2.1	1.1	0.6	56.8
CIN-nos	Number	1	0	1	1	1	1	0	0	0	0	5
	Rate	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.4
LSIL	Number	235	201	177	94	107	65	37	23	10	13	962
	Rate	16.7	14.2	12.5	6.7	7.6	4.6	2.6	1.6	0.7	0.9	68.2
HSIL	Number	303	367	261	144	115	53	31	16	18	10	1318
	Rate	21.5	26.0	18.5	10.2	8.2	3.8	2.2	1.1	1.3	0.7	93.4
Microinvasive squamous carcinoma	Number	0	0	1	1	1	0	1	0	0	0	4
	Rate	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.3
Invasive squamous carcinoma	Number	1	1	5	5	3	1	5	3	2	6	32
	Rate	0.1	0.1	0.4	0.4	0.2	0.1	0.4	0.2	0.1	0.4	2.3
Glandular dysplasia	Number	0	1	0	0	0	0	0	0	0	0	1
	Rate	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Adenocarcinoma -in-situ	Number	3	4	7	5	2	0	2	1	0	0	24
	Rate	0.2	0.3	0.5	0.4	0.1	0.0	0.1	0.1	0.0	0.0	1.7
Invasive adenocarcinoma†	Number	0	4	0	2	1	1	4	3	0	2	17
	Rate	0.0	0.3	0.0	0.1	0.1	0.1	0.3	0.2	0.0	0.1	1.2
Metastatic carcinoma‡	Number	0	0	0	0	0	2	0	0	1	1	4
	Rate	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.3

Total number	762	777	898	824	671	667	607	492	309	195	130
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† Origins of adenocarcinomas were unknown but possible sites include cervical, endometrial and bowel.

‡ Primary site unknown.

4.14 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.

4.15 Programme sensitivity

Definition

Programme sensitivity is the proportion of all women with invasive cervical cancer 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.

4.16 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.

4.17 Laboratory smear reporting

Levels of abnormalities detected by laboratories depend on numerous factors. The prevalence of the different 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 between laboratories, particularly for hospital laboratories. Hospital laboratories tend to 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 tends to be higher amongst this group of women. Consequently, the prevalence of abnormalities reported by hospital laboratories is much greater than those laboratories (community laboratories) for whom 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. If laboratories receive specimens predominantly from colposcopy clinics and sexual health clinics, it is likely that the overall prevalence of abnormalities detected will be higher than would otherwise occur.

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 subject of international debate amongst cytopathologists.

Since this is only the second monitoring report, trends in laboratory reporting have not been provided.

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, ASCUS, AGUS, LSIL, ASCUS possible high grade, and HSIL).

Targets

The targets for laboratory smear reporting are:

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

Calculation

The diagnostic Bethesda codes, as recorded on the NCSP-Register, of smears processed 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 processed by each laboratory. As for the calculation of cytology abnormality reporting, where a single smear had more than one diagnostic smear code, only the more serious ranked code was used according to the hierarchy of codes (section 4.12). Total abnormalities included all smears with a diagnostic code of ASCUS/AGUS or more serious abnormality. Only smears for women aged 20-69 years were included. Smears recorded as being unsatisfactory for evaluation were excluded.

Results

Table 26 shows the number and proportion of satisfactory or satisfactory but limited smears in the specified cytological categories for each of the laboratories that processed smear tests during the reporting quarter. The results are grouped into laboratories reporting smears predominantly for hospital clinics, and laboratories reporting smears predominantly from the community. A total of 95,780 satisfactory or satisfactory but limited smears were processed, and the number of smears processed by each laboratory during the quarter ranged from 59 by Healthlab Otago to 30,282 by Diagnostic Medlab Auckland.

Overall, 90.9% of smears were negative for dysplasia or malignancy. This was within the target of not more than 96% of smears being negative for dysplasia or malignancy. All laboratories met this target.

For the proportion of smears reported as HSIL, no laboratories were below the target, although Medlab Hamilton was at the lower limit of the target (0.6%). For all laboratories together, this proportion was 1.2% of smears.

Overall, the proportion of both satisfactory or satisfactory but limited smears reported with an abnormality was 9.1%. This was within the target of not more than 10% of smears reported as abnormal. All five laboratories that serviced predominantly hospital clinics reported many more than 10% of the slides they processed to be abnormal. The proportion of smears reported as abnormal by Healthlab Otago was particularly high (88.1%), but they processed only 59 smears during the quarter and now no longer process smears as part of the NCSP. Three laboratories that reported smears predominantly from the community also reported more than 10% of the slides as abnormal. They were Medlab Bay of Plenty (28.5%), Medlab Hamilton (17.9%) and Pathlab Waikato (11.2%). These 3 laboratories also had relatively high proportions of ASCUS results compared with other community laboratories.

RECOMMENDATIONS

Service Issues

1. An investigation of the outcome of women with ASCUS cytology results should be undertaken.
2. Explanations for the relatively high level of total abnormalities reported should be sought from Medlab Bay of Plenty, Medlab Hamilton and Pathlab Waikato.

Table 26. The number and proportion of satisfactory and 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)		AGUS		LSIL		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.	%	
<i>Predominantly hospital clinic work</i>															
Auckland Hospital Laboratory‡	1,505	74.6	263	13.0	1	0.0	144	7.1	15	0.7	101	5.0	512	25.4	2,017
Canterbury Health Laboratories	587	78.5	95	12.7	0	0.0	54	7.2	3	0.4	12	1.6	161	21.5	748
Healthlab Otago#	7	11.9	17	28.8	0	0.0	28	47.5	1	1.7	7	11.9	52	88.1	59
Waikato Hospital Laboratory	338	58.0	120	20.6	2	0.3	94	16.1	3	0.5	28	4.8	245	42.0	583
Wellington Hospital Laboratory	157	71.0	35	15.8	2	0.9	13	5.9	1	0.5	14	6.3	64	29.0	221
Rest of table 26 continued on next page															

† Does not include inflammation or infection

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

Ceased processing smears during the January – March 2001 reporting quarter.

Table 26 continued

Laboratory	Negative for dysplasia or malignancy (target = not more than 96%)		Total ASCUS (including ASCUS possible HSIL)		AGUS		LSIL		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.	%	
<i>Predominantly community work</i>															
Diagnostic Medlab Auckland	28,726	94.9	656	2.2	11	0.0	627	2.1	46	0.2	259	0.9	1,556	5.1	30,282
Medical Laboratory Southland	1,016	94.9	22	2.1	1	0.1	22	2.1	2	0.2	10	0.9	55	5.1	1,071
Medical Laboratory Wellington	7,293	92.8	352	4.5	5	0.1	154	2.0	17	0.2	52	0.7	564	7.2	7,857
Medlab Bay of Plenty	4,202	71.5	1,087	18.5	11	0.2	341	5.8	93	1.6	236	4.0	1,676	28.5	5,878
Medlab Central, Palmerston North	6,588	91.9	290	4.0	2	0.0	201	2.8	17	0.2	86	1.2	581	8.1	7,169
Medlab Hamilton	4,924	82.1	804	13.4	9	0.2	223	3.7	14	0.2	37	0.6	1,074	17.9	5,998
Medlab South Christchurch	7,816	92.6	306	3.6	1	0.0	233	2.8	15	0.2	79	0.9	621	7.4	8,437
Nelson Diagnostic Laboratory#	1,889	93.5	81	4.0	2	0.1	31	1.5	8	0.4	16	0.8	131	6.5	2,020
Pathlab Waikato	2,254	88.8	201	7.9	2	0.1	59	2.3	22	0.9	23	0.9	285	11.2	2,539
SCL* - Christchurch	4,767	94.9	125	2.5	1	0.0	82	1.6	9	0.2	48	1.0	258	5.1	5,025
SCL* - Dunedin	7,875	95.4	135	1.6	2	0.0	167	2.0	12	0.1	75	0.9	381	4.6	8,256
Taranaki Medlab	3,486	91.6	158	4.2	4	0.1	118	3.1	7	0.2	39	1.0	319	8.4	3,805
Valley Diagnostic Laboratory	3,661	95.5	48	1.3	0	0.0	95	2.5	3	0.1	30	0.8	174	4.5	3,835
Total	87,091	90.9	4,795	5.0	56	0.1	2,686	2.8	288	0.3	1,152	1.2	8,689	9.1	95,780

† Does not include inflammation or infection.

Ceased processing smears during the January – March 2001 reporting quarter.

*SCL = Southern Community Laboratory.

4.18 Laboratory turn around time

Definition

Laboratory 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 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 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.

Results

Table 27 shows the proportion of smears received and reports issued within the specified time periods for each laboratory. Overall 85.8% smear reports were issued within 7 working days of smears being received at laboratories during the reporting quarter. This is similar to that reported for the last quarter (86.2%) and less than the target of 90%. Four of the 18 laboratories processing smears during the quarter clearly did not reach the target. These laboratories were Auckland Hospital Laboratory (60.9%), Healthlab Otago (54.2%), Medlab Hamilton (2.1%) and Medlab Bay of Plenty (0.3%).

Overall 90.3% of smear reports were issued within 14 working days of smears being received by the laboratory, which was less than that reported last quarter (96.8%) and less than the target of 100%. While Auckland Hospital Laboratory (96.4%) almost reached the 14-day target, Healthlab Otago (83.1%), Medlab Hamilton (43.1%) and Medlab Bay of Plenty (0.7%) clearly did not.

For 9.7% of smears received by laboratories during the quarter, reports were still to be issued after 14 working days. In particular, there were outstanding reports to be issued for Healthlab Otago (17.0%), Medlab Hamilton (56.9%) and Medlab Bay of Plenty (99.3%).

Healthlab Otago ceased reading cervical and vaginal vault smear slides during this reporting quarter.

RECOMMENDATIONS

Service Issues

1. Reasons for long smear reporting times should be sought from those laboratories who did not reach the targets, in particular Auckland Hospital Laboratory, Medlab Hamilton and Medlab Bay of Plenty.

Table 27. Timeliness of the reporting of smears by laboratories.

Laboratory	Within 7 working days	From 8-14 working days		More than 14 working days
	Proportion (%)	Proportion (%)	Cumulative Proportion (%)	Proportion (%)
<i>Predominantly Hospital</i>				
Auckland Hospital Laboratory	60.9	35.5	96.4	3.6
Canterbury Health Laboratories	100.0	0.0	100.0	0.0
Healthlab Otago†	54.2	28.8	83.1	17.0
Waikato Hospital Laboratory	97.3	2.7	100.0	0.0
Wellington Hospital Laboratory	99.6	0.0	99.6	0.4
<i>Predominantly Community</i>				
Diagnostic Medlab Auckland	99.7	0.3	100.0	0.0
Medical Laboratory Southland	100.0	0.0	100.0	0.0
Medical Laboratory Wellington	91.8	8.2	100.0	0.0
Medlab Bay of Plenty	0.3	0.4	0.7	99.3
Medlab Central, Palmerston North	99.9	0.1	100.0	0.0
Medlab Hamilton	2.1	41.0	43.1	56.9
Medlab South Christchurch	100.0	0.0	100.0	0.0
Nelson Diagnostic Laboratory†	99.6	0.2	99.9	0.2
Pathlab Waikato	100.0	0.0	100.0	0.0
Southern Community Laboratory - Christchurch	99.9	0.1	100.0	0.0
Southern Community Laboratory - Dunedin	99.9	0.1	99.9	0.1
Taranaki Medlab	95.6	4.4	100.0	0.0
Valley Diagnostic Laboratory	97.9	1.6	99.6	0.4
Total	85.8	4.4	90.3	9.7

† Ceased processing smears during the January – March 2001 reporting quarter.

4.19 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 the smear taking technique and the laboratory preparation of the specimens.

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 unsatisfactory but limited smears and the number of unsatisfactory smears reported were each expressed as a proportion of the total number of smears processed during the quarter by each laboratory.

Results

Table 28 shows the number and proportion of satisfactory but limited and unsatisfactory smears processed by the specified laboratories during this reporting quarter. Overall, of the 103,104 smears processed, 21.4% were satisfactory but limited. This was above the target of 20%. Amongst the laboratories the proportion of satisfactory but limited smears reported ranged from 6.1% at Southern Community Laboratory - Dunedin to 55.8% at Wellington Hospital Laboratory. Eleven of the 18 laboratories who processed smears during the reporting quarter reported more than 20% of smears as satisfactory but limited.

In total, 0.9% of the 103,104 smears processed were reported as unsatisfactory. This was within the target range of 0.5-2.0%. Two laboratories reported more than 2.0% of the smears they processed as unsatisfactory - Auckland Hospital Laboratory (2.5%) and Canterbury Health Laboratories (2.7%). Six laboratories reported less than 0.5% of the smears they processed as unsatisfactory - Healthlab Otago (0.0%), Medical Laboratory Southland (0.4%), Medlab Hamilton (0.3%), Medlab South Christchurch (0.3%) and Southern Community Laboratory Christchurch (0.2%). Healthlab Otago only processed 73 smears during this reporting quarter and they now no longer process cervical and vaginal smears for the NCSP.

RECOMMENDATIONS

Service Issues

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

Table 28. The number and proportion of satisfactory but limited and unsatisfactory smears by laboratory.

Laboratory	Number of smears processed	Satisfactory but limited smears (%) (target = not more than 20%)	Unsatisfactory smears (%) (target = 0.5 – 2.0%)
<i>Predominantly Hospital</i>			
Auckland Hospital Laboratory	2,253	707 (31.4)	56 (2.5)
Canterbury Health Laboratories	887	208 (23.4)	24 (2.7)
Healthlab Otago†	73	8 (11.0)	0 (0.0)
Waikato Hospital Laboratory	631	55 (8.7)	7 (1.1)
Wellington Hospital Laboratory	258	144 (55.8)	5 (1.9)
<i>Predominantly Community</i>			
Diagnostic Medlab Auckland	32,041	8,901 (27.8)	261 (0.8)
Medical Laboratory Southland	1,177	145 (12.3)	5 (0.4)
Medical Laboratory Wellington	8,446	1,701 (20.1)	133 (1.6)
Medlab Bay of Plenty	6,406	1,682 (26.3)	33 (0.5)
Medlab Central, Palmerston North	7,840	1,823 (23.3)	53 (0.7)
Medlab Hamilton	6,393	1,461 (22.9)	16 (0.3)
Medlab South Christchurch	9,113	1,257 (13.8)	31 (0.3)
Nelson Diagnostic Laboratory†	2,142	446 (20.8)	25 (1.2)
Pathlab Waikato	2,682	844 (31.5)	20 (0.7)
Southern Community Laboratory - Christchurch	5,397	452 (8.4)	9 (0.2)
Southern Community Laboratory - Dunedin	9,073	555 (6.1)	90 (1.0)
Taranaki Medlab	4,138	819 (19.8)	83 (2.0)
Valley Diagnostic Laboratory	4,154	878 (21.1)	71 (1.7)
Total	103,104	22,086 (21.4)	922 (0.9)

† Ceased processing smears during the January – March 2001 reporting quarter.

4.20 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. Histology reports may be issued by a different pathologist or laboratory from that which reported the cervical smear.

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 a 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.

Calculation

The first smear from women aged 20-69 years reported as indicating the presence of HSIL in the six month period 1 April to 30 September 2000 and subsequent histology reports for biopsies taken within 6 months of the smear from the same women during the 12 month period 1 April 2000 to 31 March 2001 were compared. When more than one histology result was present, the most severe abnormality was chosen. The number of women with histological confirmation of a HSIL or more serious lesion was expressed as a proportion of all women with a HSIL cytology report and subsequent histology. This measures the positive predictive value of a HSIL cytology report.

This indicator was calculated for each laboratory according to where the smears were processed.

Results

Table 29 shows the number of high grade or more serious cytology reports and the proportion that were confirmed to be HSIL or more serious histology for each laboratory. Between 1 April and 30 September 2000, there were 1,783 HSIL or invasive carcinoma cytology reports with a subsequent histology recorded on the NCSP-Register. Of these 1,783 cytology reports, 77.3% were confirmed as having HSIL or invasive carcinoma on histology. This result was within the target range of 65-85%.

The proportion of HSIL or invasive carcinoma cytology reports processed by Healthlab Otago confirmed on histology (95.8%) was above the target, and the proportion of HSIL or invasive carcinoma cytology reports processed by Waikato Hospital Laboratory confirmed on histology (63.6%) slightly below the target. Rotorua Diagnostic Laboratory was also below the target. Healthlab Otago and Rotorua Diagnostic Laboratory no longer process smears for the NCSP.

RECOMMENDATIONS

None

Table 29. Cytology reports predicting HSIL or invasive carcinoma by laboratory (positive predictive value).

Laboratory	Number of HSIL or invasive carcinoma cytology reports with a follow up histology report	Proportion of HSIL or invasive carcinoma cytology reports confirmed on histology (%)
<i>Predominantly hospital clinic work</i>		
Canterbury Health Laboratories	25	80.0
Healthlab Otago†	24	95.8
National Women's Hospital Laboratory	124	75.0
Waikato Hospital Laboratory	55	63.6
Wellington Hospital Laboratory	9	77.8
<i>Predominantly community work</i>		
Diagnostic Medlab Auckland	436	80.3
Medical Laboratory Southland	21	71.4
Medical Laboratory Wellington	66	75.8
Medlab Bay of Plenty	75	74.7
Medlab Central, Palmerston North	135	73.3
Medlab Hamilton	87	81.6
Medlab Hawkes Bay	29	79.3
Medlab South Christchurch	113	70.8
Nelson Diagnostic Laboratory†	61	68.9
Northland Pathology Laboratory	16	81.3
Pathlab Waikato	31	80.6
Rotorua Diagnostic Laboratory	40	60.0
Southern Community Laboratory	311	82.6
Taranaki Medlab	60	78.3
Valley Diagnostic Laboratory	65	75.4
Total	1,783	77.3

† Ceased processing smears during the January – March 2001 reporting quarter.

4.21 Accuracy of negative cytology reports

Definition

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

Target

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

Results

This indicator will be reported annually.

4.22 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

All data required to enable the calculation of the waiting time for assessment for HSIL and ASCUS, possible high grade indicator, are collected by colposcopy clinics. Some data required to calculate this indicator have not been collected previously. Therefore, 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 for longer than four weeks for the quarter. Also, data definitions varied between colposcopy services. For example, not all colposcopy services classified CIN2 cytology as part of HSIL⁹. Indeed eight colposcopy services did not report CIN2 at all. Nevertheless, the number of women with an HSIL or ASCUS possible high grade cytology result as reported by the clinic, who were waiting longer than four weeks for a colposcopic assessment for each District Health Board (DHB) colposcopy service for the reporting quarter was provided by the Ministry of Health.

Results

Table 32 shows the number of women with an HSIL or ASCUS possible high grade cytology result who were waiting longer than four weeks for a colposcopic assessment for each District Health Board (DHB) colposcopy service. Overall there were 50 women with an HSIL or ASCUS possible high grade cytology result waiting more than four weeks for a colposcopic assessment. Most DHB colposcopy services did not have any women waiting more than four weeks. Six colposcopy services each only had one woman waiting more than four weeks. Health Waikato had ten women and Pacific Health Whakatane had 19 women waiting more than four weeks for a colposcopic assessment.

RECOMMENDATIONS

Data Issues

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

⁹ Summary of Findings from Questionnaire to Clarify Definitions of CIN 1 and CIN 3 used to Report Colposcopy Waiting Times. Unpublished Report. Ministry of Health. December 2000.

Service Issues

1. Reasons why women with HSIL cytology are waiting more than four weeks for a colposcopic assessment should be sought from Pacific Health Whakatane and Health Waikato.
2. Efforts to reduce the number of women with HSIL cytology waiting more than four weeks for a colposcopic assessment need to continue.

Table 30. Waiting time for colposcopic assessment for HSIL or ASCUS possible high grade by District Health Board (DHB) colposcopy service.

DHB Colposcopy Service	Number of women referred for colposcopic assessment of HSIL or ASCUS-HG	Number of women referred waiting longer than 4 weeks
Northland Health		5
Waitemata Health		6
Auckland Healthcare		6
South Auckland Health		0
Pacific Health (Tauranga)		4
Lakeland Health		1
Taranaki Healthcare		1
Pacific Health (Whakatane)		19
Health Waikato		10
Capital Coast Health		1
Good Health Wanganui		1
Healthcare Hawkes Bay		0
Hutt Valley Health		0
MidCentral Health		0
Wairarapa Health		0
Tairāwhiti Healthcare		0
Nelson/Marlborough Health Services		1
Coast Health Care		1
Canterbury Health		0
HealthCare Otago		0
Health South Canterbury		0
Southern Health		0

Total

50

4.23 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 these women to be assessed within 26 weeks.

Calculation

All data required to enable the calculation of the waiting time for assessment for LSIL indicator are collected by DHB colposcopy clinics. Some data required to calculate this indicator have not been collected previously. Therefore, it was not possible to calculate and comment on the proportion of women with an LSIL cytology result referred for colposcopic assessment who were waiting longer than 26 weeks. Nevertheless, the number of women with a LSIL cytology result, as reported by the clinic, who were waiting longer than 26 weeks for a colposcopic assessment for each DHB colposcopy service for the reporting quarter was provided by the MoH.

Results

Table 33 shows the number of women with a LSIL cytology result who were waiting longer than 26 weeks for a colposcopic assessment for each DHB colposcopy service. Overall there were 1,148 women with a LSIL cytology result waiting more than 26 weeks for a colposcopic assessment. Nine of the 22 DHB colposcopy services did not have any women waiting more than 26 weeks. A further three colposcopy services each only had one woman waiting more than 26 weeks. Relatively large numbers of women were waiting more than 26 weeks for a colposcopic assessment of their LSIL cytology result at South Auckland Health (269), Health Waikato (414) and Healthcare Hawkes Bay (148).

RECOMMENDATIONS

Data Issues

1. As for section 4.22

Service Issues

1. Reasons why women with LSIL cytology waited for more than 26 weeks for a colposcopic assessment should be sought from South Auckland Health, Health Waikato and Healthcare Hawkes Bay.
2. Efforts to reduce the number of women with LSIL cytology waiting more than 26 weeks for a colposcopic assessment need to continue.

Table 31. Waiting time for assessment for colposcopy for LSIL by District Health Board (DHB) colposcopy service.

DHB Colposcopy Service	Number referred for colposcopic assessment of LSIL	Number of those referred waiting longer than 26 weeks
Northland Health		0
Waitemata Health		66
Auckland Healthcare		38
South Auckland Health		269
Pacific Health (Tauranga)		58
Lakeland Health		58
Taranaki Healthcare		16
Pacific Health (Whakatane)		0
Health Waikato		414
Capital Coast Health		21
Good Health Wanganui		1
Healthcare Hawkes Bay		148
Hutt Valley Health		0
MidCentral Health		1
Wairarapa Health		0
Tairāwhiti Healthcare		0
Nelson/Marlborough Health Services		57
Coast Health Care		0
Canterbury Health		0
HealthCare Otago		0
Health South Canterbury		0
Southern Health		1

Total		1,148
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4.24 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.

4.25 Satisfactory but limited and unsatisfactory smears by smearer

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).

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.

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

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 was expressed as a proportion of the total number of all smears taken for each smear taker category.

The number of unsatisfactory smears was expressed as a proportion of the total number of all smears taken for each smear taker category.

Result

Table 32 shows the number and proportion of satisfactory but limited and unsatisfactory smears by smear taker category. There were a total of 103,104 smears processed during the reporting quarter. Of these smears, 77.7% were satisfactory, 21.4% were unsatisfactory but limited and 0.9% were unsatisfactory for reading. The proportion of all satisfactory but limited smears was above the upper limit of the target of not more than 20%, whereas the proportion of all unsatisfactory smears was within the target range of 0.5-2.0%.

For medical, specialist and midwife smear takers, the proportions of satisfactory but limited smears were above the upper limit of the target of not more than 20%. These proportions were 22.4% for the medical group, 21.2% for the specialist group and 26.1% for the midwife group. Both the nurse and lay groups were within the target, but the lay group took very few smears compared to the other smear taker groups.

Except for the lay smear taker group, the proportions of unsatisfactory smears for all other smear taker groups were within the target range of 0.5-2.0%. For the lay smear taker group, there were no smears in this category, but as mentioned above this group took very few smears.

RECOMMENDATIONS

Service Issues

1. Reasons for the variation in the proportion of satisfactory but limited smears between smear taker groups need to be examined.

Table 32. The number and proportion of satisfactory but limited and unsatisfactory smears by smear taker category.

Smear taker Group	Total number of smears taken	Satisfactory smears	Satisfactory but limited smears	Unsatisfactory smears
		Number (%)	Number (%)	Number (%)
Lay	28	27 (96.4)	1 (3.6)	0 (0.0)
Medical	70,890	54,414 (76.8)	15,852 (22.4)	624 (0.9)
Nurse	22,669	18,344 (80.9)	4,194 (18.5)	131 (0.6)
Specialist	9,050	6,971 (77.0)	1,917 (21.2)	162 (1.8)
Midwife	467	340 (72.8)	122 (26.1)	5 (1.1)
Total	103,104	80,096 (77.7)	22,086 (21.4)	922 (0.9)

APPENDIX 1

Table 33. 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
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Table 34. 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 35. 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 35 continued on next page											

Table 35 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 36. 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

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Table 36 continued

DHB	Age group (years)										Total
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	20-69
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 37. 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 38. 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
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† 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 39. 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 40. 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 (O)		Total Observed (O)		Total Observed (O)		
		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

Table 41. Segi's World Population

Age groups (years)	Population
20 - 24	8,000
25 - 29	8,000
30 - 34	6,000
35 - 39	6,000
40 - 44	6,000
45 - 49	6,000
50 - 54	5,000
55 - 59	4,000
60 - 64	4,000
65 - 69	3,000
Total	56,000