Annual Monitoring Report 2005

National Cervical Screening Programme

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

Contents

List of tables

List of figures

1. Executive summary

This report provides data on performance indicators of the National Cervical Screening Programme (NCSP) for the period 1 January 2005 to 31 December 2005. The definitions and target(s) for the indicators are included in the section relating to that indicator. The report does not include all of the national indicators. The definitions and targets for the indicators that are not included are listed in Appendix 1.

Cervical cancer incidence and mortality

In 2004 (the most recent year for which data were available) the age-standardised rate of cervical cancer incidence was 5.9 per 100,000 women of all ethnicities. This met the target of 8.6 or less per 100,000 women for the total population. In Māori women, the age-standardised cervical cancer incidence rate was 10.5 per 100,000 women. This met the target of 11.0 or less per 100,000 Māori women.

In 2004 (the most recent year for which data were available) the age-standardised rate of cervical cancer mortality was 2.4 per 100,000 women of all ethnicities. This met the target of 2.5 or less per 100,000 women for the total population. In Māori women, the age-standardised cervical cancer mortality rate was 5.5 per 100,000 women. This met the target of 6.0 or less per 100,000 Māori women.

It is not acceptable to have separate targets for Māori women since this serves to maintain rather than to reduce the current disparities in cervical cancer. The new targets set by the National Screening Unit (NSU) of the Ministry of Health (for 2006 to 2010) have the same targets for all ethnic groups.

Enrolment

The overall crude enrolment rate was 92.3%. In non-Māori, non-Pacific women 95.7% were enrolled on the NCSP Register. Lower enrolment percentages were clearly evident in Māori (76.5%) and Pacific (79.0%) women.

Participation

The overall unadjusted participation rate was 78.2%. The hysterectomy-adjusted rate was 85.0%. For the total population, neither the unadjusted nor the hysterectomy-

adjusted rates met the targets of 85% unadjusted and 90% hysterectomy-adjusted. There were large ethnic inequalities in the unadjusted participation rates, with Māori (60.9%) and Pacific (58.0%) women having approximately 20% lower participation rates than non-Māori, non-Pacific women (82.3%). The unadjusted participation rate target of 85% was only met in all women in one NCSP Region, and in non-Māori, non-Pacific women in four Regions. Hysterectomy-adjusted participation rates showed similar disparities; Māori women 62.7%, Pacific women 59.0%, and non-Māori, non-Pacific women 90.7%. The target of 90% for hysterectomy-adjusted participation rates was only met in all women in three NCSP Regions and in non-Māori, non-Pacific women in eight Regions.

Coverage

The overall unadjusted coverage rate was 63.2%. The hysterectomy-adjusted coverage rate was 69.2%. For the total population, neither the unadjusted nor the hysterectomy-adjusted figures met the targets of 80% unadjusted and 85% hysterectomy-adjusted. The unadjusted coverage rates demonstrated large ethnic inequalities with Māori (45.0%) and Pacific (41.7%) women having approximately 20% lower coverage than non-Māori, non-Pacific women (67.4%). The unadjusted coverage target of 80% was not met in any ethnic group. Hysterectomy-adjusted coverage rates showed similar disparities; Māori women 46.5%, Pacific women 42.4%, and non-Māori, non-Pacific women 75.0%. The target of 85% for hysterectomy-adjusted coverage rates was only met in non-Māori, non-Pacific women in two NCSP Regions.

Follow-up of women with high grade cytology

The overall proportion of 20 to 69 year old women with a high grade cytology result who had a histology specimen taken within 12 weeks of their smear was 77.2%. The proportion who had a histology specimen taken within 52 weeks of their smear was 91.8%. The targets of 90% of women with a histology report within 12 weeks of a high grade cytology result, and 99% within 52 weeks of a high grade smear were not met.

The timeliness of having a histological specimen taken following a high grade smear differed by ethnicity. Compared to non-Māori, non-Pacific women (79.5%), Māori (68.7%) and Pacific (59.9%) women were less likely to have had a histological specimen taken within 12 weeks. Māori (89.7%) and Pacific (85.3%) women were also

less likely than non-Māori, non-Pacific women (92.5%) to have had a histological specimen taken within 52 weeks. Similarly, Māori (7.1%) and Pacific (11.7%) women were more likely than non-Māori, non-Pacific women (6.1%) to not have had a histology report following a high grade cytology result.

Cytology reporting

The age-standardised reporting rate for 20 to 69 year old women with a smear reported as negative for dysplasia or malignancy was 932.3 per 1,000 women screened. The most frequently reported cytological abnormalities were atypical squamous cells of undetermined significance (ASC-US; 21.8 per 1,000 women) and low grade squamous intra-epithelial lesions (LSIL; 29.5 per 1,000 women). The age-standardised atypical squamous cells of undetermined significance, cannot exclude high grade (ASC-H) cytology rate for 20 to 69 year old women was 6.7 per 1,000 women, and the age-standardised high grade squamous intra-epithelial lesion (HSIL) rate for 20 to 69 year old women was 8.3 per 1,000 women. The age-standardised reporting rate for invasive squamous carcinoma of the cervix (ISCC), for 20 to 69 year old women, was 0.1 per 1,000 women.

There were lower rates of ASC-US cytology reporting in non-Māori, non-Pacific women (21.5 per 1,000 women screened) compared with Māori and Pacific women (23.4 and 24.8 per 1,000 women, respectively). Pacific women had lower rates of LSIL cytology (23.9 per 1,000 women screened) than non-Māori, non-Pacific women and Māori women (29.0 and 35.2 per 1,000 women, respectively). Māori women (12.5 per 1,000 women) had the highest HSIL cytology reporting rates compared with non-Māori, non-Pacific women and Pacific women (7.9 and 6.5 per 1,000 women, respectively). ISCC cytology reporting rates were highest amongst Pacific women (0.3 per 1,000 women) compared with non-Māori, non-Pacific women and Māori women (<0.1 and 0.2 per 1,000 women, respectively).

Histology reporting

In the total population, 44.8% of the histology specimens were classified as “normal” or “other non-neoplastic”, but this proportion was lower for Māori (37.2%) and Pacific (38.0%) women. Proportions of both LSIL and HSIL were higher in Māori (16.5% and

24.4%, respectively) compared to non-Māori, non-Pacific women (14.4% and 18.1%, respectively).

A total of 94 women (17 Māori, 6 Pacific, 71 non-Māori, non-Pacific) were diagnosed with ISCC, and 78 women (6 Māori, 9 Pacific, 63 non-Māori, non-Pacific) were diagnosed with invasive adenocarcinoma of the cervix.

Age-standardised rates of LSIL and HSIL for Māori (10.1 and 15.1 per 10,000 women, respectively) and Pacific (6.5 and 7.1 per 10,000 women, respectively) women were lower than those for non-Māori, non-Pacific women (15.0 and 19.5 per 10,000 women, respectively). However, the rates of these abnormalities in Māori and Pacific women compared to non-Māori, non-Pacific women should be interpreted with caution because of the lower coverage of cervical screening among Māori and Pacific women.

Laboratory smear reporting

Ten laboratories reported cervical cytology in 2005. Overall, 7.3% of smears were reported as abnormal, which was within the target of not more than 10%. Three laboratories reported abnormalities outside this target, with the highest reporting abnormalities in 21.1% of smears read. The overall proportion of smears reported as negative for dysplasia or malignancy was 92.7%, and all except one of the laboratories met the target of not more than 96%. The overall proportion of smears reported as HSIL was 1.0%, which met the target of not less than 0.6%. Two laboratories reported outside this target, one reporting 0.5% and one reporting 0.4% of the smears that they read as HSIL.

Laboratory cytology turn around time

All of the laboratories reporting cervical cytology met the seven-day cytology turn around time target of 90%. Four laboratories met the 14-day turn around time target of 100%. Four of the remaining six laboratories reported over 99% of the smears that they read within 14 days. The laboratory with the lowest reported proportion of smears read within 14 days had read 97.3% of their smears in that time.

There were differences in cytology turn around times between ethnic groups. The proportion of Māori women (97.1%) that had smears reported within seven working

days was less than those of Pacific (97.9%) and non-Māori, non-Pacific women (97.9%). The large number of women meant that these differences were statistically significant (P<0.001) and that they were therefore unlikely to have arisen through chance. The proportion of women that had smears reported within 14 working days was also lower in Māori women (99.1%) than in Pacific (99.2%) and non-Māori, non-Pacific women (99.3%). The large number of women meant that these differences were also statistically significant (P<0.001) and that they were therefore unlikely to have arisen through chance.

Laboratory histology turn around time

Twenty-seven laboratories reported cervical histology. Seven laboratories did not meet the five-day histology turn around time target of 90%. Six laboratories reported 100% of histology results within 10 working days.

There were differences in histology turn around times between ethnic groups. The proportion of Pacific women (77.8%) that had histology reported within five working days was less than that of Māori (85.7%) and non-Māori, non-Pacific women (88.7%). The large number of women meant that these differences were statistically significant (P<0.001) and that they were therefore unlikely to have arisen through chance. The proportion of Pacific women (9.8%) who had histology reported after 11 working days was higher than Māori women (5.8%) and non-Māori, non-Pacific women (5.0%). The large number of women meant that these differences were also statistically significant (P<0.001) and that they were therefore unlikely to have arisen through chance.

Satisfactory but limited and unsatisfactory smears by laboratory

Overall, 8.7% of smears were reported as satisfactory but limited, which was within the target of not more than 20%. All of the reporting laboratories met the target. Of the smears processed, 2.5% were reported as unsatisfactory for evaluation. This exceeded the target of not less than 0.5% and not more than 2.0%. Half (five) of the laboratories met the target. However, it should be noted that the NCSP adopted the 2001 revision of the Bethesda Coding System in July 2005, and as a result of this the numbers of smears that were categorised as satisfactory or unsatisfactory for evaluation were different to previous years. The targets for this indicator are currently under review because of these changes.

Satisfactory but limited and unsatisfactory smears by smear taker

Of the smears taken during the year, less than 1% were taken by lay smear takers, 61% by medical smear takers, 31% by nurses, 8% by specialists and less than 1% by midwives.

The proportion of satisfactory but limited smears was within the target of not more than 20% for each smear taker group as a whole. It should be noted, however, that as a result of the introduction of the 2001 revision of the Bethesda Coding System, the category of satisfactory but limited could only be reported for the first six months of the year (up to 30 June 2005). The targets for this indicator are currently under review because of these changes. All of the smear taker groups, when considered by annual volume, met the target of not more than 20% of smears being reported as satisfactory but limited.

The proportion of unsatisfactory smears exceeded the previous target range of 0.5 to 2.0% for each smear taker group as a whole except for nurse smear takers (1.8%). When smear taker groups were considered by annual volume, the proportion of unsatisfactory smears was less than 2.0% for lay smear takers who took less than 30 smears (0.0%), nurse smear takers with annual volumes of 30 to 100 smears (1.7%) and those who took more than 100 smears (1.8%), and midwives who took 30 to 100 smears (0.9%).

Colposcopic assessment

The colposcopic service indicators were unable to be calculated because the data required were not available. Nevertheless, the number of women with HSIL or ASC-H cytology results who were referred to District Health Board (DHB) colposcopy clinics, and the number of women with HSIL or ASC-H cytology results who were waiting longer than four weeks for colposcopic assessment at the end of each month, reported by DHB colposcopy services were provided by the NSU. Similarly the number of women with low grade cytology results who were referred to DHB colposcopy clinics, and the number of women who were waiting longer than 26 weeks for colposcopic assessment at the end of each month, reported by DHB colposcopy services were provided by the NSU.

One DHB colposcopy reporting unit did not provide data for all of this reporting year. For any colposcopy reporting unit, the highest reported number of women with a high grade cytology abnormality waiting longer than four weeks at the end of a reporting quarter for their first colposcopic assessment was 283. For any colposcopy reporting unit, the highest reported number of women with a low grade cytology abnormality waiting longer than 26 weeks at the end of a reporting quarter was 318.

Positive predictive value for women with a high grade smear

During the period 1 July 2004 to 30 June 2005, 90.9% of women who had had HSIL or ISCC cytology reports had a subsequent histology result recorded on the NCSP Register. Of these, 75.2% were confirmed as having a HSIL or more serious abnormality on histology (the positive predictive value (PPV)). This PPV is within the target range of 65 to 85%. Three laboratories reported a PPV outside the target range of 65 to 85%. One reported a PPV above the target range (87.4%) and two reported a PPV below the target range (61.7% and 64.3%).

During the period 1 July 2004 to 30 June 2005, 80.6% of women who had had an ASC-H cytology report had a subsequent histology result recorded on the NCSP Register. Of these, 44.6% were confirmed as having a HSIL or more serious abnormality on histology.

Short interval re-screening

The overall proportion of short interval re-screening was 11.7%, which is outside the target of not more than 10%. Women aged 60 to 69 years were least likely to be re-screened with a short interval. There was variation by ethnic group, with non-Māori, non-Pacific (11.8%) and Māori (11.0%) women having higher proportions of short interval re-screening than Pacific (10.9%) women. The target of not more than 10% was not met in any ethnic group.

2. Background

The National Cervical Screening Programme (NCSP) was established in 1990. The aim of the NCSP is to reduce the incidence and mortality rates of cervical cancer amongst women in New Zealand by the detection and treatment of precancerous squamous cell changes.

The NCSP is co-ordinated by the National Screening Unit (NSU) of the Ministry of Health, and involves women, smear takers, cytology laboratories, histology laboratories, colposcopists, health promoters and regional NCSP offices. The NCSP Register records the cervical cytology and histology results for women who have ever been enrolled in the Programme, unless they have formally withdrawn from the Programme. Information on the Register is used to help to ensure that the enrolled women receive smears at the recommended intervals and that they are referred for assessment and treatment when necessary. Aggregate information is also used to monitor the performance of the overall NCSP against national indicators and targets.

The NSU, through a committee of experts and a consultation process, established national indicators for the NCSP in 2000. Where it was considered appropriate and feasible, the NSU set targets for some indicators. For other indicators, changes over time are assessed. Some indicators, targets, and reporting frequencies have been updated due to further information obtained through the monitoring process.

The Independent Monitoring Group (IMG) of the NCSP has been responsible for providing independent quantitative monitoring of the NCSP since 2001. Part of this responsibility is to produce quarterly and annual reports of the national indicators for the NCSP.

In 2005 the Centre for Public Health Research (CPHR), Massey University was appointed through an open tender process to carry out the independent monitoring. The raw data from which the indicators (with the exception of the colposcopy indicators) included in these reports are calculated were provided to the CPHR by the NSU, in the form of an anonymised extract from the NCSP Register. The data extract was taken six

weeks after the end of the period to which this report relates. The colposcopy data were provided by the NSU and reformatted by the CPHR.

This report does not include all of the national indicators. Those not included are: delayed re-screening, stage of invasive cancer, interval cancer, programme sensitivity, opt-off rate, accuracy of negative cytology reports, residual high grade disease after treatment, waiting time for colposcopic assessment for high grade squamous intra-epithelial lesions (HSIL) or atypical squamous cells of undetermined significance, cannot exclude high grade (ASC-H), and waiting time for colposcopic assessment for low grade squamous intra-epithelial lesions (LSIL) or atypical squamous cells of undetermined significance (ASC-US). The definitions and targets for these indicators are listed in Appendix 1. The number of women with HSIL, ASC-H, LSIL or ASC-US cytology results who were referred to District Health Board (DHB) colposcopy clinics and those that waited more than the recommended time are recorded in this report.

3. Abbreviations

The following abbreviations are used in this report:

AIS:	Adenocarcinoma-in-situ
AGUS:	Atypical glandular cells of undetermined significance
ASC-H:	Atypical squamous cells of undetermined significance, cannot exclude high grade
ASC-US:	Atypical squamous cells of undetermined significance
CIN:	Cervical intra-epithelial neoplasia; I: low grade; II, III: high grade
CPHR:	Centre for Public Health Research, Massey University
DHB:	District Health Board
FIGO:	International Federation of Gynecology and Obstetrics
HPV:	Human papilloma virus
HSIL:	High grade squamous intra-epithelial lesion
ICD:	International Classification of Diseases
IMG:	Independent Monitoring Group
LSIL:	Low grade squamous intra-epithelial lesion
NCSP:	National Cervical Screening Programme
NOS:	Not otherwise specified
NSU:	National Screening Unit
NZHIS:	New Zealand Health Information Service
PPV:	Positive predictive value
ISCC:	Invasive squamous carcinoma of the cervix
SCL:	Southern Community Laboratories
SNOMED:	Systematised Nomenclature of Medicine

4. Methods

The NSU of the Ministry of Health, through a committee of experts and a consultation process, established national indicators for the NCSP in 2000. Where it was considered appropriate and feasible, the NSU set targets for the indicators. The results for these indicators are discussed in relation to the targets.

To calculate the indicators for this report anonymised data, provided by the NSU, of women enrolled on the NCSP Register were used. This report includes results for Māori, Pacific, Asian, and non-Māori, non-Pacific, non-Asian women. Both the National Kaitiaki Group and the Pacific Women's Data Advisory Group approved the use of data for enrolled women recorded as identifying with Māori and Pacific ethnicity, respectively, on the NCSP Register. For the purposes of the monitoring reports, women recorded on the NCSP Register as not being Māori or Pacific were grouped together as the non-Māori, non-Pacific group. This group includes women whose ethnic group was unknown, estimated as 7% of the total number of women on the NCSP Register. Therefore, Māori disparities shown in these monitoring reports are likely to be underestimated due to the underestimation of the number of Māori women on the NCSP Register.

Following consultation with the National Kaitiaki Group and the Pacific Women's Data Advisory Group, values of fewer than 10 women will not be published when data is broken down by age group or Region for Māori or Pacific women's data in independent monitoring Reports to avoid the possibility of these women being identifiable.

Unless otherwise stated, a woman's age at the end of the reporting period was used when calculating the indicators. The registration status and demographic details of each woman at the time of the data download were used for all calculations. Women were assigned to both a NCSP Region and a DHB area by the NCSP Register. Each woman was allocated to the NCSP Region and DHB area in which they lived, with two exceptions. Women whose address was unknown were allocated to the NCSP Region according to their last known smear taker, or according to the NCSP regional service office if the smear taker has indicated that the woman is no longer a patient there. Women who usually had their smears in a NCSP Region other than the one where they

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

The hysterectomy-adjustment used in this report uses the hysterectomy prevalence (both total and partial) in the New Zealand population modelled by the Public Health Intelligence unit of the Ministry of Health. The hysterectomy-adjusted population was based on the population in the 2001 Census and projected to 2005. The hysterectomy prevalence was estimated by extracting information about hysterectomy procedures from hospital discharge data. Central estimates of survival and hysterectomy incidence in 5-year age groups and 5-year periods by ethnicity were then used to determine the prevalence of hysterectomy in all age groups, ethnicities and years. The 2005 data was taken from these estimates. Further information about the hysterectomy prevalence methodology can be found in the document 'Setting Outcome Targets for the National Cervical Screening Programme. A Report for the National Screening Unit. November 2003' by S. Paul, M. Tobias, and C. Wright.

The hysterectomy prevalence data were applied to New Zealand population estimates from Statistics New Zealand (*i.e.* the appropriate proportions were 'removed' from the estimates) so that estimates of the number of women in the New Zealand population (by age and ethnicity) who had not had a hysterectomy prior to 1 January 2005 were obtained. These population estimates were then used as the denominator in the hysterectomy-adjusted calculations.

Age-specific rates in this report were age-standardised to Segi's world population. Segi's population is based on the age distribution of the world's population and is therefore not a New Zealand specific population. It is used to enable comparisons between countries that may have different age structures, such as Australia and New Zealand.

Difficulties with enrolment, participation and coverage calculations

There were several problems encountered when estimating the enrolment, participation and coverage indicators. These are summarised below. It is important to note that

because of these problems the results are estimations only and exact calculations are not possible because of limitations in the data available.

Hysterectomy adjustment

For each indicator, consideration needs to be given to the inclusion or exclusion of women who have had a hysterectomy, from the numerator (the number of women taken from the NCSP Register) and the denominator (the number of women taken from the whole population) of the calculation. Their inclusion or exclusion is complicated by the fact that these women may or may not have required further cervical smears, depending on the type of hysterectomy that they received, and that there is insufficient data recorded on the NCSP Register regarding this requirement for ongoing screening. Similarly, population adjustments based on hospital records of the proportion of women who have had a hysterectomy exclude all women who have had a total or a partial hysterectomy.

It appears that in previous reports, hysterectomy adjustment involved the removal of all women from the denominator (women taken from the whole population) who had had a full or partial hysterectomy, but the numerator (women taken from the NCSP Register) remained unadjusted (no women were removed) for the proportion of women who had had a full or partial hysterectomy. This calculation methodology is not ideal because women should either be excluded from both the numerator and the denominator, or from neither. However, to allow for comparison with previous reports, the calculations of hysterectomy-adjusted participation and coverage rates have been performed using the old and new methods, and the results have been provided as a range between which the true value is likely to lie. It is important to note that the targets relate to the old method of calculating these indicators. These are always the higher figure in the range.

Hysterectomy prevalence figures for the whole population (the denominator) were not available by Region or DHB, so age- and ethnicity-specific hysterectomy adjustment was applied to the population equally across each Region and DHB.

Overseas women

The NCSP Register contains some information on whether a woman is overseas or not, but does not contain data on exactly when a woman went overseas, or when she returned. The NSU are concerned that the "overseas" status of women on the NCSP Register is not reliable. Therefore, a decision was made to include all of the women who have an "overseas" status on the NCSP Register in these calculations (in the numerator), *i.e.* to assume that they are in New Zealand. Since a proportion of these women will actually be overseas, and the denominator (women taken from the whole population) is based on the population actually resident in New Zealand, all estimations here will be over-estimations, but this is likely to be around 2% or less.

Population estimates

Each of the indicators estimated in this section is a fraction, where the numerator was taken from the NCSP Register and the denominator from a population projection based on the 2001 Census population. Since this denominator was an estimate, there were instances, particularly where data were broken down by Region or age, where the estimate was inaccurate. This can lead to percentages over 100%. The extent to which such errors occurred cannot be estimated.

Other considerations

To fit with the population data provided to the CPHR, the time at which a woman's age was calculated was the midpoint of the current reporting period (*i.e.* 30 June 2005). For other calculations, age was often calculated at the end of the reporting period (*i.e.* 31 December 2005). As long as the numerator and denominator are consistent in any one calculation, this will not make an important difference to the numbers calculated.

The NSU is (at the time of writing) undertaking an international review to reconsider the calculation methods of these indicators. This review will inform decisions regarding possible amendments to the currently used indicator targets.

5. Cervical cancer incidence and mortality

All of the data in this section were provided by the New Zealand Health Information Service (NZHIS).

Cervical cancer incidence

Definition

Cervical cancer incidence is the annual rate of new registrations of invasive cervical cancer (International Classification of Diseases (ICD)10 code C53) per 100,000 women, age-standardised to Segi's world population.

Targets

The targets for cervical cancer incidence are 8.6 or less per 100,000 women for all women and 11.0 or less per 100,000 women for Māori women by 2005. These targets were set in 2001 by the NSU and the IMG of that time. It is not acceptable to have separate targets for Māori women since this serves to maintain rather than to reduce the current disparities in cervical cancer. The new targets set by the NSU (for 2006 to 2010) have the same targets for all ethnic groups.

Cervical cancer mortality

Definition

Cervical cancer mortality is the annual rate of deaths due to invasive cervical cancer (ICD10 code C53) 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 for all women and 6.0 or less per 100,000 women for Māori women by 2005.

There are no separate targets for cervical cancer incidence and mortality for Pacific women, as the relatively small size of the Pacific population in New Zealand results in

few cases of invasive cervical cancer in Pacific women each year. However, the new targets set by the NSU for 2006 to 2010 apply to Pacific women as well.

Results

Cervical cancer incidence rates for all women, Māori women, and Pacific women, age-standardised to Segi's world population, for the period 1996 to 2004 (2005 data were not available and 2004 data are provisional) are shown in Figure 1 and Table 1. Cervical cancer incidence rates for Asian women and 'Other' (non-Māori, non-Pacific, non-Asian) women, age-standardised to Segi's world population, for the period 2001 to 2004 (data prior to 2001 were not available and 2004 data are provisional) are also shown in Table 1.

Overall, between 1996 and 2004 incidence rates showed a decline from 10.0 to 5.9 per 100,000 women of all ethnicities. For Māori women the incidence rate decreased from 19.9 to 10.5 per 100,000 women between 1996 and 2004. For Pacific women the incidence rate decreased from 22.3 to 5.4 per 100,000 women between 1996 and 2004. For Asian women the incidence rate increased from 6.9 to 10.5 per 100,000 women between 2001 and 2004. 'Other' women had decreasing incidence rates from 2001 to 2004 (7.7 to 5.3 per 100,000 women). It should be noted that due to the relatively small numbers of women being diagnosed with cervical cancer in New Zealand these rates are subject to variation and should be interpreted with caution.

The target for cervical cancer incidence rates in all women of 8.6 or less per 100,000 women was met in 1998 and from 2000 to 2004 (Table 1). The target for incidence rates in Māori women of 11.0 or less per 100,000 women was met in 2003 and 2004 (Table 1).

Cervical cancer mortality rates for all women, Māori women, and Pacific women, age-standardised to Segi's world population, for the period 1996 to 2004 (2005 data were not available and 2004 data are provisional) are shown in Figure 2 and Table 2. Cervical cancer mortality rates for Asian women and 'Other' (non-Māori, non-Pacific, non-Asian) women, age-standardised to Segi's world population, for the period 2001 to 2004 (data prior to 2001 were not available and 2004 data are provisional) are also shown in Table 2.

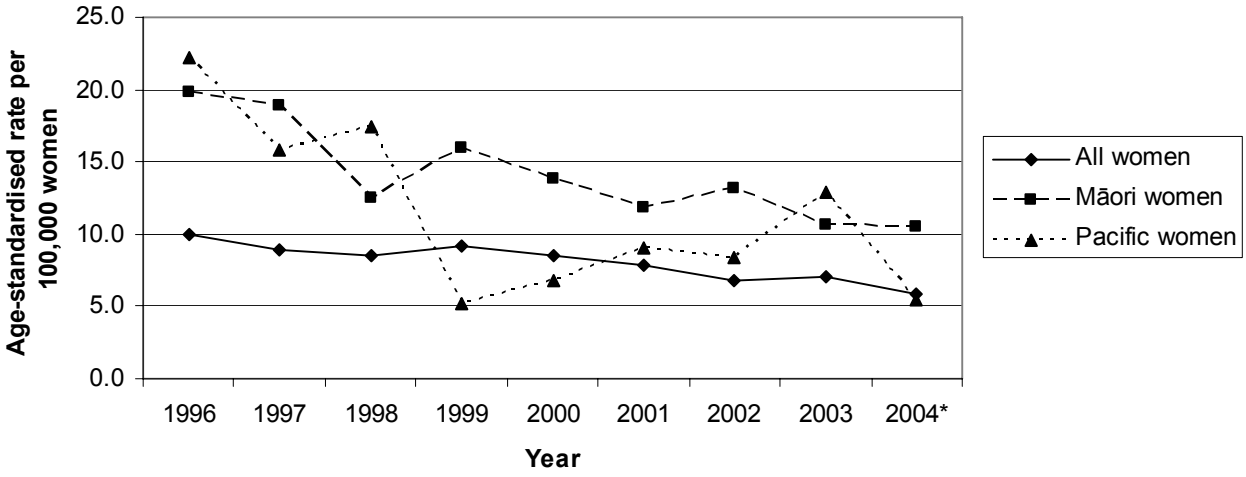
Overall, between 1996 and 2004 mortality rates showed a slight decline from 3.4 to 2.4 per 100,000 women of all ethnicities. For Māori women the mortality rate decreased from 11.8 to 5.5 per 100,000 women between 1996 and 2004. As with incidence rates, the pattern of cervical cancer mortality rates in Pacific women was less clear since it fluctuated throughout the nine year period. For Asian women the mortality rate decreased from 5.6 to 3.4 per 100,000 women between 2001 and 2004. Cervical cancer mortality rates in 'Other' women fluctuated between 2001 and 2004, suggesting no overall change. As with incidence rates, it should be noted that due to the relatively small numbers of women dying due to cervical cancer in New Zealand these rates are all subject to variation and should be interpreted with caution.

The target for cervical cancer mortality rates in all women of 2.5 or less per 100,000 women was met from 2000 to 2004 (Table 2). The target for mortality rates in Māori women of 6.0 or less per 100,000 women was met from 2002 to 2004 (Table 2).

Table 3 shows the number of new cervical cancer registrations, and Table 4 the number of cervical cancer deaths, by 5-year age group for all women, Māori women and Pacific women for the period 1996 to 2004.

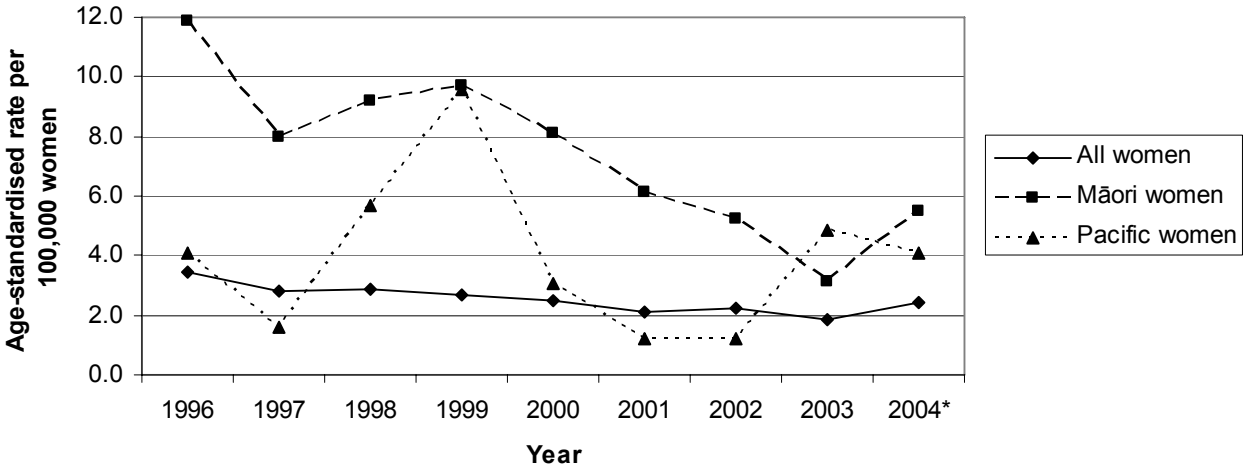
The five year average annual cervical cancer incidence and mortality rates (per 100,000 women) by 5-year age group for all women from 2000 to 2004 is shown in Figure 3, and for Māori women in Figure 4. For all women, incidence rates increased from age 15 to 34 years, and then roughly plateaued or slightly decreased over older age groups. Māori women had higher incidence rates than all women at all ages (except for under the age of 15 where no cervical cancer registrations were recorded). Mortality rates gradually increased for all women, peaking in the oldest age group (85 or more years). Mortality rates also rose gradually in Māori women, although the peak rate occurred in women aged 75 to 79 years.

Figure 1: Age-standardised cervical cancer incidence rates, 1996 to 2004*



*2004 data is provisional.
Rates per 100,000, age-standardised to Segi's world population.
Targets are: 8.6 or less per 100,000 women for all women, and 11.0 or less per 100,000 women for Māori women by 2005.
Source: New Zealand Health Information Service, 2007.

Figure 2: Age-standardised cervical cancer mortality rates, 1996 to 2004*



*2004 data is provisional.
Rates per 100,000, age-standardised to Segi's world population.
Targets are: 2.5 or less per 100,000 women for all women, and 6.0 or less per 100,000 women for Māori women by 2005.
Source: New Zealand Health Information Service, 2007.

Table 1: Cervical cancer incidence, 1996 to 2004*

Year	All women		Māori women		Pacific women		Asian women		'Other' women	
	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000
1996	219	10.0	41	19.9	15	22.3				
1997	218	8.9	45	18.9	10	15.8				
1998	210	8.5	31	12.6	13	17.4				
1999	222	9.2	40	16.0	5	5.2				
2000	205	8.5	38	13.8	6	6.8				
2001	189	7.9	31	11.8	7	9.1	9	6.9	142	7.7
2002	180	6.8	34	13.2	8	8.4	12	8.5	126	6.3
2003	177	7.0	29	10.6	12	12.9	19	12.8	117	6.1
2004*	154	5.9	27	10.5	6	5.4	18	10.5	103	5.3

*2004 data is provisional.
Rates per 100,000 age-standardised to Segi's world population.
Targets are: 8.6 or less per 100,000 women for all women, and 11.0 or less per 100,000 women for Māori women by 2005.
Source: New Zealand Health Information Service, 2007.

Table 2: Cervical cancer mortality, 1996 to 2004*

Year	All women		Māori women		Pacific women		Asian women		'Other' women	
	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000	Number	Age-standardised rate per 100,000
1996	82	3.4	22	11.8	3	4.1				
1997	73	2.8	19	8.0	2	1.6				
1998	77	2.9	17	9.2	4	5.7				
1999	71	2.7	20	9.7	7	9.6				
2000	66	2.5	17	8.1	3	3.1				
2001	63	2.1	13	6.1	1	1.2	5	5.6	44	1.9
2002	65	2.2	12	5.2	2	1.2	1	1.1	50	2.0
2003	58	1.8	8	3.1	5	4.8	2	2.0	43	1.7
2004*	71	2.4	15	5.5	4	4.1	5	3.4	47	2.0

*2004 data is provisional.
Rates per 100,000 age-standardised to Segi's world population.
Targets are: 2.5 or less per 100,000 women for all women, and 6.0 or less per 100,000 women for Māori women by 2005.
Source: New Zealand Health Information Service, 2007.

Table 3: Number of new cervical cancer registrations by 5-year age group, 1996 to 2004*

Age group (years)	All women	Māori women	Pacific women
	Number of cases, 1996-2004*	Number of cases, 1996-2004*	Number of cases, 1996-2004*
0-4	0	0	0
5-9	0	0	0
10-14	0	0	0
15-19	5	1	0
20-24	**24**	**7**	**0**
25-29	**109**	**23**	**4**
30-34	**197**	**29**	**5**
35-39	**236**	**54**	**9**
40-44	**232**	**57**	**11**
45-49	**204**	**43**	**11**
50-54	**171**	**36**	**12**
55-59	**115**	**24**	**13**
60-64	**110**	**15**	**9**
65-69	**104**	**9**	**4**
70-74	102	9	3
75-79	68	3	1
80-84	56	3	0
85+	41	3	0
Total	1,774	316	82

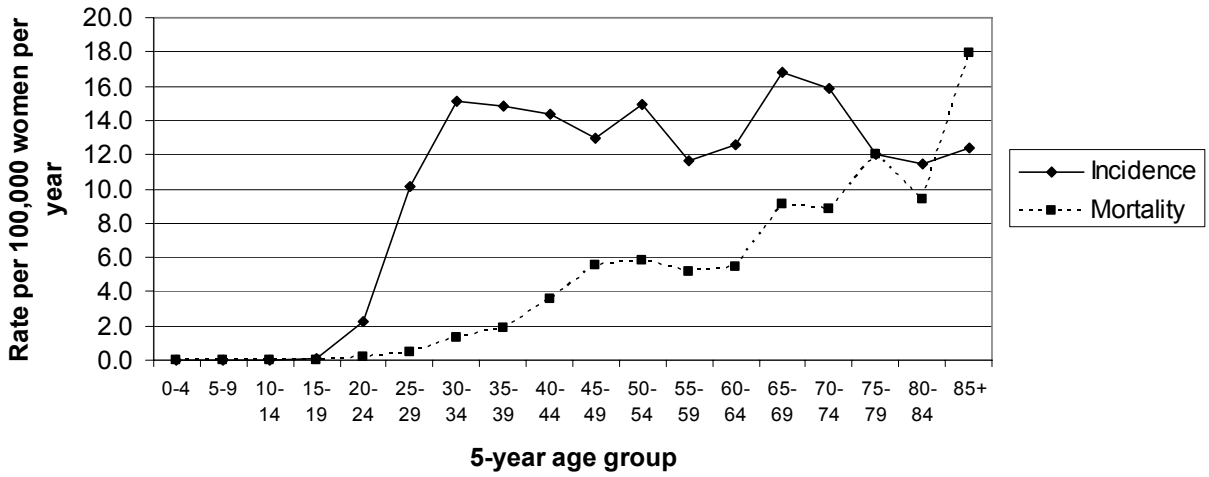
* 2004 data is provisional.
Source: New Zealand Health Information Service, 2007.

Table 4: Number of cervical cancer deaths by 5-year age group, 1996 to 2004*

Age group (years)	All women	Māori women	Pacific women
	Number of cases, 1996-2004*	Number of cases, 1996-2004*	Number of cases, 1996-2004*
0-4	0	0	0
5-9	0	0	0
10-14	0	0	0
15-19	1	1	0
20-24	**2**	**1**	**0**
25-29	**6**	**2**	**0**
30-34	**19**	**3**	**4**
35-39	**39**	**14**	**6**
40-44	**55**	**23**	**3**
45-49	**75**	**28**	**4**
50-54	**71**	**19**	**4**
55-59	**55**	**18**	**5**
60-64	**45**	**6**	**2**
65-69	**52**	**11**	**2**
70-74	58	8	1
75-79	61	5	0
80-84	40	2	0
85+	47	2	0
Total	626	143	31

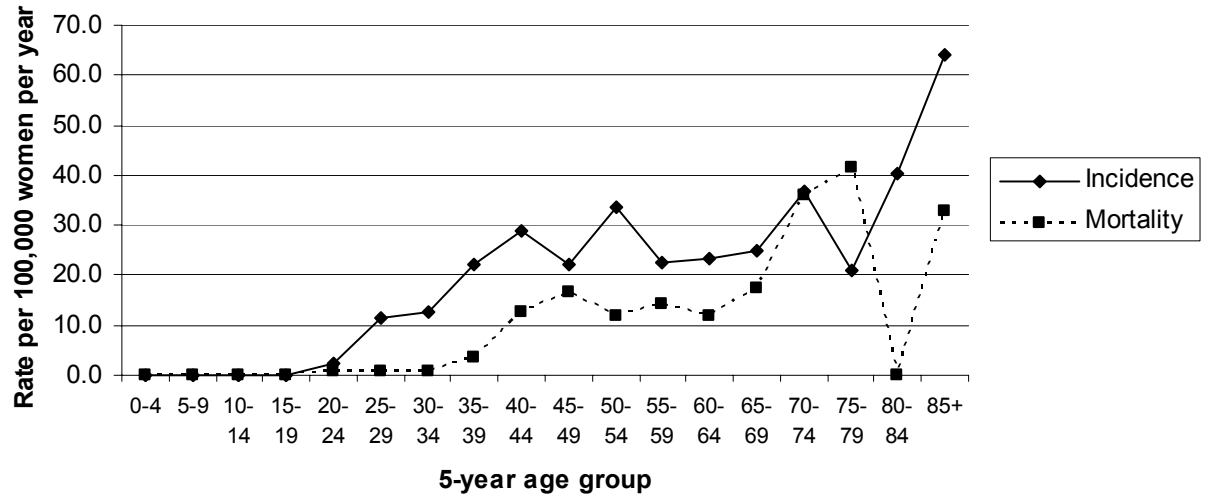
* 2004 data is provisional.
Source: New Zealand Health Information Service, 2007.

Figure 3: Five year average annual cervical cancer incidence and mortality rate (per 100,000) by 5-year age group for all women, 2000 to 2004*



*2004 data is provisional.
Target for incidence rates is: 8.6 or less per 100,000 women for all women by 2005. Target for mortality rates is: 2.5 or less per 100,000 women for all women by 2005.
Source: New Zealand Health Information Service, 2007.

Figure 4: Five year average annual cervical cancer incidence and mortality rate (per 100,000) by 5-year age group for Māori women, 2000 to 2004*



*2004 data is provisional.
Target for incidence rates is: 11.0 or less per 100,000 women for Māori women by 2005. Target for mortality rates is: 6.0 or less per 100,000 women for Māori women by 2005.
Source: New Zealand Health Information Service, 2007.

6. Enrolment

Definition

Enrolment is defined as the proportion of women who have had a smear or histology result recorded on the NCSP Register.

Note that enrolment is not adjusted for the prevalence of hysterectomy in the population.

Target

There are no targets for enrolment.

Calculation

The number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30 June 2005 and who had a smear or histology result recorded on the NCSP Register before 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, according to population projections from Statistics New Zealand based on the 2001 Census.

The different sources of data and population estimates lead to enrolment rates of over 100% in some age groups/Regions.

There were several problems encountered when estimating this indicator. Please see the 'Difficulties with enrolment, participation and coverage calculations' paragraphs (page 12) in Section 4 Methods.

Results

The proportions of enrolled women are shown in Table 5 to Table 9. On 31 December 2005 the number of 20 to 69 year old women that were enrolled on the NCSP Register was 1,199,168. Dividing this number by the projected population estimate of 20 to 69 year old women (1,299,130) gave an overall crude enrolment figure of 92.3%. This shows a slightly higher enrolment than that in 2004 (90.7%).

The results in Table 5 demonstrate large ethnic inequalities in enrolment across all NCSP Regions, with Māori and Pacific women having almost 20% lower enrolment figures than non-Māori, non-Pacific women. From a total population perspective, there were differences in enrolment rates across NCSP Regions, with the lowest enrolment rates in Nelson/Marlborough (86.4%) and West Coast (88.9%), and the highest enrolment rates in Tairawhiti (98.5%) and Wellington (98.1%). In 2004, the lowest enrolment rates were also in Nelson/Marlborough (85.4%) and West Coast (87.3%), and the highest enrolment rates were also in Tairawhiti (96.2%), Taranaki (94.7%) and Wellington (96.5%). Importantly, Māori and Pacific women in some Regions had particularly low enrolment figures. Those below 65% were Māori women in Canterbury (62.1%) and Nelson/Marlborough (60.9%), and Pacific women in Northland (64.6%) and West Coast (62.2%). In 2004, enrolment figures were also low for Māori women in Canterbury (60.2%) and Nelson/Marlborough (60.2%), and for Pacific women in Northland (62.6%) and West Coast (60.0%).

A similar pattern was seen when the data were analysed by DHB, as shown in Table 6. All DHBs had enrolments over 85% for the total population, but there were some DHBs in which enrolment of Māori and Pacific women was particularly low. Those below 65% were: Canterbury (61.0%), Nelson/Marlborough (60.9%), South Canterbury (53.4%), Southland (64.1%) and Waitemata (64.8%) for Māori women, and Northland (64.6%), Wairarapa (62.9%) and West Coast (62.2%) for Pacific women. Canterbury (59.2%) and South Canterbury (53.0%) had low enrolment figures for Māori women in 2004, as did Wairarapa (58.3%) for Pacific women.

Enrolment percentages by age and ethnic group are shown in Table 7. Overall in the total population the enrolment percentages rose to a peak in 30 to 34 year old women (110.7%) and then gradually declined to the lowest value for 65 to 69 year old women (65.3%). This mirrored the pattern that was seen in 2004. The pattern of enrolment by age within each ethnic group was similar, although the overall lower enrolment percentages in Māori and Pacific women were evident in all age groups compared to non-Māori, non-Pacific women. Particularly low enrolment (under 60%) was evident in Māori and Pacific women aged 20 to 24 years (56.4% Māori, 43.5% Pacific), Māori

women aged 60 to 64 years (56.5%) and Māori and Pacific women aged 65 to 69 years (53.6% Māori, 55.4% Pacific).

A more detailed breakdown of enrolment figures by age and Region is shown in Table 8, and by age and DHB in Table 9.

Table 5: The proportion of enrolled women aged 20 to 69 years by NCSP Region, 2005

NCSP Region	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
Auckland	91.3	74.3	80.9	95.0
Bay of Plenty	93.0	79.5	70.7	98.1
Canterbury	91.5	62.1	84.8	93.4
Hawke's Bay	91.0	77.0	71.4	95.8
Manawatu/Whanganui	90.6	79.0	74.4	93.3
Nelson/Marlborough	86.4	60.9	83.6	88.5
Northland	88.1	78.8	64.6	92.4
Otago/Southland	93.8	65.2	84.6	95.9
Tairawhiti	98.5	91.9	81.5	105.0
Taranaki	96.2	80.9	80.6	98.7
Waikato	91.7	79.2	75.3	95.2
Wellington	98.1	79.4	70.8	102.7
West Coast	88.9	70.9	62.2	90.4
Total	**92.3**	**76.5**	**79.0**	**95.7**

The different sources of data and population estimates lead to estimated enrolment rates of over 100% in some age groups/Regions.

Table 6: The proportion of enrolled women aged 20 to 69 years by District Health Board, 2005

DHB	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
Auckland	92.6	69.7	83.2	95.8
Bay of Plenty	92.1	76.6	69.8	96.9
Canterbury	90.7	61.0	84.0	92.6
Capital Coast	98.2	75.8	69.8	102.9
Counties Manakau	89.6	80.6	83.1	93.4
Hawke's Bay	91.0	77.0	71.4	95.8
Hutt Valley	96.1	81.8	72.7	100.6
Lakes	93.2	82.6	70.5	98.9
MidCentral	87.8	74.6	73.2	90.4
Nelson/Marlborough	86.4	60.9	83.6	88.5
Northland	88.1	78.8	64.6	92.4
Otago	94.8	66.4	85.1	96.5
South Canterbury	88.1	53.4	75.8	90.0
Southland	92.1	64.1	83.2	95.0
Tairawhiti	98.5	91.9	81.5	105.0
Taranaki	96.2	80.9	80.6	98.7
Waikato	91.7	79.2	75.3	95.2
Wairarapa	88.5	75.3	62.9	90.9
Waitemata	89.4	64.8	71.3	93.1
West Coast	88.9	70.9	62.2	90.4
Whanganui	91.7	81.0	73.5	95.2
Total	**91.6**	**75.8**	**78.8**	**95.0**

This table excludes 8,930 women with unknown DHB, which explains the difference in total enrolment figures between Table 5 and Table 6.
The different sources of data and population estimates lead to estimated enrolment rates of over 100% in some age groups/Regions.

Table 7: The proportion of enrolled women aged 20 to 69 years by 5-year age group, 2005

Age group (years)	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
20-24	69.0	56.4	43.5	74.5
25-29	102.7	86.0	79.3	109.0
30-34	110.7	89.3	92.6	116.5
35-39	107.1	88.4	100.8	110.9
40-44	102.3	84.2	95.2	105.6
45-49	96.5	78.4	86.4	99.6
50-54	90.1	70.2	76.2	93.2
55-59	81.4	63.7	66.1	83.7
60-64	71.8	56.5	60.7	73.5
65-69	65.3	53.6	55.4	66.6
Total	**92.3**	**76.5**	**79.0**	**95.7**

The different sources of data and population estimates lead to estimated enrolment rates of over 100% in some age groups/Regions.

Table 8: The proportion of enrolled women aged 20 to 69 years by 5-year age group and Region, 2005

NCSP Region	Age group (years)									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
	%	%	%	%	%	%	%	%	%	%
Auckland	61.4	91.3	108.7	108.2	103.7	97.0	91.4	82.6	72.6	64.7
Bay of Plenty	79.9	110.2	112.0	106.6	102.4	95.9	88.6	79.3	69.7	65.1
Canterbury	71.1	112.8	109.9	106.1	101.5	94.6	89.2	79.3	67.5	60.5
Hawke's Bay	75.7	111.3	111.3	101.5	99.8	93.0	86.5	78.7	69.9	65.8
Manawatu/Whanganui	71.0	112.6	109.3	103.9	99.2	95.3	85.8	79.2	70.0	67.2
Nelson/Marlborough	74.6	105.7	107.1	100.3	96.4	91.9	85.4	76.8	69.3	63.5
Northland	65.6	91.1	98.2	97.9	96.2	94.3	87.3	78.2	69.1	64.2
Otago/Southland	72.3	115.4	117.5	108.0	101.2	97.9	90.8	83.6	73.4	67.7
Tairawhiti	84.4	115.5	116.9	111.2	101.4	99.6	95.9	89.8	74.8	74.2
Taranaki	89.2	115.9	114.4	107.2	102.8	94.9	91.7	84.1	77.9	72.2
Waikato	69.2	114.5	110.3	105.1	100.7	95.0	88.6	79.0	71.1	65.0
Wellington	74.1	106.4	116.6	113.7	106.6	103.0	95.0	86.1	78.0	69.3
West Coast	76.4	96.9	108.2	99.9	98.8	89.1	85.4	82.2	72.6	62.2

The different sources of data and population estimates lead to estimated enrolment rates of over 100% in some age groups/Regions.

Table 9: The proportion of enrolled women aged 20 to 69 years by 5-year age group and District Health Board, 2005

DHB	Age group (years)									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
	%	%	%	%	%	%	%	%	%	%
Auckland	58.1	87.6	111.1	111.5	108.1	100.5	94.1	84.7	74.4	65.7
Bay of Plenty	79.4	107.0	109.4	105.2	102.0	96.5	88.9	79.2	70.3	66.4
Canterbury	68.9	110.5	108.7	105.5	100.7	94.1	88.7	78.8	67.0	59.5
Capital Coast	70.6	104.7	116.4	115.3	108.2	104.4	95.5	86.2	78.6	68.5
Counties Manakau	63.4	94.3	107.0	106.5	101.2	94.0	88.3	78.7	68.8	60.9
Hawke's Bay	75.7	111.3	111.3	101.5	99.8	93.0	86.5	78.7	69.9	65.8
Hutt Valley	77.0	104.1	112.8	108.6	103.1	99.4	94.6	83.9	76.5	71.3
Lakes	79.4	113.4	114.2	107.5	101.9	93.4	86.8	77.7	67.6	61.3
MidCentral	67.5	109.4	105.8	100.3	96.1	92.6	84.4	77.0	67.5	66.3
Nelson/Marlborough	65.6	91.1	98.2	97.9	96.2	94.3	87.3	78.2	69.1	64.2
Northland	74.6	105.7	107.1	100.3	96.4	91.9	85.4	76.8	69.3	63.5
Otago	71.3	121.0	122.0	110.4	102.7	100.2	92.7	84.3	75.2	68.5
South Canterbury	75.8	111.7	104.0	97.7	99.9	91.7	86.1	78.1	67.8	64.7
Southland	75.1	107.0	111.0	104.4	99.0	94.3	87.4	82.1	70.2	66.3
Tairawhiti	84.4	115.5	116.9	111.2	101.4	99.6	95.9	89.8	74.8	74.2
Taranaki	89.2	115.9	114.4	107.2	102.8	94.9	91.7	84.1	77.9	72.2
Waikato	69.2	114.5	110.3	105.1	100.7	95.0	88.6	79.0	71.1	65.0
Wairarapa	82.4	103.3	107.9	101.9	94.0	94.6	82.4	80.5	69.6	62.7
Waitemata	61.7	90.3	104.4	104.4	100.1	94.9	89.5	82.0	72.4	65.1
West Coast	76.4	96.9	108.2	99.9	98.8	89.1	85.4	82.2	72.6	62.2
Whanganui	73.6	108.1	108.7	106.9	101.4	97.1	85.7	81.0	73.5	67.0

The different sources of data and population estimates lead to estimated enrolment rates of over 100% in some age groups/Regions.

7. Participation

Definitions

Unadjusted participation is defined as the number of women who have had a smear or histology result recorded on the NCSP Register in the six years prior to the end of the reporting period, as a proportion of all women.

Adjusted participation is defined as the number of women who have not had a hysterectomy and have had a smear or histology result recorded on the NCSP Register in the six years prior to the end of the reporting period, as a proportion of all women who have not had a hysterectomy.

Targets

The target for unadjusted participation is 85%, and for hysterectomy-adjusted participation the target is 90%.

Calculations

For unadjusted participation rates the number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30 June 2005 and who had a smear or histology result recorded on the NCSP Register between 1 January 2000 and 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, according to population projections from Statistics New Zealand based on the 2001 Census.

Adjusted participation was calculated in two ways. The first method was that assumed to have been used in previous annual reports, the second was a revised method (see the 'Difficulties with enrolment, participation and coverage calculations' paragraphs (page 12) in Section 4 Methods) preferred by the CPHR.

For adjusted participation (previous method), the number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30

June 2005 and who had a smear or histology result recorded on the NCSP Register between 1 January 2000 and 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, and **who had not had a hysterectomy (partial or total)** according to hysterectomy-adjusted population projections from Statistics New Zealand based on the 2001 Census. This method is described in the 'Results' section as 'hysterectomy-adjusted (denominator only)'.

For adjusted participation (preferred method), the number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30 June 2005 and **had not had a hysterectomy (partial or total)** on 30 June 2005, and who had a smear or histology result recorded on the NCSP Register between 1 January 2000 and 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, and who **had not had a hysterectomy (partial or total)** according to hysterectomy-adjusted population projections from Statistics New Zealand based on the 2001 Census. This method is described in the 'Results' section as 'hysterectomy-adjusted (numerator and denominator)'.

Results

The estimated participation rates of 20 to 69 year old women are shown in Table 10 to Table 17. At 31 December 2005 1,016,062 women aged 20 to 69 years were recorded on the NCSP Register as being alive on 30 June 2005, and having had a smear or histology result recorded on the NCSP Register between 1 January 2000 and 31 December 2005. Dividing this number by the projected population estimate of 20 to 69 year old women (1,299,130) gives an overall crude participation figure of 78.2%. This is almost identical to the overall crude participation figure of 78.6% in 2004. Taking into account the prevalence of hysterectomy in the population, participation is likely to range between 85.0% (according to the CPHR's preferred method) and 86.7% (according to the previously used method), as shown in Table 11. For the total population, neither the unadjusted nor hysterectomy-adjusted rates met the targets of 85% and 90%, respectively.

The unadjusted participation rates by ethnicity and NCSP Region shown in Table 10 demonstrate large ethnic inequalities, with Māori (60.9%) and Pacific (58.0%) women having over 20% lower participation rates than non-Māori, non-Pacific women (82.3%). The same pattern was seen for participation rates in 2004 when the participation rate for Māori women was 61.8% and for Pacific women 58.0%, compared to 82.5% for non-Māori, non-Pacific women. From a total population perspective, there were some differences in participation across NCSP Regions, with the lowest participation rates in Auckland (75.4%), Northland (74.7%), and West Coast (75.4%), and the highest participation rates in Tairawhiti (84.6%), Taranaki (85.7%) and Wellington (83.1%). These NCSP Regions also had the lowest and highest participation rates (respectively) in 2004; Auckland (75.9%), Northland (74.7%), and West Coast (75.4%), and Tairawhiti (86.2%), Taranaki (85.3%) and Wellington (83.7%). Importantly, Māori and Pacific women in some Regions had particularly low participation rates. Those below 55% were Māori women in Canterbury (52.3%), Nelson/Marlborough (51.7%) and Otago/Southland (53.7%), and Pacific women in Northland (49.9%), Wellington (51.8%) and West Coast (53.3%). These NCSP Regions also had low participation rates in 2004 for Māori women; Canterbury (51.9%), Nelson/Marlborough (51.5%) and Otago/Southland (53.6%), and for Pacific women Northland (49.2%), Wellington (51.3%) and West Coast (50.0%).

The target of 85% for unadjusted participation rates was not met in any population group as a whole, although Taranaki (85.7%) met the target in the total population, and Bay of Plenty (85.7%), Tairawhiti (93.1%), Taranaki (88.6%) and Wellington (87.9%) met the target in the non-Māori, non-Pacific population. The target for unadjusted participation rates was not met in 2004 for any population group as a whole.

Hysterectomy-adjusted participation rates by ethnicity and Region are shown in Table 11. Similar disparities were evident, with the participation rate in the total population being 85.0%, the Māori population 62.7%, the Pacific population 59.0%, and the non-Māori, non-Pacific population 90.7% (according to the CPHR's preferred method). These rates are almost identical to those in 2004 (total population 85.2%, Māori women 63.5%, Pacific women 58.9%, and non-Māori, non-Pacific women 90.7%). The target of 90% for hysterectomy-adjusted participation rates was not met in the

total population, Māori women or Pacific women, but was met in non-Māori, non-Pacific women. In the total population three Regions met the target, Tairawhiti (90.0%), Taranaki (94.7%) and Wellington (90.4%). No Regions met the target in Māori or Pacific women, but eight Regions met the target in non-Māori, non-Pacific women: Bay of Plenty (95.8%), Hawke's Bay (94.3%), Northland (91.9%), Otago/Southland (90.5%), Tairawhiti (103.2%), Taranaki (99.0%), Waikato (90.3%), and Wellington (96.8%). The same NCSP Regions met the target in non-Māori, non-Pacific women in 2004.

A similar pattern was seen when the data were analysed by DHB, see Table 12 (unadjusted) and Table 13 (hysterectomy-adjusted). The only DHB to meet the 85% unadjusted participation target (Table 12) in the total population was Taranaki (85.7%), compared with two DHBs in 2004, Tairawhiti (86.2%) and Taranaki (85.3%). No DHB met this target in Māori or Pacific women. Six DHBs met the target in non-Māori, non-Pacific women: Bay of Plenty (85.3%), Capital and Coast (88.0%), Hutt Valley (85.5%), Lakes (85.2%), Tairawhiti (93.1%), and Taranaki (88.6%). The same DHBs met the target in non-Māori, non-Pacific women in 2004 with almost identical rates. DHBs in which participation rates for Māori and Pacific women were particularly low (under 55%) were: Auckland (53.0%), Canterbury (51.9%), Nelson/Marlborough (51.7%), South Canterbury (45.1%), Southland (51.6%), and Waitemata (51.6%) for Māori women; and Capital and Coast (50.3%), Hutt Valley (54.7%), Lakes (53.7%), Northland (49.9%), Wairarapa (44.6%), Waitemata (53.4%), and West Coast (53.3%) for Pacific women. Each of these DHBs (except Lakes, 56.3%) had participation rates below 55% for Māori and Pacific women in 2004.

The same patterns were seen for the hysterectomy-adjusted participation rates (Table 13). Two DHBs met the target of 90% in the total population, Tairawhiti (90.0%), and Taranaki (94.7%), compared to three DHBs in 2004 (Capital and Coast 90.3%, Tairawhiti 91.4%, and Taranaki 94.0%). Eleven DHBs met the target in the non-Māori, non-Pacific population, Bay of Plenty (95.5%), Capital and Coast (96.2%), Hawke's Bay (94.3%), Hutt Valley (94.9%), Lakes (95.0%), Northland (91.9%), Otago (91.5%), Tairawhiti (103.2%), Taranaki (99.0%), Waikato (90.3%), and Wairarapa (92.5%). In 2004 10 of these DHBs met the target in the non-Māori, non-

Pacific population, Bay of Plenty (95.2%), Capital and Coast (96.9%), Hawke's Bay (93.5%), Hutt Valley (95.2%), Lakes (95.8%), Northland (90.6%), Otago (91.6%), Tairawhiti (103.1%), Taranaki (98.0%), and Waikato (90.2%). As in 2004, no DHBs met the target in Māori or Pacific women.

Participation rates by age and ethnic group are shown in Table 14 (unadjusted) and Table 15 (hysterectomy-adjusted). For unadjusted participation rates (Table 14) in the total population, participation was highest in 30 to 34 year old women (91.6%) and lowest in 65 to 69 year old women (54.4%). Overall in the total population, younger women (aged 20 to 54 years) had higher rates of participation than older women (55 to 69 years). The pattern of participation by age within each ethnic group was similar, although the overall lower participation rates in Māori and Pacific women were evident in all age groups compared to non-Māori, non-Pacific women. Particularly low participation (under 50%) was evident in Māori women aged 55 to 69 years, and in Pacific women aged 20 to 24 and 55 to 69 years. Exactly the same picture was seen in 2004.

Similar patterns were found with the hysterectomy-adjusted participation rates (Table 15), although in the total population the lowest rate was recorded in women aged 20 to 24 years (67.7%). Another difference was that in Pacific women and non-Māori, non-Pacific women the lowest unadjusted participation rate (Table 14) was in 65 to 69 year old women (41.0% and 55.9%, respectively) whereas the lowest hysterectomy-adjusted participation rate (Table 15) was in 20 to 24 year old women (42.2% and 73.4%, respectively). Similar rates were found for hysterectomy-adjusted participation in 2004.

A more detailed breakdown of participation rates by age and Region is shown in Table 16 and by age and DHB in Table 17.

Table 10: Unadjusted participation rates for women aged 20 to 69 years by NCSP Region, 2005

NCSP Region	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
Auckland	75.4	57.7	58.8	80.0
Bay of Plenty	79.6	63.3	55.0	85.7
Canterbury	79.5	52.3	68.1	81.4
Hawke's Bay	78.4	61.4	56.5	84.2
Manawatu/Whanganui	76.3	63.0	57.2	79.4
Nelson/Marlborough	76.3	51.7	66.4	78.4
Northland	74.7	62.3	49.9	80.3
Otago/Southland	81.1	53.7	66.1	83.2
Tairawhiti	84.6	75.7	64.5	93.1
Taranaki	85.7	68.3	61.7	88.6
Waikato	77.9	61.5	56.9	82.4
Wellington	83.1	64.8	51.8	87.9
West Coast	75.4	58.4	53.3	76.9
Total	**78.2**	**60.9**	**58.0**	**82.3**

Target: 85% for unadjusted participation.

Table 11: Hysterectomy-adjusted participation rates for women aged 20 to 69 years by NCSP Region, 2005

NCSP Region	Hysterectomy-adjusted (denominator only)				Hysterectomy-adjusted (numerator and denominator)			
	All women	Māori women	Pacific women	Non-Māori, non-Pacific women	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%	%	%	%	%
Auckland	82.5	60.1	60.1	89.0	82.0	59.9	59.9	88.3
Bay of Plenty	89.0	66.4	56.1	98.3	86.8	64.9	55.1	95.8
Canterbury	89.0	54.4	69.4	91.6	86.1	53.2	68.0	88.5
Hawke's Bay	88.0	64.4	57.8	96.8	85.8	63.1	57.2	94.3
Manawatu/Whanganui	85.4	65.9	58.4	90.4	82.9	64.6	57.4	87.6
Nelson/Marlborough	86.2	54.1	67.9	89.2	83.7	52.4	65.7	86.6
Northland	84.2	65.6	51.1	93.5	82.9	64.8	50.9	91.9
Otago/Southland	90.7	55.9	67.3	93.7	87.7	54.5	66.0	90.5
Tairawhiti	93.0	79.7	66.2	106.8	90.0	77.4	64.1	103.2
Taranaki	96.6	71.5	62.4	101.1	94.7	70.5	61.3	99.0
Waikato	86.6	64.2	58.2	93.4	83.9	62.7	56.4	90.3
Wellington	91.4	67.5	52.9	98.0	90.4	67.0	52.5	96.8
West Coast	85.7	61.2	53.3	88.0	81.9	58.1	51.1	84.2
Total	**86.7**	**63.7**	**59.3**	**92.6**	**85.0**	**62.7**	**59.0**	**90.7**

Target: 90% for hysterectomy-adjusted participation.
The different sources of data and population estimates lead to estimated participation rates of over 100% in some age groups/Regions.

Table 12: Unadjusted participation rates for women aged 20 to 69 years by District Health Board, 2005

DHB	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
Auckland	74.9	53.0	57.6	79.0
Bay of Plenty	79.6	61.3	55.7	85.3
Canterbury	78.9	51.9	67.7	80.8
Capital Coast	83.0	61.9	50.3	88.0
Counties Manakau	73.4	62.4	61.5	79.0
Hawke's Bay	78.4	61.4	56.5	84.2
Hutt Valley	80.7	66.6	54.7	85.5
Lakes	78.4	65.6	53.7	85.2
MidCentral	74.8	60.7	56.3	77.6
Nelson/Marlborough	76.3	51.7	66.4	78.4
Northland	74.7	62.3	49.9	80.3
Otago	82.3	56.0	67.4	83.9
South Canterbury	77.4	45.1	67.4	79.2
Southland	79.0	51.6	62.8	81.9
Tairawhiti	84.6	75.7	64.5	93.1
Taranaki	85.7	68.3	61.7	88.6
Waikato	77.9	61.5	56.9	82.4
Wairarapa	78.5	62.3	44.6	81.5
Waitemata	75.9	51.6	53.4	79.8
West Coast	75.4	58.4	53.3	76.9
Whanganui	76.2	64.1	58.5	80.1

Target: 85% for unadjusted participation.

Table 13: Hysterectomy-adjusted participation rates for women aged 20 to 69 years by District Health Board, 2005

DHB	Hysterectomy-adjusted (denominator only)				Hysterectomy-adjusted (numerator and denominator)			
	All women	Māori women	Pacific women	Non-Māori, non-Pacific women	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%	%	%	%	%
Auckland	81.1	55.3	58.9	86.5	80.7	55.2	58.8	86.0
Bay of Plenty	89.5	64.4	56.9	98.0	87.2	62.7	55.7	95.5
Canterbury	88.1	53.9	69.0	90.7	85.1	52.6	67.5	87.5
Capital Coast	90.6	64.3	51.4	97.1	89.8	64.0	51.2	96.2
Counties Manakau	80.1	65.0	62.8	88.8	79.6	64.8	62.7	88.1
Hawke's Bay	88.0	64.4	57.8	96.8	85.8	63.1	57.2	94.3
Hutt Valley	89.3	69.3	56.0	96.3	88.0	68.6	55.3	94.9
Lakes	86.7	68.7	54.8	97.1	84.9	67.5	54.0	95.0
MidCentral	83.6	63.4	57.5	88.0	81.3	62.4	56.5	85.5
Nelson/Marlborough	86.2	54.1	67.9	89.2	83.7	52.4	65.7	86.6
Northland	84.2	65.6	51.1	93.5	82.9	64.8	50.9	91.9
Otago	92.2	58.1	68.6	94.6	89.3	56.8	67.2	91.5
South Canterbury	88.8	47.0	68.8	91.4	86.8	46.4	67.7	89.3
Southland	88.2	53.8	63.9	92.2	85.1	52.3	63.2	88.8
Tairawhiti	93.0	79.7	66.2	106.8	90.0	77.4	64.1	103.2
Taranaki	96.6	71.5	62.4	101.1	94.7	70.5	61.3	99.0
Waikato	86.6	64.2	58.2	93.4	83.9	62.7	56.4	90.3
Wairarapa	89.6	65.3	45.3	94.4	87.9	64.7	44.2	92.5
Waitemata	83.9	53.7	54.6	89.4	83.3	53.5	54.5	88.6
West Coast	85.7	61.2	53.3	88.0	81.9	58.1	51.1	84.2
Whanganui	85.7	67.2	59.8	92.3	82.9	65.5	59.1	89.1

Target: 90% for hysterectomy-adjusted participation.
The different sources of data and population estimates lead to estimated participation rates of over 100% in some age groups/Regions.

Table 14: Unadjusted participation rates for women aged 20 to 69 years by 5-year age group, 2005

Age group (years)	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
20-24	67.7	54.3	42.2	73.4
25-29	90.8	72.0	65.6	97.8
30-34	91.6	69.5	66.9	98.1
35-39	88.9	67.2	67.9	94.4
40-44	85.5	64.3	63.2	90.3
45-49	80.6	59.5	58.7	84.7
50-54	74.2	52.8	53.5	77.7
55-59	66.5	47.3	47.8	69.1
60-64	59.5	43.8	44.5	61.4
65-69	54.4	41.4	41.0	55.9
Total	**78.2**	**60.9**	**58.0**	**82.3**

Target: 85% for unadjusted participation.

Table 15: Hysterectomy-adjusted participation rates for women aged 20 to 69 years by 5-year age group, 2005

Age group (years)	Hysterectomy-adjusted (denominator only)				Hysterectomy-adjusted (numerator and denominator)			
	All women	Māori women	Pacific women	Non-Māori, non-Pacific women	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%	%	%	%	%
20-24	67.7	54.3	42.2	73.4	67.7	54.3	42.2	73.4
25-29	90.8	72.0	65.6	97.8	90.7	72.0	65.6	97.7
30-34	91.8	69.8	66.9	98.3	91.5	69.5	66.9	98.0
35-39	89.8	68.0	68.3	95.3	88.9	67.4	68.2	94.3
40-44	89.3	66.7	64.2	94.5	87.4	65.3	63.7	92.5
45-49	89.6	64.8	61.1	94.9	86.4	62.1	60.1	91.4
50-54	90.5	60.7	57.4	96.2	86.8	57.9	56.5	92.1
55-59	89.5	55.7	51.8	95.2	86.1	53.8	51.2	91.5
60-64	85.0	50.3	48.0	90.8	81.8	48.7	47.3	87.3
65-69	77.3	46.3	43.9	82.3	74.5	45.0	43.2	79.3
Total	**86.7**	**63.7**	**59.3**	**92.6**	**85.0**	**62.7**	**59.0**	**90.7**

Target: 90% for hysterectomy-adjusted participation.

Table 16: Hysterectomy-adjusted participation rates for women aged 20 to 69 years by 5-year age group and Region, 2005

NCSP Region	Age groups (years)									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
	%	%	%	%	%	%	%	%	%	%
Auckland	60.2	80.4	88.6	87.2	86.4	86.1	87.8	85.7	80.2	70.5
Bay of Plenty	77.7	96.6	94.2	90.2	88.0	85.6	84.8	85.6	80.7	73.9
Canterbury	70.0	100.8	92.8	90.7	88.9	85.5	85.5	84.8	78.3	71.7
Hawke's Bay	73.7	97.6	93.5	86.1	87.8	83.7	84.4	85.2	80.7	78.0
Manawatu/Wanganui	69.3	97.8	88.9	85.5	83.6	83.8	80.7	81.8	78.6	76.8
Nelson/Marlborough	64.9	82.3	85.9	85.6	86.4	88.4	88.1	85.7	83.5	77.7
Northland	71.9	92.1	89.4	85.1	82.4	83.7	83.6	83.1	77.8	72.5
Otago/Southland	71.5	101.7	96.3	91.6	89.3	88.5	87.2	87.4	84.8	77.9
Tairawhiti	81.1	100.5	97.5	92.5	88.5	88.4	93.0	88.1	81.9	79.0
Taranaki	87.1	103.6	100.5	95.3	93.5	91.1	94.1	95.7	95.7	88.6
Waikato	68.1	99.8	90.4	87.4	84.5	81.9	82.8	83.6	81.2	74.4
Wellington	72.9	95.7	96.0	94.1	91.1	92.6	92.3	92.0	90.3	80.9
West Coast	74.7	85.9	90.9	87.3	84.8	77.9	77.3	82.2	79.1	67.3

Note: because of the large number of figures in this table, the calculations for hysterectomy adjustment have only been performed once, using the adjustment for the numerator and the denominator (the CPHR's preferred method).
Target: 90% for hysterectomy-adjusted participation.
The different sources of data and population estimates lead to estimated participation rates of over 100% in some age groups/Regions.

Table 17: Hysterectomy-adjusted participation rates for women aged 20 to 69 years by 5-year age group and District Health Board, 2005

DHB	Age groups (years)									
	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69
	%	%	%	%	%	%	%	%	%	%
Auckland	57.1	77.3	88.0	85.7	86.9	87.5	89.0	86.6	80.2	69.2
Bay of Plenty	77.4	93.6	92.8	90.6	88.7	86.8	86.3	87.0	82.9	77.7
Canterbury	67.9	98.9	92.1	90.3	88.1	84.9	84.8	83.8	77.4	70.0
Capital Coast	69.7	94.5	95.1	94.8	92.0	93.7	93.0	92.4	90.3	79.6
Counties Manukau	61.8	81.7	87.2	85.1	82.9	81.8	82.8	79.7	74.4	64.9
Hawke's Bay	73.7	97.6	93.5	86.1	87.8	83.7	84.4	85.2	80.7	78.0
Hutt Valley	75.6	92.6	93.6	90.0	87.7	88.3	89.8	87.1	87.5	82.3
Lakes	76.9	100.2	94.9	88.4	85.8	81.8	80.8	81.3	75.5	64.6
MidCentral	66.1	96.1	87.5	83.5	82.0	82.7	80.1	81.0	77.0	76.1
Nelson/Marlborough	64.9	82.3	85.9	85.6	86.4	88.4	88.1	85.7	83.5	77.7
Northland	71.9	92.1	89.4	85.1	82.4	83.7	83.6	83.1	77.8	72.5
Otago	70.7	105.6	99.7	94.5	91.1	91.1	89.4	90.3	88.3	79.1
South Canterbury	74.4	102.0	89.2	87.1	90.8	85.8	86.2	87.9	81.7	79.9
Southland	73.7	95.9	91.5	87.5	86.5	84.4	83.5	82.2	78.8	75.8
Tairawhiti	81.1	100.5	97.5	92.5	88.5	88.4	93.0	88.1	81.9	79.0
Taranaki	87.1	103.6	100.5	95.3	93.5	91.1	94.1	95.7	95.7	88.6
Waikato	68.1	99.8	90.4	87.4	84.5	81.9	82.8	83.6	81.2	74.4
Wairarapa	79.2	93.6	94.7	91.3	84.6	89.4	84.8	92.4	86.2	77.3
Waitemata	60.6	80.6	88.2	88.6	87.4	86.9	88.9	87.6	82.8	74.1
West Coast	74.7	85.9	90.9	87.3	84.8	77.9	77.3	82.2	79.1	67.3
Whanganui	71.0	93.3	88.2	86.8	84.6	83.2	79.5	80.7	80.2	76.3

Note: because of the large number of figures in this table, the calculations for hysterectomy adjustment have only been performed once, using the adjustment for the numerator and the denominator (the CPHR's preferred method).
Target: 90% for hysterectomy-adjusted participation.
The different sources of data and population estimates lead to estimated participation rates of over 100% in some age groups/Regions.

8. Coverage

Definitions

Unadjusted coverage is defined as the number of women who have had a smear or histology result recorded on the NCSP Register in the three years prior to the end of the reporting period, as a proportion of all women.

Adjusted coverage is defined as the number of women who have not had a hysterectomy and have had a smear or histology result recorded on the NCSP Register in the three years prior to the end of the reporting period, as a proportion of all women who have not had a hysterectomy.

Targets

The target for unadjusted coverage is 80%, and for hysterectomy-adjusted coverage the target is 85%.

Calculations

For unadjusted coverage rates the number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30 June 2005 and who had a smear or histology result recorded on the NCSP Register between 1 January 2003 and 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, according to population projections from Statistics New Zealand based on the 2001 Census.

Adjusted coverage was calculated in two ways. The first method was that assumed to have been used in previous annual reports, the second was a revised method (see the 'Difficulties with enrolment, participation and coverage calculations' paragraphs (page 12) in Section 4 Methods) preferred by the CPHR.

For adjusted coverage (previous method), the number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30 June

2005 and who had a smear or histology result recorded on the NCSP Register between 1 January 2003 and 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, and **who had not had a hysterectomy (partial or total)** according to hysterectomy-adjusted population projections from Statistics New Zealand based on the 2001 Census. This method is described in the 'Results' section as 'hysterectomy-adjusted (denominator only)'.

For adjusted coverage (preferred method), the number of women aged 20 to 69 years at 30 June 2005 who were recorded on the NCSP Register as being alive on 30 June 2005, and **had not had a hysterectomy (partial or total)** on 31 December 2005, and who had a smear or histology result recorded on the NCSP Register between 1 January 2003 and 31 December 2005 was calculated. This number of women was then divided by the number of women aged 20 to 69 years who were alive and resident in New Zealand on 30 June 2005, and who **had not had a hysterectomy (partial or total)** according to hysterectomy-adjusted population projections from Statistics New Zealand based on the 2001 Census. This method is described in the 'Results' section as 'hysterectomy-adjusted (numerator and denominator)'.

Results

The estimated coverage rates are shown in Table 18 to Table 25. At 31 December 2005 820,747 women aged 20 to 69 years were recorded on the NCSP Register as being alive on 30 June 2005, and having had a smear or histology reported on the NCSP Register between 1 January 2003 and 31 December 2005. Dividing this number by the projected population estimate (1,299,130) gives an overall unadjusted coverage rate of 63.2% (Table 18). Taking into account the prevalence of hysterectomy in the population (the hysterectomy adjustment), coverage is likely to range between 69.2% (according to the CPHR's preferred method) and 70.0% (according to the previously used method), as shown in Table 19. For the total population, neither the unadjusted nor hysterectomy-adjusted figures met the targets of 80% and 85%, respectively. Neither of these targets were met in 2004 either, when the overall unadjusted coverage rate was 63.5% and hysterectomy-adjusted coverage ranged between 69.4%

(according to the CPHR's preferred method) and 70.3% (according to the previously used method).

The results in Table 18 demonstrate large ethnic inequalities in coverage, with Māori (45.0%) and Pacific (41.7%) women having approximately 20% lower coverage than non-Māori, non-Pacific women (67.4%). From a total population perspective, there were some differences in coverage across NCSP Regions, with the lowest coverage rates in Auckland (59.4%) and Northland (60.4%), and the highest coverage rates in Tairawhiti (68.1%) and Taranaki (73.0%). Auckland (59.8%) and Northland (60.3%) also had the lowest coverage rates in 2004, while Tairawhiti (69.3%) and Taranaki (73.5%) also had the highest. Importantly, Māori and Pacific women in some Regions had particularly low coverage figures. Those below 40% were Māori women in Canterbury (39.7%), and Pacific women in the Bay of Plenty (39.8%) and Wellington (38.3%). In 2004, five NCSP Regions had coverage rates below 40%; Māori women in Canterbury (39.6%), and Pacific women in Northland (38.1%), Waikato (39.5%), Wellington (38.2%) and West Coast (37.5%).

The target of 80% for unadjusted coverage rates was not met in any population subgroup as a whole, or in any Region. This was also the case in 2004.

Hysterectomy-adjusted coverage rates by ethnicity and Region are shown in Table 19. Similar disparities were evident, with the coverage rate in the total population being 69.2%, the Māori population 46.5%, the Pacific population 42.4%, and the non-Māori, non-Pacific population 75.0% (according to the CPHR's preferred method). In 2004 the same disparities were evident with almost identical rates. The target of 85% for hysterectomy-adjusted coverage rates was not met in any population subgroup as a whole, or in any Regions except for Tairawhiti (88.6%) and Taranaki (85.9%) in non-Māori, non-Pacific women. In 2004 Tairawhiti (88.8%) and Taranaki (86.0%) in non-Māori, non-Pacific women were the only NCSP Regions to met the target of 85% for hysterectomy-adjusted coverage rates.

A similar pattern was seen when the data were analysed by DHB, see Table 20 (unadjusted) and Table 21 (hysterectomy-adjusted). No DHBs met the 80% unadjusted coverage target in either the total population or any population subgroup

(Table 20). The target was also not met by any DHBs in 2004. DHBs in which coverage rates for Māori and Pacific women were particularly low (under 40%) were Auckland (38.2%), Canterbury (39.6%), South Canterbury (34.0%) and Waitemata (37.2%) for Māori women, and Capital and Coast (37.4%), Lakes (36.7%), Wairarapa (32.6%) and Waitemata (39.1%) for Pacific women. In 2004, Auckland (39.1%), Canterbury (39.5%) and Waitemata (38.3%) also had coverage rates under 40% for Māori women, and Capital and Coast (37.6%), Wairarapa (29.7%) and Waitemata (39.7%) also had coverage rates under 40% for Pacific women.

The same patterns were seen for the hysterectomy-adjusted coverage rates (Table 21). Two DHBs met the 85% target in non-Māori, non-Pacific women, Tairawhiti (88.6%) and Taranaki (85.9%). No DHBs met the target in Māori or Pacific women. In 2004 Tairawhiti (88.8%) and Taranaki (86.0%) met the 85% target in non-Māori, non-Pacific women, and no DHBs met the target in Māori or Pacific women.

Coverage rates by age and ethnic group are shown in Table 22 (unadjusted) and Table 23 (hysterectomy-adjusted). For unadjusted coverage rates (Table 22) in the total population, coverage was highest in 30 to 34 year old women (71.9%) and lowest in 65 to 69 year old women (44.0%). This pattern was the same in 2004 when 30 to 34 year old women had an unadjusted coverage rate of 72.7% and 65 to 69 year old women had a rate of 43.8%. Overall in the total population, younger women (20 to 54 years) had higher rates of coverage than older women (55 to 69 years). The pattern of coverage by age within each ethnic group was similar, although the overall lower coverage rates in Māori and Pacific women were evident in all age groups compared to non-Māori, non-Pacific women. Particularly low coverage (under 40%) was evident in Māori women aged 50 to 69 years, and in Pacific women aged 20 to 24 and 50 to 69 years. This pattern was also the same in 2004.

Similar patterns were found with the hysterectomy-adjusted coverage rates (Table 23), although in the total population, and in non-Māori, non-Pacific women the lowest rate was recorded in women aged 20 to 24 years (58.1% and 63.7%, respectively). Similar rates were found for hysterectomy-adjusted coverage in 2004.

A more detailed breakdown of coverage rates by age and Region is shown in Table 24 and by age and DHB in Table 25.

Table 18: Unadjusted coverage rates for women aged 20 to 69 years by NCSP Region, 2005

NCSP Region	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%
Auckland	59.4	41.3	41.7	64.2
Bay of Plenty	65.2	46.6	39.8	72.1
Canterbury	64.6	39.7	49.6	66.4
Hawke's Bay	63.2	44.1	40.6	69.6
Manawatu/Wanganui	61.9	47.2	41.9	65.3
Nelson/Marlborough	64.3	40.1	52.9	66.3
Northland	60.4	46.4	40.0	66.7
Otago/Southland	67.5	42.2	51.8	69.5
Tairawhiti	68.1	56.7	49.5	78.9
Taranaki	73.0	53.8	45.7	76.1
Waikato	63.2	44.7	42.7	68.3
Wellington	67.4	49.5	38.3	72.0
West Coast	61.8	43.0	44.4	63.4
Total	**63.2**	**45.0**	**41.7**	**67.4**

Target: 80% for unadjusted coverage.

Table 19: Hysterectomy-adjusted coverage rates for women aged 20 to 69 years by NCSP Region, 2005

NCSP Region	Hysterectomy-adjusted (denominator only)				Hysterectomy-adjusted (numerator and denominator)			
	All women	Māori women	Pacific women	Non-Māori, non-Pacific women	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%	%	%	%	%
Auckland	65.0	43.1	42.6	71.4	64.8	42.9	42.6	71.1
Bay of Plenty	72.9	48.9	40.7	82.7	71.7	48.1	40.1	81.3
Canterbury	72.3	41.3	50.6	74.8	70.9	40.7	49.8	73.2
Hawke's Bay	70.9	46.2	41.6	80.0	69.9	45.5	41.3	79.0
Manawatu/Wanganui	69.3	49.3	42.8	74.4	68.3	48.8	42.2	73.3
Northland	68.1	48.8	40.9	77.6	67.8	48.6	40.7	77.2
Nelson/Marlborough	72.6	42.0	54.0	75.5	71.5	41.3	52.2	74.3
Otago/Southland	75.5	43.9	52.7	78.2	73.9	43.1	51.7	76.5
Tairawhiti	74.9	59.7	50.8	90.6	73.1	58.2	48.7	88.6
Taranaki	82.3	56.3	46.2	86.9	81.3	55.7	46.2	85.9
Waikato	70.3	46.7	43.6	77.4	68.8	45.9	42.6	75.7
Wellington	74.1	51.5	39.2	80.2	73.7	51.3	39.0	79.8
West Coast	70.2	45.1	44.4	72.6	68.8	44.2	44.4	71.1
Total	**70.0**	**47.0**	**42.6**	**75.9**	**69.2**	**46.5**	**42.4**	**75.0**

Target: 85% for hysterectomy-adjusted coverage.

Table 20: Unadjusted coverage rates for women aged 20 to 69 years by District Health Board, 2005

DHB	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%
Auckland	58.7	38.2	40.2	62.8
Bay of Plenty	65.9	45.4	43.0	72.2
Canterbury	64.3	39.6	49.4	66.1
Capital Coast	67.6	48.0	37.4	72.2
Counties Manukau	57.1	44.6	43.6	63.5
Hawke's Bay	63.2	44.1	40.6	69.6
Hutt Valley	64.8	49.8	40.3	69.6
Lakes	63.1	48.0	36.7	71.0
MidCentral	61.1	45.7	40.5	64.2
Nelson/Marlborough	64.3	40.1	52.9	66.3
Northland	60.4	46.4	40.0	66.7
Otago	68.8	44.5	52.7	70.3
South Canterbury	62.7	34.0	50.5	64.4
Southland	65.4	40.0	49.5	68.0
Tairawhiti	68.1	56.7	49.5	78.9
Taranaki	73.0	53.8	45.7	76.1
Waikato	63.2	44.7	42.7	68.3
Wairarapa	64.7	48.7	32.6	67.6
Waitemata	60.9	37.2	39.1	64.7
West Coast	61.8	43.0	44.4	63.4
Whanganui	61.1	47.7	46.9	65.4

Target: 80% for unadjusted coverage.

Table 21: Hysterectomy-adjusted coverage rates for women aged 20 to 69 years by District Health Board, 2005

DHB	Hysterectomy-adjusted (denominator only)				Hysterectomy-adjusted (numerator and denominator)			
	All women	Māori women	Pacific women	Non-Māori, non-Pacific women	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%	%	%	%	%
Auckland	63.5	39.9	41.1	68.7	63.3	39.8	41.0	68.5
Bay of Plenty	74.1	47.7	44.0	83.0	72.9	46.8	43.2	81.6
Canterbury	71.8	41.1	50.4	74.2	70.3	40.5	49.6	72.6
Capital Coast	73.8	49.9	38.3	79.7	73.5	49.8	38.1	79.4
Counties Manukau	62.3	46.5	44.5	71.3	62.1	46.4	44.5	71.0
Lakes	69.8	50.3	37.4	81.0	68.8	49.6	37.0	79.8
Hawke's Bay	70.9	46.2	41.6	80.0	69.9	45.5	41.3	79.0
Hutt Valley	71.7	51.8	41.2	78.4	71.2	51.6	41.0	77.9
MidCentral	68.2	47.7	41.4	72.7	67.3	47.3	40.8	71.7
Nelson/Marlborough	72.6	42.0	54.0	75.5	71.5	41.3	52.2	74.3
Northland	68.1	48.8	40.9	77.6	67.8	48.6	40.7	77.2
Otago	77.0	46.2	53.6	79.2	75.5	45.5	52.5	77.6
South Canterbury	71.9	35.4	51.6	74.2	71.0	35.3	50.5	73.3
Southland	72.9	41.8	50.4	76.5	71.1	40.8	49.6	74.6
Tairawhiti	74.9	59.7	50.8	90.6	73.1	58.2	48.7	88.6
Taranaki	82.3	56.3	46.2	86.9	81.3	55.7	46.2	85.9
Waikato	70.3	46.7	43.6	77.4	68.8	45.9	42.6	75.7
Wairarapa	73.8	51.1	33.1	78.3	73.1	50.7	33.1	77.6
Waitemata	67.4	38.7	40.0	72.5	67.1	38.5	40.0	72.1
West Coast	70.2	45.1	44.4	72.6	68.8	44.2	44.4	71.1
Whanganui	68.8	50.0	48.0	75.4	67.7	49.5	47.6	74.1

Target: 85% for hysterectomy-adjusted coverage.

Table 22: Unadjusted coverage rates for women aged 20 to 69 years by 5-year age group, 2005

Age group (years)	All women %	Māori women %	Pacific women %	Non-Māori, non-Pacific women %
20-24	58.1	44.2	34.6	63.7
25-29	69.5	51.8	46.0	76.1
30-34	71.9	49.8	46.3	78.6
35-39	71.1	48.4	46.5	77.1
40-44	69.4	46.9	44.6	74.6
45-49	65.5	43.4	41.8	69.8
50-54	60.4	39.0	39.5	64.0
55-59	54.7	35.5	35.6	57.3
60-64	49.5	34.2	33.5	51.4
65-69	44.0	30.3	29.7	45.7
Total	**63.2**	**45.0**	**41.7**	**67.4**

Target: 80% for unadjusted coverage.

Table 23: Hysterectomy-adjusted coverage rates for women aged 20 to 69 years by 5-year age group, 2005

Age group (years)	Hysterectomy-adjusted (denominator only)				Hysterectomy-adjusted (numerator and denominator)			
	All women	Māori women	Pacific women	Non-Māori, non-Pacific women	All women	Māori women	Pacific women	Non-Māori, non-Pacific women
	%	%	%	%	%	%	%	%
20-24	58.1	44.2	34.6	63.7	58.1	44.2	34.6	63.7
25-29	69.5	51.8	46.0	76.1	69.5	51.8	46.0	76.1
30-34	72.1	50.0	46.3	78.7	71.9	49.8	46.3	78.5
35-39	71.9	49.0	46.8	77.8	71.3	48.6	46.7	77.2
40-44	72.4	48.6	45.3	78.0	71.4	47.8	45.0	76.9
45-49	72.8	47.2	43.5	78.2	71.2	45.8	43.0	76.5
50-54	73.8	44.8	42.4	79.2	72.2	43.6	42.0	77.5
55-59	73.7	41.8	38.6	79.0	72.2	41.0	38.3	77.4
60-64	70.7	39.3	36.2	76.0	69.2	38.4	35.7	74.3
65-69	62.6	33.9	31.8	67.2	61.3	33.3	31.5	65.7
Total	**70.0**	**47.0**	**42.6**	**75.9**	**69.2**	**46.5**	**42.4**	**75.0**

Target: 85% for hysterectomy-adjusted coverage.

Table 24: Hysterectomy-adjusted coverage rates for women aged 20 to 69 years by 5-year age group and Region, 2005

NCSP Region	Age group (years)									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
	%	%	%	%	%	%	%	%	%	%
Auckland	51.3	60.7	68.2	68.1	68.6	68.3	70.1	69.0	64.3	54.9
Bay of Plenty	64.9	75.4	74.8	73.5	72.2	72.3	72.0	73.7	70.2	61.5
Canterbury	60.8	78.0	73.8	74.0	73.4	71.3	71.8	71.9	66.5	58.7
Hawke's Bay	61.8	73.7	72.4	69.0	72.0	69.1	70.9	72.7	69.3	65.8
Manawatu/Wanganui	58.7	74.7	69.8	68.3	69.3	70.6	68.3	70.3	68.6	65.0
Nelson/Marlborough	57.8	66.9	70.9	72.0	74.3	76.6	76.2	73.5	73.9	67.8
Northland	59.8	71.3	71.4	68.3	66.9	69.1	70.0	70.1	67.0	59.1
Otago/Southland	62.6	78.6	78.1	76.0	76.0	75.9	75.7	75.9	74.5	66.3
Tairawhiti	67.4	78.8	75.0	73.9	72.3	72.8	78.1	74.0	69.1	64.0
Taranaki	74.9	83.8	83.9	80.8	80.0	79.2	82.7	85.0	87.0	77.6
Waikato	58.9	75.9	70.6	70.7	69.2	67.7	70.3	71.7	69.9	63.3
Wellington	63.1	72.9	75.7	75.6	74.9	76.9	77.3	76.9	76.5	66.8
West Coast	64.3	68.4	73.8	70.8	70.5	66.2	67.3	72.6	71.5	55.4

Note: because of the large number of figures in this table, the calculations for hysterectomy adjustment have only been performed once, using the adjustment for the numerator and the denominator.
Target: 85% for hysterectomy-adjusted coverage.

Table 25: Hysterectomy-adjusted coverage rates for women aged 20 to 69 years by 5-year age group and District Health Board, 2005

DHB	Age group (years)									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
	%	%	%	%	%	%	%	%	%	%
Auckland	48.9	58.0	66.7	66.1	68.9	69.9	70.9	69.0	63.0	52.9
Bay of Plenty	64.3	74.2	74.8	74.9	73.7	74.1	73.9	75.2	72.6	66.1
Canterbury	59.3	76.9	73.7	74.0	72.8	71.0	71.5	71.3	65.9	57.3
Capital Coast	61.3	71.7	75.2	76.3	76.3	78.0	78.4	77.4	76.8	66.0
Counties Manukau	52.0	61.5	66.3	65.4	64.3	63.6	65.5	63.9	58.8	50.6
Hawke's Bay	61.8	73.7	72.4	69.0	72.0	69.1	70.9	72.7	69.3	65.8
Hutt Valley	63.5	71.1	73.3	71.8	71.3	72.6	74.2	72.3	73.3	67.0
Lakes	64.9	76.5	74.0	70.2	69.1	68.0	67.5	69.6	64.5	50.5
MidCentral	56.8	73.9	69.4	66.8	68.3	69.6	67.8	69.8	67.7	64.7
Nelson/Marlborough	57.8	66.9	70.9	72.0	74.3	76.6	76.2	73.5	73.9	67.8
Northland	59.8	71.3	71.4	68.3	66.9	69.1	70.0	70.1	67.0	59.1
Otago	62.5	80.2	81.4	78.7	78.0	77.9	77.8	78.7	78.5	67.3
South Canterbury	62.1	79.8	70.5	70.5	75.7	70.4	70.7	73.4	68.6	65.5
Southland	62.9	76.2	73.3	72.1	73.0	72.6	72.0	70.7	67.5	64.7
Tairawhiti	67.4	78.8	75.0	73.9	72.3	72.8	78.1	74.0	69.1	64.0
Taranaki	74.9	83.8	83.9	80.8	80.0	79.2	82.7	85.0	87.0	77.6
Waikato	58.9	75.9	70.6	70.7	69.2	67.7	70.3	71.7	69.9	63.3
Waitemata	52.1	61.8	69.9	71.1	70.8	69.7	71.8	71.6	68.0	58.6
Wairarapa	65.4	74.9	77.3	75.3	68.9	76.5	71.9	78.4	74.3	65.0
West Coast	64.3	68.4	73.8	70.8	70.5	66.2	67.3	72.6	71.5	55.4
Whanganui	57.7	71.0	68.2	69.3	69.8	69.9	67.2	69.1	68.5	64.4

Note: because of the large number of figures in this table, the calculations for hysterectomy adjustment have only been performed once, using the adjustment for the numerator and the denominator.
Target: 85% for hysterectomy-adjusted coverage.

9. Follow-up of women with high grade cytology

Definition

High grade cytology is defined as a cytology result of ASC-H, HSIL, or more serious abnormality according to the hierarchy of the Revised Bethesda Coding System (1998 & 2001) (Appendix 2). The timeliness of the follow-up of women with a high grade cytology result is estimated using the time elapsed before a histology specimen is taken following the high grade cytology result.

Targets

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

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

and

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

Calculation

The timeliness of the follow-up of women with a high grade cytology result was estimated for each reporting quarter in 2005. The number of enrolled women aged 20 to 69 years at 31 March 2005, 30 June 2005, 30 September 2005, and 31 December 2005 who had a high grade cytology result recorded on the NCSP Register between 1 April 2003 and 31 March 2004, 1 July 2003 and 30 June 2004, 1 October 2003 and 30 September 2004, and 1 January 2003 and 31 December 2004 was calculated. For each of these women the time between the date that the smear was taken and the date that the subsequent histology specimen was taken (including specimens taken up to five days before the smear) was calculated. The numbers of women with a histology specimen taken within 12 weeks, between 13 and 26 weeks, between 27 and 52 weeks and more than 52 weeks after their ASC-H, HSIL or more serious cytology result were expressed as proportions of the total number of women with a high grade cytology taken in the year prior to the reporting quarter. The number and proportion

of women with no histology result recorded on the NCSP Register following their high grade cytology were also calculated. This indicator was calculated for women of all ethnic groups, and separately for Māori, Pacific and non-Māori, non-Pacific women. It was also calculated for each NCSP Region and DHB.

It should be noted that this indicator has been recalculated to allow for the change in definition of ASC-H/HSIL (*i.e.* the move of Bethesda code C3A2B7 to ASC-H) adopted by the Independent Monitoring Group of the NCSP in 2006, and the data used was from the annual data extract of the NCSP Register (taken six weeks after the end of the reporting period) so the results given here are not the same as those in Quarterly Monitoring Reports 18 to 21.

Results

The overall proportion of 20 to 69 year old women with a high grade cytology result who had a histology specimen taken within 12 weeks of their smear was 77.2% for the 2005 reporting period (Table 32), compared to 79.4% in 2004. The proportion who had a histology specimen taken within 52 weeks of their smear was 91.8%, compared to 93.0% in 2004. There was little change in the results for the follow-up of women with high grade cytology during 2005, and the two targets were not reached for any ethnic group or in any NCSP Regions or DHBs.

The timeliness of having a histological specimen taken following a high grade smear differed by ethnicity, as shown in Table 26 to Table 31 and Figure 5 and Figure 6. Compared to non-Māori, non-Pacific women, Māori and Pacific women were less likely to have a histological specimen taken within the recommended time periods. The differences by ethnicity persisted for all reporting quarters and for all time periods following a high grade smear.

Figure 5 (and Table 26) shows the proportion of women in each ethnic group who had a histology specimen taken within 12 weeks of their high grade or more serious smear for each reporting quarter. For each reporting quarter the proportion of non-Māori, non-Pacific women who had a histology specimen taken within 12 weeks of their high grade or more serious smear was greater than those for Māori and Pacific women. The

proportions of non-Māori, non-Pacific women and Māori women who had a histology specimen taken within 12 weeks decreased slightly in each reporting quarter (81.2% to 78.1% and 71.0% to 66.3%, respectively), while the proportion of Pacific women fluctuated and decreased slightly over the reporting year (62.7% to 61.8%).

Figure 6 (and Table 29) shows the proportion of women in each ethnic group who had a histology specimen taken within 52 weeks of their high grade or more serious smear for each reporting quarter. For each reporting quarter the proportion of Pacific women who had a histology specimen taken within 52 weeks of their high grade or more serious smear (85.2% to 87.3%) was less than those for Māori (90.9% to 88.1%) and non-Māori, non-Pacific women (93.7% to 91.6%). For each reporting quarter the proportion of Māori women who had a histology specimen taken within 52 weeks of their high grade or more serious smear was less than those for non-Māori, non-Pacific women.

The proportion of women with no histology report following a high grade smear is shown by ethnicity for each reporting quarter in Table 31. Pacific (9.9% to 13.1%) and Māori (6.2% to 8.8%) women were more likely to have no histological specimen taken following a high grade smear than non-Māori, non-Pacific women (4.9% to 7.2%), and the differences by ethnicity persisted across all of the reporting quarters.

The follow-up of women with high grade cytology results by NCSP Region is shown in Table 32. The proportion of women in each Region who had a high grade smear result with a subsequent histology specimen taken within 12 weeks varied amongst the Regions. In most of the Regions the proportion decreased over the reporting year. The greatest decline over the reporting year in the proportion of women who had a histology specimen taken within 12 weeks of a high grade smear was reported in the Hawke's Bay Region (from 82.5% to 61.9%). The greatest improvement over the reporting year was reported in the Bay of Plenty Region (from 73.3% to 77.7%). The target of 90% was not met by any NCSP Region, compared to once in 2004 by the West Coast Region in the July to September 2004 reporting quarter.

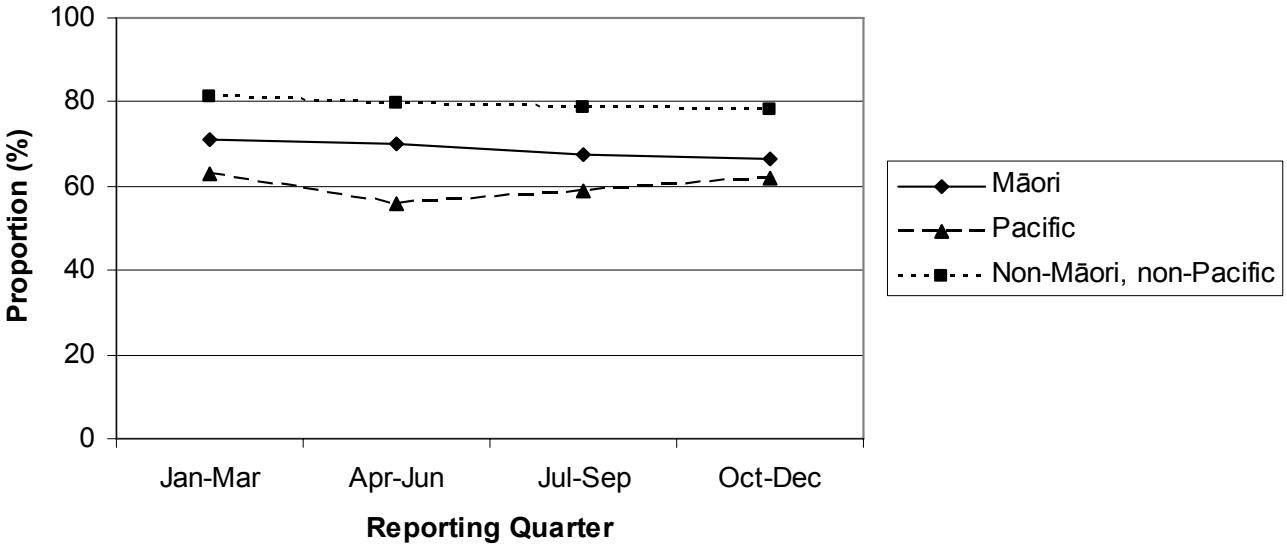
For all NCSP Regions combined, the proportion of women in each reporting quarter who had a high grade smear result with a subsequent histology specimen taken within

52 weeks was 90% or more (Table 32). Within each Region, there was little variation across the reporting quarters in the proportion of women who had a high grade smear result with a subsequent histology specimen taken within 52 weeks. The target of 99% was not met by any NCSP Region in any of the reporting quarters. In 2004 the target was met once by the West Coast Region in the July to September 2004 reporting quarter.

Overall, the proportion of women who did not have a histology result recorded on the NCSP Register following their high grade smear changed little over the four reporting periods, increasing from 5.2% in the January to March reporting quarter to 7.6% in the October to December reporting quarter (Table 32). The greatest change over the 2005 period was reported by the Hawke's Bay Region, where the proportion of women with no histology result recorded following a high grade smear increased from 2.1% to 9.3%. There were differences by Region in the proportion of women who did not have a histological report following a high grade smear, with such an absence being most common in Auckland (7.3%, 9.0%, 9.7% and 10.8% per reporting quarter), and least common in Nelson/Marlborough (3.5%, 3.5%, 3.6% and 3.5% per reporting quarter, Table 32).

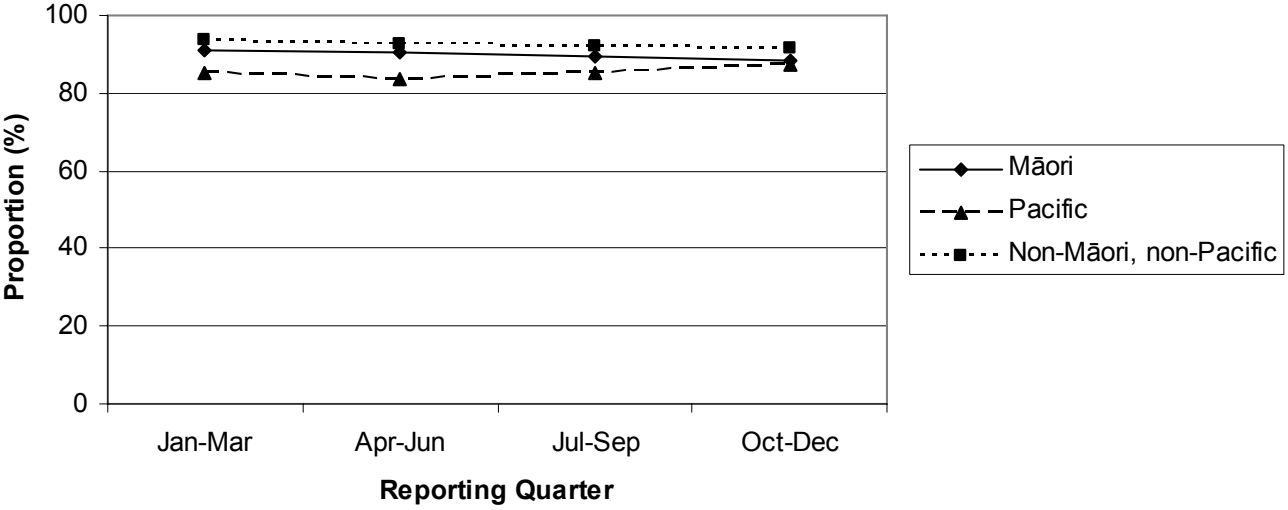
The follow-up of women with high grade cytology results by DHB is shown in Table 33. The pattern was very similar to that across NCSP Regions. The proportion of women in each DHB who had a high grade smear result with a subsequent histology specimen taken within 12 weeks varied amongst the DHBs, and the target of 90% was not met by any DHB in any of the reporting quarters. The proportion of women in each DHB who had a high grade smear result with a subsequent histology specimen taken within 52 weeks also varied. The target of 99% was not met by any DHB in any of the reporting quarters. There were differences by DHB in the proportion of women who did not have a histological report following a high grade smear, with such an absence being most common in South Canterbury (9.1%, 15.5%, 14.7% and 13.7% per reporting quarter), and least common in Bay of Plenty (4.7%, 2.1%, 2.2% and 1.2% per reporting quarter, Table 33).

Figure 5: The proportion of women with a histology report within 12 weeks of a high grade cytology result by ethnicity and reporting quarter, 2005



Target: 90% within 12 weeks of a high grade smear.

Figure 6: The proportion of women with a histology report within 52 weeks of a high grade cytology result by ethnicity and reporting quarter, 2005



Target: 99% within 52 weeks of a high grade smear.

Table 26: The proportion of women with a histology report within 12 weeks of a high grade cytology result by ethnicity and reporting quarter, 2005

Ethnic group	Time period			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%
Māori	71.0	69.9	67.7	66.3
Pacific	62.7	55.9	59.1	61.8
Non-Māori, non-Pacific	81.2	79.9	78.7	78.1
Total	**79.1**	**77.6**	**76.4**	**75.7**

Target: 90% within 12 weeks of a high grade smear.

Table 27: The proportion of women with a histology report in 13 to 26 weeks after a high grade cytology result by ethnicity and reporting quarter, 2005

Ethnic group	Time period			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%
Māori	13.5	13.5	14.2	14.0
Pacific	12.7	17.9	18.1	18.8
Non-Māori, non-Pacific	9.2	8.9	8.8	9.2
Total	**9.9**	**9.9**	**9.9**	**10.2**

Table 28: The proportion of women with a histology report in 27 to 52 weeks after a high grade cytology result by ethnicity and reporting quarter, 2005

Ethnic group	Time period			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%
Māori	6.5	7.1	7.7	7.9
Pacific	9.9	9.7	8.1	6.7
Non-Māori, non-Pacific	3.3	3.9	4.4	4.4
Total	**4.0**	**4.6**	**5.0**	**5.0**

Table 29: The proportion of women with a histology report within 52 weeks of a high grade cytology result by ethnicity and reporting quarter, 2005

Ethnic group	Time period			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%
Māori	90.9	90.4	89.5	88.1
Pacific	85.2	83.5	85.2	87.3
Non-Māori, non-Pacific	93.7	92.7	91.9	91.6
Total	**93.0**	**92.1**	**91.3**	**90.9**

Target: 99% within 52 weeks of a high grade smear.

Table 30: The proportion of women with a histology report later than 52 weeks after a high grade cytology result by ethnicity and reporting quarter, 2005

Ethnic group	Time period			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%
Māori	2.9	3.2	3.6	3.1
Pacific	4.9	3.5	2.0	1.8
Non-Māori, non-Pacific	1.5	1.5	1.5	1.2
Total	**1.8**	**1.8**	**1.9**	**1.5**

Table 31: The proportion of women with no histology report following a high grade cytology result by ethnicity and reporting quarter, 2005

Ethnic group	Time period			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%
Māori	6.2	6.4	6.9	8.8
Pacific	9.9	13.1	12.8	10.9
Non-Māori, non-Pacific	4.9	5.8	6.6	7.2
Total	**5.2**	**6.1**	**6.8**	**7.6**

Table 32: The proportion of women with a histology report within 12 weeks and within 52 weeks of a high grade cytology result by NCSP Region and reporting quarter, 2005

NCSP Region	Time periods											
	Within 12 weeks[1]				Within 52 weeks[2]				No Histology			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%	%	%	%	%	%	%	%	%
Auckland	74.6	71.2	70.7	69.8	90.1	88.6	88.1	87.8	7.3	9.0	9.7	10.8
Bay of Plenty	73.3	74.3	74.9	77.7	92.8	92.9	92.4	93.1	5.0	3.8	4.2	4.1
Canterbury	85.0	84.4	82.5	81.6	93.0	92.5	91.8	91.0	5.8	6.4	7.2	8.1
Hawke's Bay	82.5	78.2	71.1	61.9	95.2	93.1	90.7	87.9	2.1	4.3	5.9	9.3
Manawatu/Wanganui	86.1	84.0	83.3	80.1	93.7	92.0	91.8	89.2	5.9	6.9	6.9	9.7
Nelson/Marlborough	76.8	71.7	71.7	72.9	96.5	95.9	95.7	95.8	3.5	3.5	3.6	3.5
Northland	85.2	86.5	85.3	82.4	95.4	95.8	95.1	94.6	3.1	3.1	3.8	4.4
Otago/Southland	84.1	85.5	84.6	83.9	95.5	95.6	95.1	95.1	3.9	3.9	4.2	4.3
Tairawhiti	87.1	83.3	78.1	77.4	95.2	94.9	96.4	94.0	4.8	3.9	2.4	4.8
Taranaki	78.1	75.9	73.5	76.1	93.5	93.4	91.4	94.0	4.1	5.1	6.6	4.8
Waikato	76.5	75.7	75.3	79.1	93.0	92.4	91.7	91.8	4.5	5.2	5.8	5.9
Wellington	79.2	80.0	78.5	76.9	96.1	95.6	94.6	93.7	2.8	3.2	4.2	4.9
West Coast	87.2	89.5	82.9	80.6	94.9	92.1	87.8	88.9	2.6	5.3	7.3	8.3
Total	**79.1**	**77.6**	**76.4**	**75.7**	**93.0**	**92.1**	**91.3**	**90.9**	**5.2**	**6.1**	**6.8**	**7.6**

Targets are: [1]90% with histology report within 12 weeks, [2]99% within 52 weeks of a high grade smear.

Table 33: The proportion of women with a histology report within 12 weeks and within 52 weeks of a high grade cytology result by District Health Board and reporting quarter, 2005

DHB	Time periods											
	Within 12 weeks[1]				Within 52 weeks[2]				No Histology			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
	%	%	%	%	%	%	%	%	%	%	%	%
Auckland	76.6	74.4	73.3	74.6	89.0	87.2	86.8	87.6	8.5	10.3	10.3	10.4
Bay of Plenty	78.0	77.1	76.0	79.1	93.2	94.5	94.3	95.7	4.7	2.1	2.2	1.2
Canterbury	86.5	86.6	85.0	84.4	93.6	93.9	93.0	92.0	5.2	5.2	6.2	7.4
Capital Coast	77.4	77.7	76.5	75.8	96.6	96.1	95.6	94.9	1.9	2.0	3.2	3.7
Counties Manakau	73.3	67.4	66.7	64.4	88.3	85.4	85.1	83.3	7.9	11.0	13.0	15.3
Hawke's Bay	82.5	78.2	71.1	61.9	95.2	93.1	90.7	87.9	2.1	4.3	5.9	9.3
Hutt	82.7	87.2	81.6	81.0	96.1	95.7	93.6	93.4	3.2	4.3	4.8	5.0
Lakes	64.5	68.8	73.0	75.3	91.9	89.9	89.5	88.9	5.7	7.0	7.2	8.6
MidCentral	87.0	83.5	82.3	80.9	94.6	92.2	92.2	90.7	4.9	6.3	6.0	7.8
Nelson/Marlborough	76.8	71.7	71.7	72.9	96.5	95.9	95.7	95.8	3.5	3.5	3.6	3.5
Northland	85.2	86.5	85.3	82.4	95.4	95.8	95.1	94.6	3.1	3.1	3.8	4.4
Otago	85.1	85.7	83.9	83.1	95.4	96.3	95.4	95.8	3.6	2.9	3.9	3.6
South Canterbury	74.2	66.2	65.3	61.6	89.4	81.7	82.7	83.6	9.1	15.5	14.7	13.7
Southland	82.4	85.2	86.0	85.2	95.6	94.5	94.5	94.0	4.4	5.6	4.9	5.5
Tairawhiti	87.1	83.3	78.1	77.4	95.2	94.9	96.4	94.0	4.8	3.9	2.4	4.8
Taranaki	78.1	75.9	73.5	76.1	93.5	93.4	91.4	94.0	4.1	5.1	6.6	4.8
Waikato	76.5	75.7	75.3	79.1	93.0	92.4	91.7	91.8	4.5	5.2	5.8	5.9
Wairarapa	77.8	69.7	80.7	71.9	91.7	90.9	90.3	87.5	8.3	9.1	9.7	12.5
Waitemata	73.7	71.4	71.4	69.9	92.6	92.3	91.4	91.6	5.6	6.3	6.6	7.2
West Coast	87.2	89.5	82.9	80.6	94.9	92.1	87.8	88.9	2.6	5.3	7.3	8.3
Whanganui	84.6	86.6	88.4	79.5	90.4	91.1	91.3	85.9	9.6	9.0	8.7	14.1
Unspecified	79.0	85.7	79.2	65.2	89.5	95.2	91.7	78.3	10.5	4.8	8.3	21.7
Total	**79.1**	**77.6**	**76.4**	**75.7**	**93.0**	**92.1**	**91.3**	**90.9**	**5.2**	**6.1**	**6.8**	**7.6**

Targets are: [1]90% with histology report within 12 weeks, [2]99% within 52 weeks of a high grade smear.

10. Cytology reporting

Definition

Cytology reporting is measured by the number and proportion of satisfactory and satisfactory but limited smears recorded on the NCSP Register in broad cytological categories.

The Bethesda Coding System revisions of 1998 and 2001 were used by the NCSP to record the cytological result of each smear during the reporting period. Laboratories can assign more than one Bethesda diagnosis code to each smear. Therefore, a hierarchy of codes is used by the NCSP for the recommended follow-up of women and for the tabulation of results (Appendix 2). For the purposes of this report the most serious diagnosis code for each smear was used and then assigned to a broad cytological category. The results are presented per woman and the most serious of her smears (according to the hierarchy of cytological categories) was used. The hierarchy of broad cytological categories used for this report are:

(a) Negative for dysplasia or malignancy

(b) Abnormal not otherwise specified (not in use in Bethesda 2001)

(c) Atypical squamous cells (ASC) of undetermined significance (ASC-US), excluding ASC cannot exclude high grade

(d) Low grade squamous intra-epithelial lesion (LSIL)

(e) Atypical glandular/endocervical/endometrial cells (AGC)

(f) Atypical glandular/endocervical cells (AGC) favouring a neoplastic process

(g) ASC, cannot exclude high grade (ASC-H)

(h) High grade squamous intra-epithelial lesion (HSIL)

(i) Adenocarcinoma-in-situ (AIS)

(j) Adenocarcinoma

(k) Cancer not otherwise specified

(l) Invasive squamous carcinoma of the cervix (ISCC)

Targets

There are no targets.

Calculation

The Bethesda diagnosis codes, as recorded on the NCSP Register of satisfactory and satisfactory but limited smears taken during the reporting period (1 January 2005 to 31 December 2005) were used to calculate the number of smears in each broad cytological category. Where a single smear had more than one diagnosis code, the most serious ranked code was used according to the hierarchy of codes (see Appendix 2). Similarly where a woman had more than one satisfactory or satisfactory but limited smear recorded during the reporting period the smear with the most serious ranked code was used. Each woman's age was calculated at the end of the reporting period (31 December 2005) with smear results for women of all ages included in some tables and only those of women aged 20 to 69 years in other tables (as noted in each table). Smears recorded as being unsatisfactory for evaluation were excluded.

Please note that in July 2005 the NCSP adopted the 2001 revision of the Bethesda Coding System in which the satisfactory but limited category ceased to be used. As a result, the numbers of smears that were categorised as satisfactory or unsatisfactory for evaluation were different after July 2005 and therefore the results presented in this report are not fully comparable with those from 2004.

Results

Between 1 January 2005 and 31 December 2005, 377,462 women of all ages had a satisfactory or satisfactory but limited smear result recorded on the NCSP Register (Table 34). Of these women, 365,252 were aged between 20 and 69 years (Table 35).

The number of women with smears in each cytological result category is shown by five-year age group in Table 34. Age-specific and age-standardised (to Segi's world population) smear reporting rates for cytological result categories are shown in Table 35. The age-standardised reporting rate for 20 to 69 year old women with a smear reported as negative for dysplasia or malignancy was 932.3 per 1,000 women

screened, compared to 929.2 per 1,000 women screened in 2004. The most frequently reported cytological abnormalities were ASC-US and LSIL. The ASC-US and LSIL age-standardised rates for 20 to 69 year old women were quite similar, 21.8 per 1,000 women and 29.5 per 1,000 women, respectively. In 2004, ASC-US and LSIL were also the most frequently reported cytological abnormalities; the age-standardised rates for 20 to 69 year old women were 26.4 per 1,000 women and 28.4 per 1,000 women, respectively. The age-standardised ASC-H cytology rate for 20 to 69 year old women was 6.7 per 1,000 women (compared to 6.0 per 1,000 women in 2004). The age-standardised HSIL rate for 20 to 69 year old women was 8.3 per 1,000 women, and 0.1 per 1,000 women for HSIL - suspicious for invasion (introduced in the 2001 revision of the Bethesda Coding System). In 2004, the age-standardised HSIL rate for 20 to 69 year old women was 8.8 per 1,000 women. The age-standardised reporting rate for ISCC, for 20 to 69 year old women, was 0.1 per 1,000 women, which is the same rate as in 2004.

The age-standardised reported smear results per 1,000 women aged 20 to 69 years by NCSP Region are shown in Table 36. The age-standardised rates varied amongst the Regions for the different cytological categories, particularly for ASC-US and LSIL.

The age-standardised reported smear results per 1,000 women aged 20 to 69 years by DHB are shown in Table 37. The age-standardised rates varied amongst the DHBs for the different cytological categories, particularly for ASC-US and LSIL. The age-standardised ASC-US cytology rate ranged from 1.7 per 1,000 women in Otago to 41.9 per 1,000 women in the Bay of Plenty. The age-standardised LSIL cytology rate ranged from 21.5 per 1,000 women in Waitemata to 76.1 per 1,000 women in MidCentral. The age-standardised HSIL cytology rate ranged from 4.7 per 1,000 women in Hutt Valley to 14.3 per 1,000 women in Hawke's Bay. The 'Unspecified' DHB had the highest age-standardised ISCC cytology rate (0.5 per 1,000 women). No cases of ISCC were reported in Bay of Plenty, Capital and Coast, Hutt Valley, Lakes, Nelson/Marlborough, Otago, South Canterbury, Tairawhiti, Taranaki, Wairarapa, West Coast and Whanganui.

The number of women with satisfactory or satisfactory but limited smears from each ethnic group, and age-standardised smear results per 1,000 women aged 20 to 69

years for each ethnic group are shown in Table 38 and Table 39. There were lower rates of negative for dysplasia or malignancy cytology reporting in Māori women (918.7 per 1,000 women) than in non-Māori, non-Pacific and Pacific women (933.8 and 936.0 per 1,000 women). In 2004, there were also lower rates of negative cytology reporting in Māori women (913.0 per 1,000 women) compared with non-Māori, non-Pacific and Pacific women (930.8 and 933.3 per 1,000 women). The ASC-US cytology reporting rates were lower in non-Māori, non-Pacific women (21.5 per 1,000 women screened) compared with Māori and Pacific women (23.4 and 24.8 per 1,000 women, respectively). This was also the case in 2004; non-Māori, non-Pacific women 25.9 per 1,000 women screened, Māori 29.8 per 1,000 women screened, and Pacific women 28.3 per 1,000 women screened. Pacific women had lower rates of LSIL cytology (23.9 per 1,000 women screened) than non-Māori, non-Pacific women and Māori women (29.0 and 35.2 per 1,000 women, respectively). In 2004, Pacific women also had lower rates of LSIL cytology (23.8 per 1,000 women screened) than non-Māori, non-Pacific women and Māori women (27.9 and 33.6 per 1,000 women, respectively). Māori women (12.5 per 1,000 women) had the highest HSIL cytology reporting rates compared with non-Māori, non-Pacific women and Pacific women (7.9 and 6.5 per 1,000 women, respectively). This situation was the same in 2004; Māori women 13.7 per 1,000 women, non-Māori, non-Pacific women 8.3 per 1,000 women, and Pacific women 8.6 per 1,000 women. Māori and Pacific women (0.3 and 0.3 per 1,000 women, respectively) had higher rates of HSIL - suspicious for invasion (introduced in the 2001 revision of the Bethesda Coding System) compared to non-Māori, non-Pacific women (0.1 per 1,000 women). ISCC cytology reporting rates were also higher amongst Pacific women (0.3 per 1,000 women) compared with Māori and non-Māori, non-Pacific women (0.2 and <0.1 per 1,000 women, respectively). In 2004, ISCC cytology reporting rates were highest amongst Māori women (0.2 per 1,000 women) compared with non-Māori, non-Pacific women and Pacific women (0.1 and 0.1 per 1,000 women, respectively).

Table 34: Number of women with reported smear results by cytological category and 5-year age group, 2005

Category of cytology result	Age group (years)														Total
	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	≥85	
Negative for dysplasia or malignancy	5,981	33,142	34,898	43,701	47,178	47,599	42,106	33,622	27,512	18,702	13,770	3,283	855	354	132	352,835
Abnormal, NOS	0	0	0	0	1	1	0	1	2	1	0	1	0	0	0	7
ASC-US	328	1,658	1,214	991	999	941	785	521	270	165	94	32	10	3	0	8,011
LSIL	889	3,320	1,855	1,277	998	869	617	379	227	105	72	25	10	4	0	10,647
AGC - low grade	1	15	15	34	51	36	42	25	25	8	8	1	0	1	1	263
AGC - high grade	0	1	3	4	9	4	14	13	12	13	4	0	3	7	2	89
ASC-H	108	534	424	373	288	209	161	125	89	51	35	11	9	1	2	2,420
HSIL	108	616	676	586	394	262	138	76	50	29	29	5	4	4	1	2,978
HSIL - suspicious for invasion	0	0	5	9	8	7	1	2	6	3	2	1	1	1	1	47
AIS	0	1	11	18	12	13	10	2	4	1	1	0	0	0	0	73
Adeno-carcinoma	0	0	1	1	3	2	4	4	9	6	7	7	8	3	2	57
Cancer, NOS	0	0	0	0	1	1	0	2	2	0	0	1	1	2	1	11
ISCC	0	1	0	5	3	0	2	1	3	2	2	1	1	2	1	24
Total number of women	7,415	39,288	39,102	46,999	49,945	49,944	43,880	34,773	28,211	19,086	14,024	3,368	902	382	143	377,462

NOS: not otherwise specified; ASC-US: Atypical squamous cells of undetermined significance; LSIL: Low grade squamous intra-epithelial lesion; AGC: Atypical glandular cells of undetermined significance; ASC-H: Atypical squamous cells of undetermined significance, cannot exclude high grade; HSIL: High grade squamous intra-epithelial lesion; AIS: Adenocarcinoma-in-situ; ISCC: Invasive squamous carcinoma of the cervix.

Table 35: Proportion of women (per 1,000) with reported smear results by cytological category and 5-year age group, 2005

Category of cytology result	Age group (years)														Total crude rate (<20-85+ years)	Total crude rate (20-69 years)	Total age standard-ised rate (20-69 years)
	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+			
Negative for dysplasia or malignancy	806.6	**843.6**	**892.5**	**929.8**	**944.6**	**953.0**	**959.6**	**966.9**	**975.2**	**979.9**	**981.9**	974.8	947.9	926.7	923.1	934.8	**937.0**	**932.3**
Abnormal, NOS	0.0	**0.0**	**0.0**	**0.0**	**<0.1**	**<0.1**	**0.0**	**<0.1**	**0.1**	**0.1**	**0.0**	0.3	0.0	0.0	0.0	<0.1	**<0.1**	**<0.1**
ASC-US	44.2	**42.2**	**31.0**	**21.1**	**20.0**	**18.8**	**17.9**	**15.0**	**9.6**	**8.6**	**6.7**	9.5	11.1	7.9	0.0	21.2	**20.9**	**21.8**
LSIL	119.9	**84.5**	**47.4**	**27.2**	**20.0**	**17.4**	**14.1**	**10.9**	**8.0**	**5.5**	**5.1**	7.4	11.1	10.5	0.0	28.2	**26.6**	**29.5**
AGC - low grade	0.1	**0.4**	**0.4**	**0.7**	**1.0**	**0.7**	**1.0**	**0.7**	**0.9**	**0.4**	**0.6**	0.3	0.0	2.6	7.0	0.7	**0.7**	**0.7**
AGC - high grade	0.0	**<0.1**	**0.1**	**0.1**	**0.2**	**0.1**	**0.3**	**0.4**	**0.4**	**0.7**	**0.3**	0.0	3.3	18.3	14.0	0.2	**0.2**	**0.2**
ASC-H	14.6	**13.6**	**10.8**	**7.9**	**5.8**	**4.2**	**3.7**	**3.6**	**3.2**	**2.7**	**2.5**	3.3	10.0	2.6	14.0	6.4	**6.3**	**6.7**
HSIL	14.6	**15.7**	**17.3**	**12.5**	**7.9**	**5.2**	**3.1**	**2.2**	**1.8**	**1.5**	**2.1**	1.5	4.4	10.5	7.0	7.9	**7.8**	**8.3**
HSIL - suspicious for invasion	0.0	**0.0**	**0.1**	**0.2**	**0.2**	**0.1**	**<0.1**	**0.1**	**0.2**	**0.2**	**0.1**	0.3	1.1	2.6	7.0	0.1	**0.1**	**0.1**
AIS	0.0	**<0.1**	**0.3**	**0.4**	**0.2**	**0.3**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	0.0	0.0	0.0	0.0	0.2	**0.2**	**0.2**
Adenocarcinoma	0.0	**0.0**	**<0.1**	**<0.1**	**0.1**	**<0.1**	**0.1**	**0.1**	**0.3**	**0.3**	**0.5**	2.1	8.9	7.9	14.0	0.2	**0.1**	**0.1**
Cancer, NOS	0.0	**0.0**	**0.0**	**0.0**	**<0.1**	**<0.1**	**0.0**	**0.1**	**0.1**	**0.0**	**0.0**	0.3	1.1	5.2	7.0	<0.1	**<0.1**	**<0.1**
ISCC	0.0	**<0.1**	**0.0**	**0.1**	**0.1**	**0.0**	**<0.1**	**<0.1**	**0.1**	**0.1**	**0.1**	0.3	1.1	5.2	7.0	0.1	**0.1**	**0.1**
Total number of women	7,415	**39,288**	**39,102**	**46,999**	**49,945**	**49,944**	**43,880**	**34,773**	**28,211**	**19,086**	**14,024**	3,368	902	382	143	377,462	**365,252**	

NOS: not otherwise specified; ASC-US: Atypical squamous cells of undetermined significance; LSIL: Low grade squamous intra-epithelial lesion; AGC: Atypical glandular cells of undetermined significance; ASC-H: Atypical squamous cells of undetermined significance, cannot exclude high grade; HSIL: High grade squamous intra-epithelial lesion; AIS: Adenocarcinoma-in-situ; ISCC: Invasive squamous carcinoma of the cervix.

Table 36: Age-standardised reported smear results per 1,000 screened women aged 20 to 69 years by cytological category and NCSP Region, 2005

Category of cytology result	Age-standardised rates													Total crude rate	Total age standard-ised rate
	NSCP Region														
	Auckland	Bay of Plenty	Canter-bury	Hawke's Bay	Manawatu/ Whanganui	Nelson/ Marl-borough	North-land	Otago/ South-land	Taira-whiti	Taranaki	Waikato	Wellington	West Coast		
Negative for dysplasia or malignancy	940.4	909.0	937.7	917.7	879.2	921.5	947.0	946.9	932.3	953.0	933.5	930.3	924.5	937.0	932.3
Abnormal, NOS	<0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	<0.1	0.0	0.0	<0.1	<0.1
ASC-US	21.4	37.5	22.4	14.5	23.9	33.7	6.3	7.8	9.9	8.3	19.2	29.1	27.8	20.9	21.8
LSIL	22.9	35.9	25.8	45.5	74.5	28.0	26.9	26.0	34.0	23.0	28.5	28.7	34.8	26.6	29.5
AGC - low grade	0.6	1.3	0.4	0.9	1.3	0.5	0.3	0.5	0.6	0.2	1.0	0.6	0.4	0.7	0.7
AGC - high grade	0.1	0.4	0.3	0.2	0.4	0.2	0.2	0.4	0.2	0.0	0.4	0.1	0.0	0.2	0.2
ASC-H	7.3	7.2	5.9	6.4	8.0	8.7	6.5	5.6	8.7	4.2	6.1	5.9	5.2	6.3	6.7
HSIL	6.7	8.4	7.4	14.3	12.0	7.0	12.3	12.4	13.8	11.0	10.5	5.1	6.6	7.8	8.3
HSIL - suspicious for invasion	0.2	0.1	<0.1	0.3	0.1	0.1	0.0	0.1	0.4	0.1	0.2	0.1	0.0	0.1	0.1
AIS	0.3	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.0	0.1	0.3	0.1	0.6	0.2	0.2
Adenocarcinoma	0.2	<0.1	<0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.1
Cancer, NOS	<0.1	0.1	<0.1	0.0	<0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1
ISCC	0.1	0.0	<0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	<0.1	0.0	0.1	0.1
Total number of women	**120,919**	**27,672**	**47,046**	**12,446**	**18,964**	**11,496**	**11,707**	**26,936**	**3,999**	**10,155**	**28,842**	**42,665**	**2,405**	**365,252**	

NOS: not otherwise specified; ASC-US: Atypical squamous cells of undetermined significance; LSIL: Low grade squamous intra-epithelial lesion; AGC: Atypical glandular cells of undetermined significance; ASC-H: Atypical squamous cells of undetermined significance, cannot exclude high grade; HSIL: High grade squamous intra-epithelial lesion; AIS: Adenocarcinoma-in-situ; ISCC: Invasive squamous carcinoma of the cervix.

Table 37: Age-standardised reported smear results per 1,000 screened women aged 20 to 69 years by cytological category and District Health Board, 2005

DHB	Category of cytology result													Total number of women
	Negative for dysplasia or malignancy	Abnormal, NOS	ASC-US	LSIL	AGC - low grade	AGC - high grade	ASC-H	HSIL	HSIL - suspicious for invasion	AIS	Adeno-carcinoma	Cancer, NOS	ISCC	
Auckland	938.4	0.0	21.3	24.4	0.7	<0.1	7.6	6.7	0.2	0.3	0.2	0.0	<0.1	40,014
Bay of Plenty	904.9	0.0	41.9	36.5	1.2	0.4	7.4	7.5	<0.1	0.1	<0.1	<0.1	0.0	18,611
Canterbury	938.7	0.0	22.2	25.0	0.4	0.3	5.8	7.5	<0.1	0.1	<0.1	<0.1	<0.1	42,328
Capital Coast	926.0	0.0	33.7	27.3	0.6	0.2	7.1	4.8	0.1	0.1	0.2	0.0	0.0	27,680
Counties Manukau	941.9	0.0	21.2	22.2	0.7	0.2	6.7	6.5	0.1	0.3	0.2	0.0	0.1	34,489
Hawke's Bay	917.7	0.0	14.5	45.5	0.9	0.2	6.4	14.3	0.3	0.1	0.1	0.0	0.1	12,446
Hutt Valley	948.8	0.0	17.6	25.8	0.2	0.0	2.8	4.7	0.0	0.1	0.0	0.0	0.0	11,147
Lakes	916.8	0.0	29.1	35.0	1.5	0.4	6.9	9.8	0.2	0.2	0.0	0.1	0.0	8,996
MidCentral	878.2	0.0	22.7	76.1	1.2	0.4	7.9	12.5	0.1	0.4	0.3	0.1	0.1	13,565
Nelson/Marlborough	921.5	0.0	33.7	28.0	0.5	0.2	8.7	7.0	0.1	0.2	0.1	0.1	0.0	11,496
Northland	947.0	0.1	6.3	26.9	0.3	0.2	6.5	12.3	0.0	0.1	0.2	0.0	0.1	11,707
Otago	958.1	0.0	1.7	23.9	0.4	0.2	3.3	12.2	0.1	0.1	0.2	0.0	0.0	17,221
South Canterbury	922.9	0.0	25.5	35.4	0.4	0.2	8.7	6.8	0.0	0.2	0.0	0.0	0.0	4,373
Southland	926.1	0.2	19.4	29.8	0.7	0.8	10.0	12.5	0.0	0.1	0.1	0.0	0.2	9,715
Tairawhiti	932.3	0.0	9.9	34.0	0.6	0.2	8.7	13.8	0.4	0.0	0.2	0.0	0.0	3,999
Taranaki	953.0	0.1	8.3	23.0	0.2	0.0	4.2	11.0	0.1	0.1	0.0	0.0	0.0	10,155
Waikato	933.5	<0.1	19.2	28.5	1.0	0.4	6.1	10.5	0.2	0.3	0.1	0.0	0.1	28,842
Wairarapa	904.4	0.0	25.8	54.2	1.0	0.2	4.9	9.4	0.0	0.0	0.0	0.0	0.0	3,345
Waitemata	941.8	<0.1	21.4	21.5	0.5	<0.1	7.3	6.9	0.1	0.2	0.1	<0.1	0.1	45,533
West Coast	924.5	0.0	27.8	34.8	0.4	0.0	5.2	6.6	0.0	0.6	0.0	0.0	0.0	2,405
Whanganui	883.3	0.0	26.6	69.2	1.4	0.3	8.4	10.5	0.3	0.0	0.0	0.0	0.0	5,134
Unspecified	913.5	0.0	21.8	45.4	0.9	0.0	7.1	10.9	0.0	0.0	0.0	0.0	0.5	2,051
Total crude rate	**937.0**	**<0.1**	**20.9**	**26.6**	**0.7**	**0.2**	**6.3**	**7.8**	**0.1**	**0.2**	**0.1**	**<0.1**	**0.1**	**365,252**
Total age standardised rate	**932.3**	**<0.1**	**21.8**	**29.5**	**0.7**	**0.2**	**6.7**	**8.3**	**0.1**	**0.2**	**0.1**	**<0.1**	**0.1**	

NOS: not otherwise specified; ASC-US: Atypical squamous cells of undetermined significance; LSIL: Low grade squamous intra-epithelial lesion; AGC: Atypical glandular cells of undetermined significance; ASC-H: Atypical squamous cells of undetermined significance, cannot exclude high grade; HSIL: High grade squamous intra-epithelial lesion; AIS: Adenocarcinoma-in-situ; ISCC: Invasive squamous carcinoma of the cervix.

Table 38: Number of women aged 20 to 69 years with reported smear results by cytological category and ethnicity, 2005

Category of cytology result	Ethnic group			Total
	Māori	Pacific	Non-Māori, non-Pacific	
Negative for dysplasia or malignancy	29,353	11,124	301,753	342,230
Abnormal, NOS	0	1	5	6
ASC-US	824	303	6,511	7,638
LSIL	1,267	297	8,155	9,719
AGC - low grade	26	6	227	259
AGC - high grade	5	2	70	77
ASC-H	276	88	1,925	2,289
HSIL	442	83	2,331	2,856
HSIL - suspicious for invasion	9	3	31	43
AIS	7	5	61	73
Adenocarcinoma	6	1	30	37
Cancer, NOS	2	0	4	6
ISCC	6	3	10	19
Total number of women	**32,223**	**11,916**	**321,113**	**365,252**

NOS: not otherwise specified; ASC-US: Atypical squamous cells of undetermined significance; LSIL: Low grade squamous intra-epithelial lesion; AGC: Atypical glandular cells of undetermined significance; ASC-H: Atypical squamous cells of undetermined significance, cannot exclude high grade; HSIL: High grade squamous intra-epithelial lesion; AIS: Adenocarcinoma-in-situ; ISCC: Invasive squamous carcinoma of the cervix.

Table 39: Age-standardised reported smear results per 1,000 screened women aged 20 to 69 years by ethnicity, 2005

Category of cytology result	Ethnic group			Total crude rate	Total age standardised rate
	Māori	Pacific	Non-Māori, non-Pacific		
Negative for dysplasia or malignancy	918.7	936.0	933.8	937.0	932.3
Abnormal, NOS	0.0	0.1	<0.1	<0.1	<0.1
ASC-US	23.4	24.8	21.5	20.9	21.8
LSIL	35.2	23.9	29.0	26.6	29.5
AGC - low grade	0.8	0.5	0.7	0.7	0.7
AGC - high grade	0.2	0.2	0.2	0.2	0.2
ASC-H	8.1	7.0	6.5	6.3	6.7
HSIL	12.5	6.5	7.9	7.8	8.3
HSIL - suspicious for invasion	0.3	0.3	0.1	0.1	0.1
AIS	0.2	0.3	0.2	0.2	0.2
Adenocarcinoma	0.4	0.1	0.1	0.1	0.1
Cancer, NOS	0.1	0.0	<0.1	<0.1	<0.1
ISCC	0.2	0.3	<0.1	0.1	0.1
Total number of women	**32,223**	**11,916**	**321,113**	**365,252**	

NOS: Not otherwise specified; ASC-US: Atypical squamous cells of undetermined significance; LSIL: Low grade squamous intra-epithelial lesion; AGC: Atypical glandular cells of undetermined significance; ASC-H: Atypical squamous cells of undetermined significance, cannot exclude high grade; HSIL: High grade squamous intra-epithelial lesion; AIS: Adenocarcinoma-in-situ; ISCC: Invasive squamous carcinoma of the cervix.

11. Histology reporting

Definition

Histology reporting is measured by the number and proportion of histological specimens recorded on the NCSP Register in broad histological categories. The Systematised Nomenclature of Medicine (SNOMED) histology codes are used by the NCSP Register to record the histological results of vaginal and cervical histology specimens. Histology specimens include diagnostic biopsies, treatment biopsies, cervical polyps and the cervical tissue of total hysterectomy specimens.

Laboratories can assign more than one SNOMED code to each histology specimen. Therefore, a hierarchy of histology codes is used by the NCSP for the recommended follow-up of women and for the tabulation of results (Appendix 3). For the purposes of this report the most serious diagnosis code for each histology specimen was used and each SNOMED code was assigned to a broad histological category. The hierarchy of histological categories used for this report is:

a) Normal
b) Other non-neoplastic
c) Polyp
d) Atypia/human papilloma virus (HPV)
e) Cervical intra-epithelial neoplasia (CIN), not otherwise specified (NOS)
f) LSIL
g) HSIL
h) Glandular dysplasia
i) Adenocarcinoma-in-situ (AIS)
j) Other non-epithelial primary cervical cancer
k) Metastatic cancer (non-cervical)
l) Invasive adenocarcinoma
m) Adenosquamous carcinoma
n) Microinvasive squamous carcinoma
o) Invasive squamous carcinoma of the cervix (ISCC)

Targets

There are no targets.

Calculation

The SNOMED histology codes, as recorded on the NCSP Register of all satisfactory histological specimens taken during the reporting period (1 January 2005 to 31 December 2005) were used to calculate the number of histologies in each broad histological category. Where a histology specimen had more than one SNOMED code, the most serious ranked code was used according to the hierarchy of codes (Appendix 3). Each woman's age was calculated at the end of the reporting period (31 December 2005). Histology results for women of all ages are included in some tables and only those of women aged 20 to 69 years in other tables (as noted in each table). Women who died after the mid-point of the reporting period (30 June 2005) were excluded to allow comparisons of the information in the NCSP Register and the whole population.

These histologies in each broad category were expressed as the number and proportion of histologies by ethnicity, the number and proportion of histologies by 5-year age group for women of all ages, the rate per 10,000 women (in the New Zealand population) by 5-year age group, age-standardised rates per 10,000 women by ethnicity for 20 to 69 year old women, and the age-standardised rates per 10,000 women by NCSP Region and DHB for 20 to 69 year old women.

Results

Between 1 January 2005 and 31 December 2005, 28,754 histology samples were recorded on the NCSP Register. Of these, 564 were recorded as unsatisfactory, and were not included in subsequent analyses. The remaining 28,190 specimens were taken from 22,308 women. Six women died prior to 30 June 2005, and were therefore excluded from subsequent analyses.

The number and proportion of women in each histology result category by ethnicity are shown in Table 40. A total of 94 women (17 Māori, 6 Pacific, 71 non-Māori, non-

Pacific) were diagnosed with ISCC, compared with 69 women (10 Māori, 6 Pacific, 53 non-Māori, non-Pacific) in 2004. Seventy-eight women (6 Māori, 9 Pacific, 63 non-Māori, non-Pacific) were diagnosed with invasive adenocarcinoma of the cervix, compared with 60 women (seven Māori, three Pacific, 50 non-Māori, non-Pacific) in 2004. In the total population, 44.8% of the histology specimens were classified as "normal" or "other non-neoplastic" (see Table 40), but this proportion was lower for Māori (37.2%) and Pacific (38.0%) women, reflecting the higher proportion of abnormalities for these groups of women. Proportions of both LSIL and HSIL were higher in Māori (16.5% and 24.4%, respectively) compared to non-Māori, non-Pacific women (14.4% and 18.1%, respectively).

The number and proportion of women in each histology result category by 5-year age group are shown in Table 41. Eighteen (19.1%) of the cases of ISCC, compared to 19 (27.5%) in 2004, and 16 (20.5%), compared to 16 (26.7%) in 2004, of the cases of invasive adenocarcinoma of the cervix occurred in women aged 70 years or over.

All subsequent rates were calculated per 10,000 women in the whole New Zealand population (rather than as a proportion of women on the NCSP Register). Age-specific (by 5-year age group) histology reporting rates are shown in Table 42. These results show a similar pattern to that in 2004, with particularly high rates of atypia/HPV, LSIL, and HSIL in younger women, with peaks in women aged 20 to 29 years, and lower rates in older women, see Figure 7. Conversely, rates of invasive adenocarcinoma of the cervix and ISCC rose with age.

Age-specific atypia/HPV, LSIL and HSIL population rates by ethnic group are shown in Figure 8 to Figure 10. In most age groups, the abnormality rates were highest for non-Māori, non-Pacific women, intermediate for Māori and lowest for Pacific women. These results were affected by the lower proportion of Māori and Pacific women attending screening, since with fewer women being screened a lower rate of cases will be found. Thus, the results should not be interpreted as truly lower rates of these abnormalities in Māori and Pacific women compared to non-Māori, non-Pacific women.

Age-standardised histology reporting rates by ethnic group are shown in Table 43. It can be seen from this table that the age-standardised population rates of LSIL and HSIL for Māori and Pacific women were lower than those for non-Māori, non-Pacific women. However, as noted above, this should be interpreted with caution because of the lower coverage of cervical screening among Māori and Pacific women.

The median age of women who had had a histology specimen taken varied across Regions, from 35 years in Wellington to 42 years in Northland. Therefore, Regional histology rates were standardised to the Segi world population, as shown in Table 44. Regional differences in histology reporting rates were evident. These are shown in graphical form in Figure 11 to Figure 13 for atypia/HPV, LSIL and HSIL. When interpreting these numbers it is important to note that the rates were affected by Regional differences in coverage as well as by actual differences in histological abnormality detection rates.

The median age of women who had had a histology specimen taken also varied across DHBs, from 33 years in Capital and Coast to 42 years in Northland and Whanganui. Therefore, as for Regional histology rates, DHB histology rates were standardised to the Segi world population, as shown in Table 45. Differences in histology reporting rates were evident across the DHBs. These are shown in graphical form in Figure 14 to Figure 16 for atypia/HPV, LSIL and HSIL. When interpreting these numbers it is important to note that the rates were affected by differences in coverage as well as by actual differences in histological abnormality detection rates.

Table 40: Number and proportion of women (of all ages) with histology specimens taken during 2005, by ethnicity

Histology result category	Ethnic group						All women	
	Māori women		Pacific women		Non-Māori, non-Pacific women			
	n	%	n	%	n	%	n	%
Normal	401	17.7	111	19.0	4,708	24.2	5,220	23.4
Other non-neoplastic	443	19.5	111	19.0	4,222	21.7	4,776	21.4
Polyp	147	6.5	51	8.7	1,788	9.2	1,986	8.9
Atypia/HPV	301	13.3	81	13.9	2,041	10.5	2,423	10.9
CIN, NOS	10	0.4	2	0.3	72	0.4	84	0.4
LSIL	374	16.5	96	16.5	2,805	14.4	3,275	14.7
HSIL	554	24.4	108	18.5	3,516	18.1	4,178	18.7
Glandular dysplasia	1	<0.1	0	0.0	7	<0.1	8	<0.1
Adenocarcinoma-in-situ	11	0.5	3	0.5	99	0.5	113	0.5
Other primary cervical cancer	3	0.1	2	0.3	19	0.1	24	0.1
Metastatic (non-cervical) tumour	1	<0.1	2	0.3	17	0.1	20	0.1
Invasive adenocarcinoma	6	0.3	9	1.5	63	0.3	78	0.4
Adenosquamous carcinoma	0	0.0	0	0.0	4	<0.1	4	<0.1
Microinvasive squamous carcinoma	1	<0.1	1	0.2	17	0.1	19	0.1
ISCC	17	0.7	6	1.0	71	0.4	94	0.4
Total	**2,270**	**100**	**583**	**100**	**19,449**	**100**	**22,302**	**100**

HPV: Human papillomavirus; CIN: cervical intra-epithelial neoplasia; NOS: Not otherwise specified: LSIL: Low grade squamous intra-epithelial lesion; HSIL: High grade squamous intra-epithelial lesion; ISCC: Invasive squamous carcinoma of the cervix.

Table 41: Number and proportion of women with histology specimens taken during 2005 by 5-year age group

Histology result category	Age group (years)																					
	<20		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		65-69		70+	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Normal	37	8.8	281	9.6	309	11.1	406	15.5	649	24.3	937	31.3	968	33.1	603	30.8	354	29.7	249	36.5	169	33.4	258	41.3
Other non-neoplastic	60	14.3	347	11.9	341	12.2	464	17.7	573	21.5	743	24.8	822	28.1	566	28.9	312	26.2	173	25.4	163	32.2	212	34.0
Polyp	5	1.2	17	0.6	25	0.9	69	2.6	146	5.5	354	11.8	420	14.4	397	20.3	278	23.3	137	20.1	77	15.2	61	9.8
Atypia/HPV	63	15.0	478	16.3	424	15.2	333	12.7	334	12.5	258	8.6	251	8.6	134	6.8	80	6.7	35	5.1	19	3.8	14	2.2
CIN, NOS	6	1.4	14	0.5	13	0.5	13	0.5	14	0.5	7	0.2	9	0.3	1	0.1	1	0.1	1	0.1	4	0.8	1	0.2
LSIL	127	30.3	824	28.2	635	22.8	480	18.3	378	14.2	336	11.2	233	8.0	145	7.4	69	5.8	30	4.4	13	2.6	5	0.8
HSIL	119	28.4	958	32.7	1,003	36.0	804	30.7	533	20.0	330	11.0	191	6.5	88	4.5	70	5.9	35	5.1	28	5.5	19	3.0
Glandular dysplasia	0	0.0	1	<0.1	4	0.1	0	0.0	0	0.0	1	<0.1	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
Adenocarcinoma-in-situ	2	0.5	6	0.2	22	0.8	32	1.2	18	0.7	13	0.4	8	0.3	5	0.3	4	0.3	0	0.0	2	0.4	1	0.2
Other primary cervical cancer	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1	3	0.1	2	0.1	0	0.0	3	0.4	4	0.8	10	1.6
Metastatic (non-cervical) tumour	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	2	0.3	8	1.6	8	1.3
Invasive adenocarcinoma	0	0.0	0	0.0	2	0.1	3	0.1	8	0.3	7	0.2	10	0.3	5	0.3	12	1.0	5	0.7	10	2.0	16	2.6
Adenosquamous carcinoma	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	1	<0.1	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
Microinvasive squamous carcinoma	0	0.0	0	0.0	3	0.1	5	0.2	4	0.1	2	0.1	2	0.1	0	0.0	0	0.0	1	0.1	1	0.2	1	0.2
ISCC	0	0.0	1	<0.1	3	0.1	8	0.3	13	0.5	6	0.2	8	0.3	10	0.5	10	0.8	9	1.3	8	1.6	18	2.9
Total	419	100	2,927	100	2,785	100	2,617	100	2,671	100	2,995	100	2,926	100	1,959	100	1,191	100	682	100	506	100	624	100

HPV: Human papillomavirus; CIN: cervical intra-epithelial neoplasia; NOS: Not otherwise specified: LSIL: Low grade squamous intra-epithelial lesion; HSIL: High grade squamous intra-epithelial lesion; ISCC: Invasive squamous carcinoma of the cervix.

Table 42: Age-specific histology reporting rates per 10,000 women aged 20 to 69 years in 2005

Histology result category	Age group (years)									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
Normal	10.2	12.2	13.6	20.6	28.4	32.4	23.4	15.1	13.6	11.3
Other non-neoplastic	12.6	13.5	15.5	18.2	22.5	27.5	22.0	13.3	9.4	10.9
Polyp	0.6	1.0	2.3	4.6	10.7	14.1	15.4	11.8	7.5	5.1
Atypia/HPV	17.3	16.7	11.1	10.6	7.8	8.4	5.2	3.4	1.9	1.3
CIN, NOS	0.5	0.5	0.4	0.4	0.2	0.3	<0.1	<0.1	0.1	0.3
LSIL	29.9	25.0	16.0	12.0	10.2	7.8	5.6	2.9	1.6	0.9
HSIL	34.8	39.6	26.9	16.9	10.0	6.4	3.4	3.0	1.9	1.9
Glandular dysplasia	<0.1	0.2	0.0	0.0	<0.1	0.0	<0.1	0.0	0.1	0.0
Adenocarcinoma-in-situ	0.2	0.9	1.1	0.6	0.4	0.3	0.2	0.2	0.0	0.1
Other primary cervical cancer	0.0	0.0	0.0	<0.1	<0.1	0.1	0.1	0.0	0.2	0.3
Metastatic (non-cervical) tumour	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	0.1	0.5
Invasive adenocarcinoma	0.0	0.1	0.1	0.3	0.2	0.3	0.2	0.5	0.3	0.7
Adenosquamous carcinoma	0.0	<0.1	0.0	0.0	0.0	<0.1	<0.1	0.0	0.1	0.0
Microinvasive squamous carcinoma	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1
ISCC	<0.1	0.1	0.3	0.4	0.2	0.3	0.4	0.4	0.5	0.5

HPV: Human papillomavirus; CIN: cervical intra-epithelial neoplasia; NOS: Not otherwise specified: LSIL: Low grade squamous intra-epithelial lesion; HSIL: High grade squamous intra-epithelial lesion; ISCC: Invasive squamous carcinoma of the cervix.

Figure 7: Age-specific histology reporting rates per 10,000 women aged 20 to 69 years by abnormality, 2005

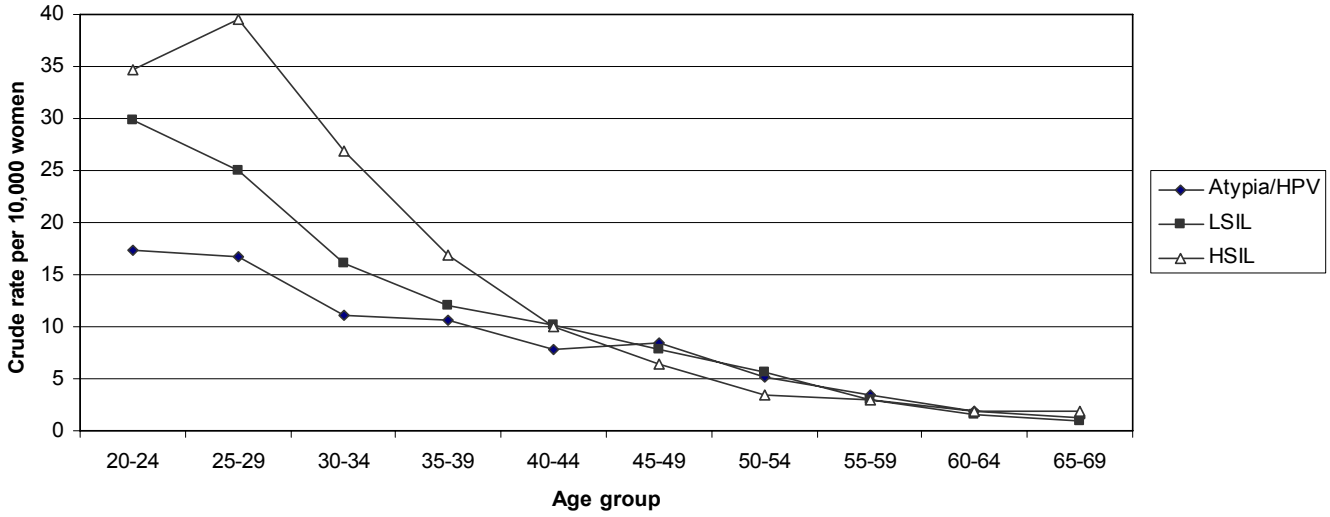


Figure 8: Age-specific Atypia/HPV histology reporting rates per 10,000 women aged 20 to 69 years by ethnicity, 2005

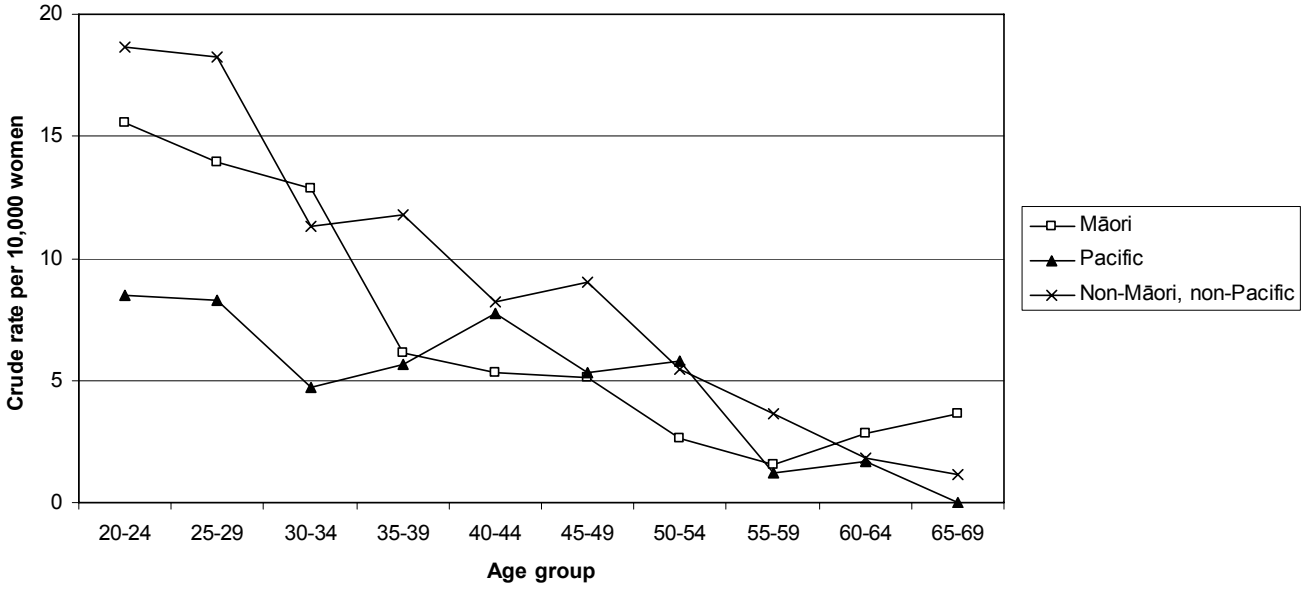


Figure 9: Age-specific LSIL histology reporting rates per 10,000 women aged 20 to 69 years by ethnicity, 2005

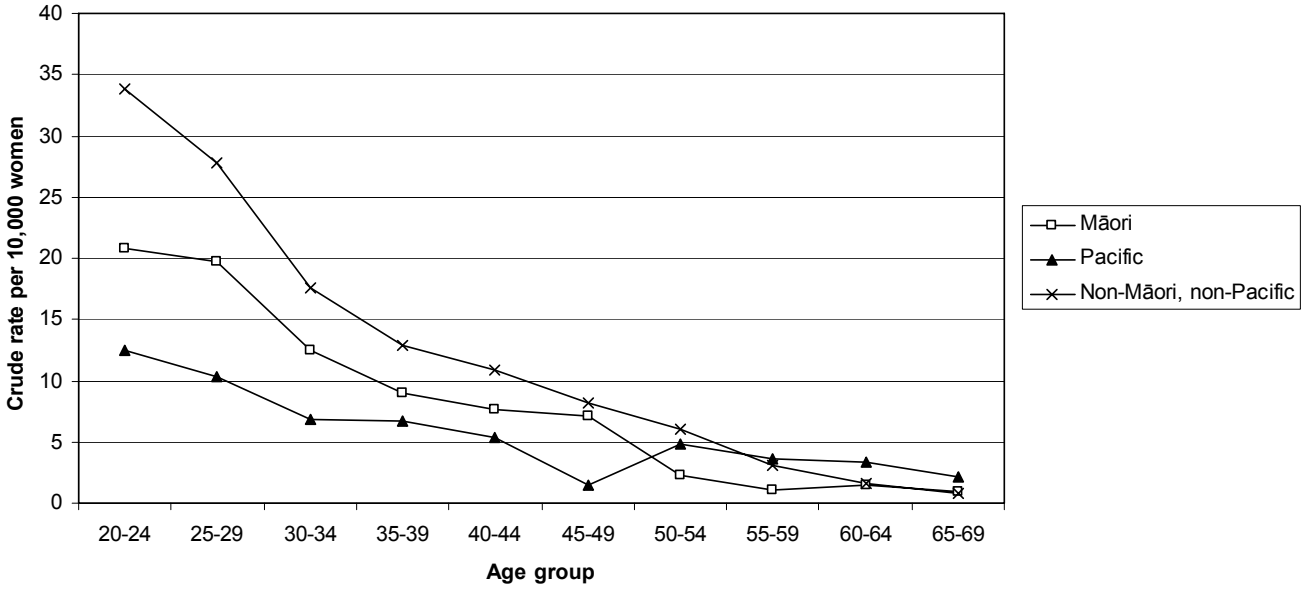


Figure 10: Age-specific HSIL histology reporting rates per 10,000 women aged 20 to 69 years by ethnicity, 2005

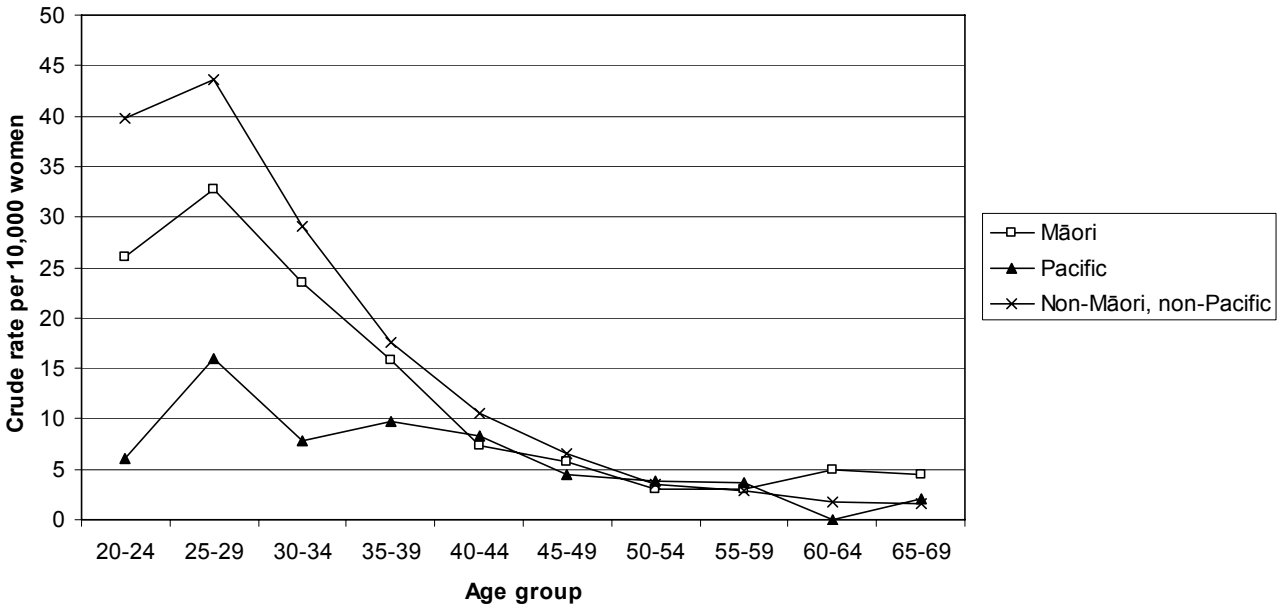


Table 43: Age-standardised histology rates per 10,000 women aged 20 to 69 years by ethnicity, 2005

Histology result category	Ethnic group			All women
	Māori women	Pacific women	Non-Māori, non-Pacific women	
Normal	11.2	8.0	19.9	18.1
Other non-neoplastic	12.2	8.2	18.3	16.9
Polyp	4.6	4.1	7.1	6.7
Atypia/HPV	8.1	5.6	10.5	9.8
CIN, NOS	0.2	0.2	0.4	0.3
LSIL	10.1	6.5	15.0	13.7
HSIL	15.1	7.1	19.5	17.8
Glandular dysplasia	<0.1	0.0	<0.1	<0.1
Adenocarcinoma-in-situ	0.3	0.2	0.5	0.4
Other primary cervical cancer	0.1	0.1	<0.1	0.1
Metastatic (non-cervical) tumour	<0.1	0.2	<0.1	<0.1
Invasive adenocarcinoma	0.3	0.6	0.2	0.2
Adenosquamous carcinoma	0.0	0.0	<0.1	<0.1
Microinvasive squamous carcinoma	<0.1	0.1	0.1	0.1
ISCC	0.6	0.5	0.2	0.3

HPV: Human papillomavirus; CIN: cervical intra-epithelial neoplasia; NOS: Not otherwise specified: LSIL: Low grade squamous intra-epithelial lesion; HSIL: High grade squamous intra-epithelial lesion; ISCC: Invasive squamous carcinoma of the cervix.

Table 44: Age-standardised histology rates per 10,000 women aged 20 to 69 years by NCSP Region, 2005

Histology result category	NCSP Region												
	Auckland	Bay of Plenty	Canterbury	Hawke's Bay	Manawatu/ Whanganui	Nelson/ Marlborough	Northland	Otago/ Southland	Tairawhiti	Taranaki	Waikato	Wellington	West Coast
Normal	29.9	29.6	52.7	54.6	42.0	36.0	13.3	54.9	40.1	36.8	41.6	23.9	29.0
Other non-neoplastic	29.7	66.9	21.1	41.9	23.1	29.7	41.2	27.2	16.2	23.6	48.3	39.3	27.9
Polyp	13.2	20.9	14.0	4.1	11.8	17.9	16.9	15.8	11.7	16.2	5.8	12.9	2.4
Atypia/HPV	19.6	25.9	14.9	16.2	54.8	33.5	14.1	16.9	54.8	12.2	15.1	9.5	6.9
CIN, NOS	0.8	1.1	0.7	0.0	0.1	0.4	0.8	0.1	0.0	3.4	0.1	0.6	0.0
LSIL	22.3	42.6	32.5	14.7	19.3	52.1	12.5	17.7	12.9	29.1	35.8	33.4	47.3
HSIL	27.3	47.4	36.7	54.0	42.2	41.6	44.6	50.4	43.2	44.9	42.7	28.0	39.7
Glandular dysplasia	<0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.1	0.0
Adenocarcinoma-in-situ	1.0	0.3	1.1	1.2	1.6	1.4	0.4	1.8	0.7	0.0	0.3	0.4	3.2
Other primary cervical cancer	0.1	0.2	0.1	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
Metastatic (non-cervical) tumour	<0.1	0.1	0.2	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.2	0.1	0.0
Invasive adenocarcinoma	0.5	0.7	0.3	0.4	0.4	0.2	0.3	0.2	0.0	0.2	0.6	0.6	0.0
Adenosquamous carcinoma	<0.1	0.0	0.1	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Microinvasive squamous carcinoma	0.1	0.0	0.6	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0
ISCC	0.6	0.4	0.3	1.0	0.5	0.8	1.2	0.3	1.4	0.5	0.5	0.5	0.0

HPV: Human papillomavirus; CIN: cervical intra-epithelial neoplasia; NOS: Not otherwise specified: LSIL: Low grade squamous intra-epithelial lesion; HSIL: High grade squamous intra-epithelial lesion; ISCC: Invasive squamous carcinoma of the cervix.

Table 45: Age-standardised histology rates per 10,000 women aged 20 to 69 years by District Health Board, 2005

Histology result category	District Health Board																				
	Auck-land	Bay of Plenty	Canter-bury	Capital Coast	Coun-ties Manu-kau	Hawke's Bay	Hutt Valley	Lakes	Mid-Cen-tral	Nelson/Marl-borough	North-land	Otago	South Canter-bury	South-land	Taira-whiti	Tara-naki	Wai-kato	Waira-rapa	Waite-mata	West Coast	Whan-ganui
Normal	29.8	39.7	53.9	21.8	20.2	54.6	23.0	10.8	46.7	36.0	13.3	66.4	40.2	35.3	40.1	36.8	41.6	36.4	38.0	29.0	28.1
Other non-neoplastic	32.9	80.1	18.1	40.3	18.5	41.9	36.1	42.5	14.8	29.7	41.2	13.8	53.8	50.2	16.2	23.6	48.3	39.0	35.7	27.9	44.1
Polyp	10.3	23.3	12.9	12.8	15.4	4.1	12.5	15.8	12.5	17.9	16.9	17.6	22.5	12.9	11.7	16.2	5.8	12.2	13.8	2.4	9.8
Atypia/ HPV	19.4	35.4	13.5	11.0	14.7	16.2	6.8	9.2	62.5	33.5	14.1	2.4	31.7	43.3	54.8	12.2	15.1	4.0	23.7	6.9	28.4
CIN, NOS	1.0	0.9	0.2	0.3	0.8	0.0	1.0	1.1	0.0	0.4	0.8	0.0	6.6	0.2	0.0	3.4	0.1	1.5	0.4	0.0	0.4
LSIL	16.6	41.0	32.8	38.5	19.0	14.7	17.7	45.5	18.8	52.1	12.5	9.0	23.3	33.7	12.9	29.1	35.8	36.9	30.8	47.3	18.8
HSIL	28.0	46.3	36.5	30.9	18.3	54.0	18.0	47.3	38.3	41.6	44.6	48.7	39.4	53.5	43.2	44.9	42.7	32.3	33.6	39.7	49.3
Glandular dysplasia	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	0.0
Adenocarcinoma-in-situ	1.3	0.4	1.1	0.5	0.8	1.2	0.4	0.0	2.2	1.4	0.4	2.0	0.0	1.2	0.7	0.0	0.3	0.0	0.8	3.2	0.0
Other primary cervical cancer	0.1	0.1	0.1	0.0	0.1	0.4	0.2	0.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Metastatic (non-cervical) tumour	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Invasive adeno-carcinoma	0.7	0.9	0.2	0.7	0.3	0.4	0.6	0.0	0.2	0.2	0.3	0.3	0.4	0.0	0.0	0.2	0.6	0.0	0.5	0.0	1.0
Adeno-squamous carcinoma	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Micro-invasive squamous carcinoma	0.0	0.0	0.6	0.1	0.2	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.5
ISCC	0.7	0.7	0.4	0.3	0.5	1.0	0.6	0.0	0.4	0.8	1.2	0.2	0.0	0.5	1.4	0.5	0.5	0.0	0.6	0.0	0.8

HPV: Human papillomavirus; CIN: cervical intra-epithelial neoplasia; NOS: Not otherwise specified: LSIL: Low grade squamous intra-epithelial lesion; HSIL: High grade squamous intra-epithelial lesion; ISCC: Invasive squamous carcinoma of the cervix.

Figure 11: Age-standardised Atypia/HPV histology rates per 10,000 women aged 20 to 69 years by NCSP Region, 2005

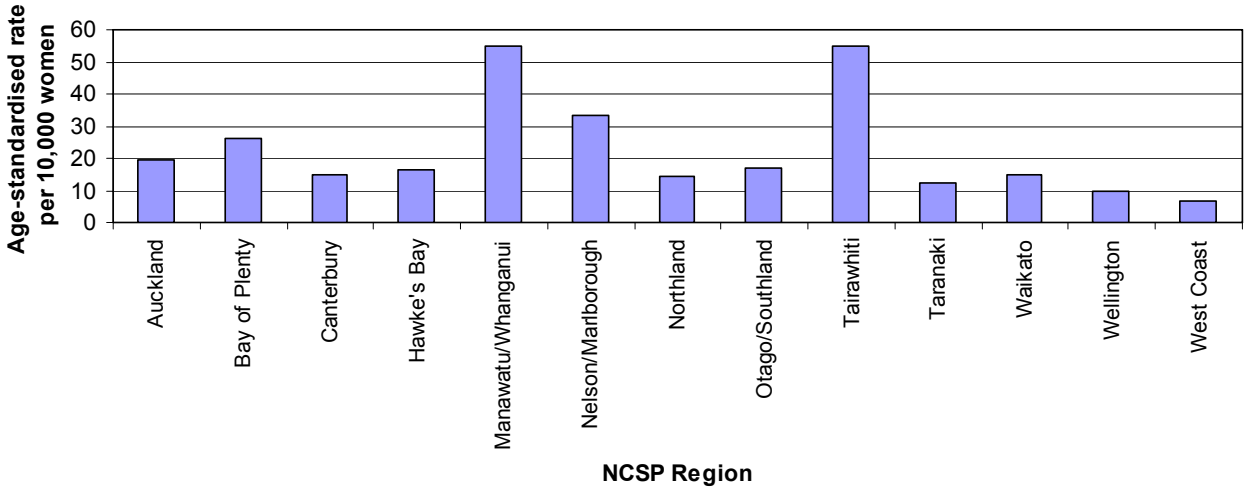


Figure 12: Age-standardised LSIL histology rates per 10,000 women aged 20 to 69 years by NCSP Region, 2005

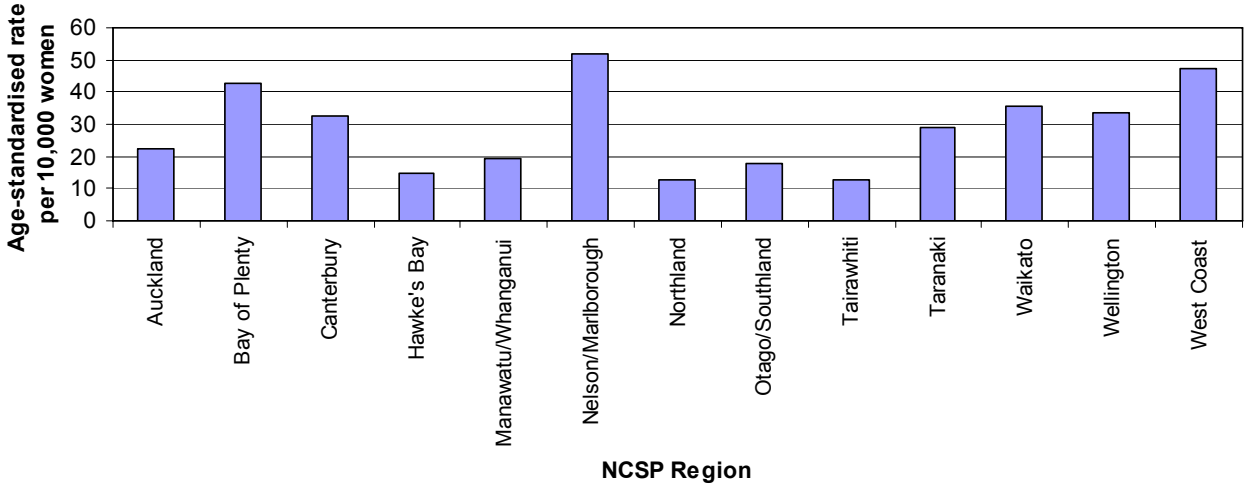


Figure 13: Age-standardised HSIL histology rates per 10,000 women aged 20 to 69 years by NCSP Region, 2005

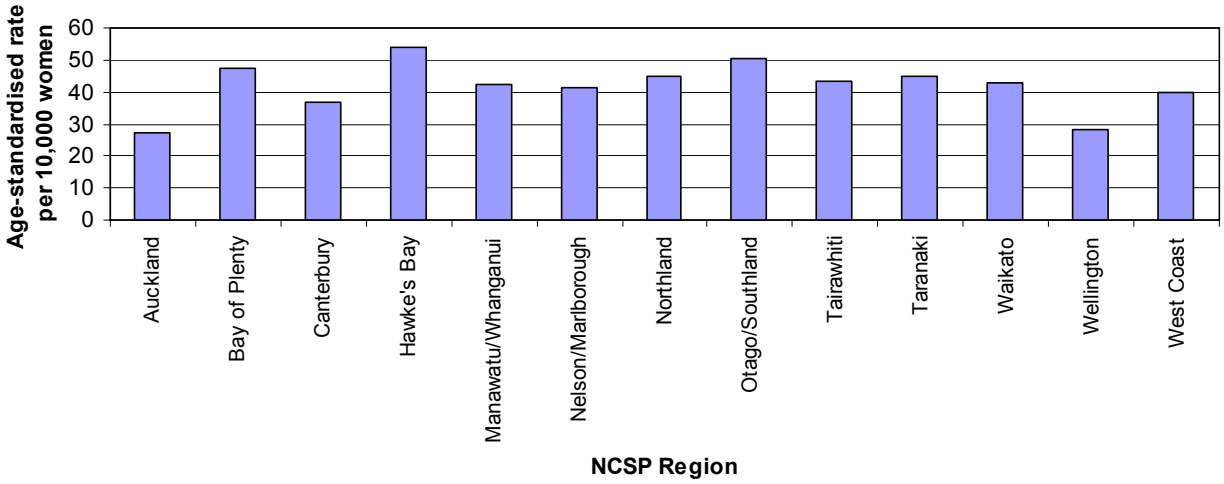


Figure 14: Age-standardised Atypia/HPV histology rates per 10,000 women aged 20 to 69 years by District Health Board, 2005

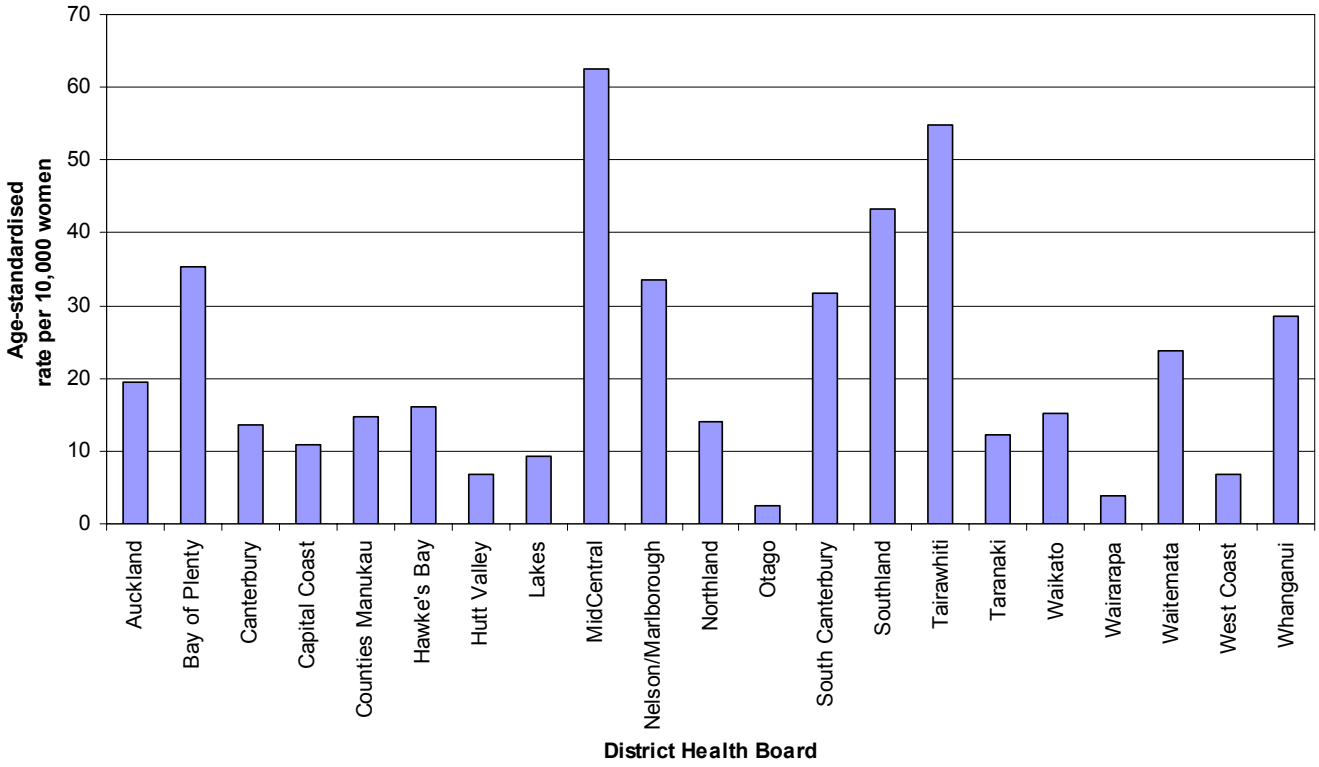


Figure 15: Age-standardised LSIL histology rates per 10,000 women aged 20 to 69 years by District Health Board, 2005

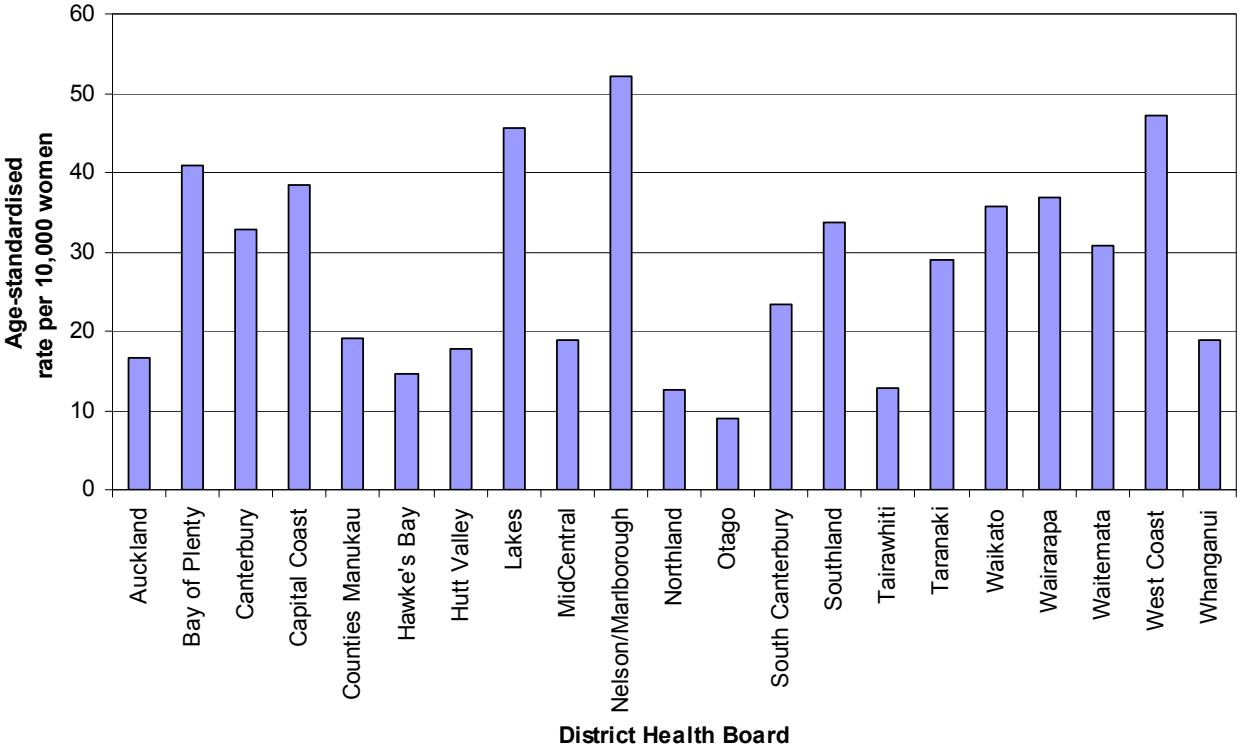
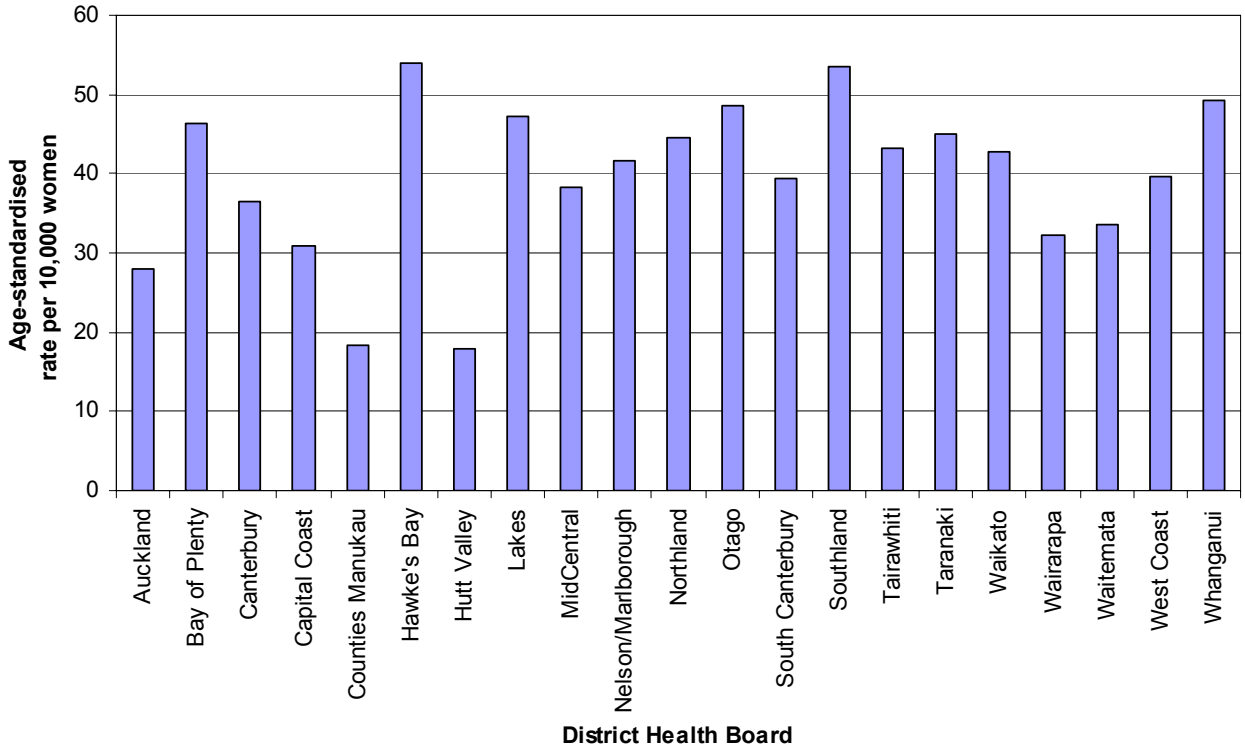


Figure 16: Age-standardised HSIL histology rates per 10,000 women aged 20 to 69 years by District Health Board, 2005



12. Laboratory smear reporting

Definition

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

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

Targets

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

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

Calculation

Laboratory smear reporting was estimated for each reporting quarter in 2005. The Bethesda diagnosis codes, as recorded on the NCSP Register of satisfactory or satisfactory but limited smears taken during each reporting quarter (1 January to 31 March, 1 April to 30 June, 1 July to 30 September, and 1 October to 31 December 2005) were used to calculate the number of smears in each broad cytological category for each laboratory. These smears in each cytological category were expressed as proportions of the total number of satisfactory or satisfactory but limited smears reported by each laboratory. Where a single smear had more than one diagnosis code, the most serious ranked code was used according to the hierarchy of codes (see Appendix 2). Total abnormalities included all smears with a diagnosis code of ASC-US or more serious abnormality (including glandular abnormalities) according to the

hierarchy of broad cytological categories. Smear results for women of all ages were included. Smears recorded as being unsatisfactory for evaluation were excluded.

It should be noted that this indicator has been recalculated to allow for the change in definition of ASC-H/HSIL (*i.e.* the move of Bethesda code C3A2B7 to ASC-H) adopted by the Independent Monitoring Group of the NCSP in 2006, and the data used was from the annual data extract of the NCSP Register (taken six weeks after the end of the reporting period) so the results given here are not the same as those in Quarterly Monitoring Reports 18 to 21.

Please note that in July 2005 the NCSP adopted the 2001 revision of the Bethesda Coding System in which the satisfactory but limited category ceased to be used. As a result, the numbers of smears that were categorised as satisfactory or unsatisfactory for evaluation were different after July 2005 and therefore the results presented in this report are not fully comparable with those from 2004. The targets for this indicator are currently under review because of these changes.

Results

The proportions of satisfactory and satisfactory but limited smears in broad cytological categories are shown by laboratory in Table 46. Table 47 shows these proportions by laboratory for each reporting quarter of 2005. Ten laboratories reported smears in the 2005 reporting period.

Overall, the results of 395,932 satisfactory or satisfactory but limited smears reported by laboratories were recorded on the NCSP Register during 2005. The three hospital-based laboratories, Auckland Hospital Laboratory, Canterbury Health Laboratories and MedLab Central read fewer smears than the community-based laboratories, except for Valley Diagnostic Laboratories. Diagnostic MedLab Auckland read the greatest number of smears (114,183).

Of the 395,932 smears, 92.7% were reported as negative for dysplasia or malignancy (Table 46), compared to 92.3% in 2004. This was within the target of not more than 96%. Each laboratory met the target except SCL Christchurch (96.3%). In 2004, each

laboratory met the target except Valley Diagnostic Laboratory (96.9%). The proportion of smears reported as negative for dysplasia or malignancy was less for the hospital-based laboratories than the community-based laboratories, as it was in 2004.

For all laboratories combined, the proportion of smears reported as HSIL was 1.0% (compared to 0.9% in 2004), which met the target of not less than 0.6%. Each laboratory met the target except for MedLab Wellington (0.5%), and Valley Diagnostic Laboratory (0.4%). Valley Diagnostic Laboratory (0.4%) also failed to meet the target in 2004. Auckland Hospital Laboratory reported the highest proportion of smears as HSIL (4.1%), as it did in 2004 (4.0%).

Overall, the proportion of smears reported as abnormal was 7.3%, compared to 7.7% in 2004, which did not exceed the target of 10%. Amongst the laboratories, Auckland Hospital Laboratory, Canterbury Health Laboratories and MedLab Central reported more than 10% of smears as abnormal, however each of these laboratories process hospital-based smears which are expected to have a higher rate of abnormalities. None of the community-based laboratories reported more than 10% of smears as abnormal, compared with two in 2004; MedLab Bay of Plenty (12.7%) and MedLab Taranaki (12.2%).

Table 46: The proportion of satisfactory and satisfactory but limited smears in broad cytological categories by laboratory, 2005

Laboratory	Negative for dysplasia or malignancy[1]	ASC-US	ASC-H	LSIL	HSIL[2]	Total abnormalities[3]	Total number of smears
Auckland Hospital Lab.	78.9	7.3	2.1	7.2	4.1	21.1	14,398
Canterbury Health Lab.	88.7	3.6	0.9	5.1	1.5	11.3	18,027
Diagnostic MedLab Auckland	94.3	2.3	0.5	2.1	0.7	5.7	114,183
MedLab Bay of Plenty	91.0	4.3	0.4	3.3	0.9	9.0	36,235
MedLab Central	87.4	2.6	0.6	7.8	1.4	12.6	28,660
MedLab Christchurch	92.8	3.1	0.7	2.4	0.9	7.2	32,338
MedLab Wellington	91.4	4.1	0.7	3.1	0.5	8.6	35,790
SCL Christchurch	96.3	1.1	0.2	1.7	0.6	3.7	24,750
SCL Dunedin	95.5	0.1	0.5	2.6	1.3	4.5	78,040
Valley Diagnostic Lab.	95.9	1.3	0.2	2.2	0.4	4.1	13,511
Total	**92.7**	**2.4**	**0.6**	**3.1**	**1.0**	**7.3**	**395,932**

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

Table 47: The proportion of satisfactory or satisfactory but limited smears in broad cytological categories by laboratory and reporting quarter, 2005

Laboratory	Negative for dysplasia or malignancy[1]				HSIL[2]				Total abnormalities[3]			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Auckland Hospital Lab.	77.7	81.4	76.4	78.7	4.6	4.9	3.3	3.2	22.3	18.6	23.6	21.3
Canterbury Health Lab.	88.6	88.1	88.3	89.5	1.4	1.9	1.6	1.2	11.4	11.9	11.7	10.5
Diagnostic MedLab Auckland	94.4	94.5	93.9	94.3	0.9	0.9	0.6	0.5	5.6	5.5	6.1	5.7
MedLab Bay of Plenty	91.1	92.1	90.8	89.9	1.0	1.0	0.7	0.7	8.9	7.9	9.2	10.1
MedLab Central	89.4	87.4	87.7	85.1	1.6	1.5	1.3	1.3	10.6	12.6	12.3	14.9
MedLab Christchurch	93.0	93.3	92.1	92.8	1.0	1.1	0.8	0.5	7.0	6.7	7.9	7.2
MedLab Wellington	91.2	92.6	90.7	91.1	0.7	0.4	0.6	0.5	8.8	7.4	9.3	8.9
SCL Christchurch	96.1	96.1	96.3	96.8	0.6	0.8	0.7	0.4	3.9	3.9	3.7	3.2
SCL Dunedin	95.6	95.8	95.5	95.0	1.4	1.1	1.3	1.3	4.4	4.2	4.5	5.0
Valley Diagnostic Lab.	96.6	96.4	94.7	95.9	0.5	0.3	0.4	0.4	3.4	3.6	5.3	4.1
Total	**93.0**	**93.1**	**92.4**	**92.3**	**1.2**	**1.2**	**0.9**	**0.8**	**7.0**	**6.9**	**7.6**	**7.7**

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

13. Laboratory cytology turn around time

Definition

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

Targets

The targets for the laboratory cytology turn around time are:

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

and

- 100% of cytology 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 to the smear taker, as recorded by the NCSP Register, was used to measure the laboratory turn around time. The numbers of smears reported within seven working days (Monday to Friday), between eight and 14 working days and more than 14 working days were expressed as a proportion of the total number of smears processed by the laboratory during the reporting period (1 January 2005 to 31 December 2005). Smears taken from enrolled women of all ages during the reporting period as recorded on the NCSP Register were included.

Results

The proportion of smears received and reports issued within specified time periods during the period 1 January 2005 to 31 December 2005 for each laboratory processing cervical cytology are shown in Table 48. Ten laboratories reported smears in the 2005 reporting period.

Overall, 97.9% of the 406,063 smears received by laboratories were reported within seven working days (Table 48). This met the target of 90%. All reporting laboratories achieved the seven-day target of 90%. In 2004, 97.3% of the 404,185 smears received by laboratories were reported within seven working days, and all of the reporting laboratories achieved the seven-day target, except MedLab Central (72.7%), and MedLab Taranaki (81.5%).

Overall, the 14-day target of 100% was not quite achieved (99.3%). Four of the 10 reporting laboratories achieved the 100% target: MedLab Central, MedLab Christchurch, MedLab Wellington, and Valley Diagnostic Laboratories. MedLab Christchurch, MedLab Wellington, and Valley Diagnostic Laboratories also met the 14-day target in 2004. SCL Christchurch reported 683 smears (2.7%) outside 14 working days. The other laboratories to report smears outside this target were Auckland Hospital Laboratory (0.8%, n=123), Canterbury Health Laboratories (0.1%, n=25), Diagnostic MedLab Auckland (0.6%, n=721), MedLab Bay of Plenty (1.5%, n=566), MedLab Central (<0.1%, n=9), MedLab Wellington (<0.1%, n=2), and SCL Dunedin (1.0%, n=808). SCL Christchurch, Auckland Hospital Laboratory, Canterbury Health Laboratories, Diagnostic MedLab Auckland, MedLab Bay of Plenty, MedLab Central, MedLab Wellington, and SCL Dunedin also reported smears outside this target in 2004.

The reporting time for the 2,937 smears that were outside the 14-day target ranged from 15 to 304 days, with the median time being 46 days. In 2004 there were 400 smears that were reported outside the 14-day target. The reporting time for these smears ranged from 15 to 361 days, with the median time being 23 days. The increase in the number of smears reported outside the 14-day target is most likely to be due to the changes in smear reporting that are associated with the NCSP's adoption of the 2001 revision of the Bethesda Coding System.

The proportion of smears received and reports issued within specified time periods during the period 1 January 2005 to 31 December 2005 by ethnicity are shown in Table 49. The proportion of Māori women (97.1%) who had a smear reported within seven working days was less than those of Pacific (97.9%) and non-Māori, non-Pacific women (97.9%). Because of the large number of women, these differences

were highly statistically significant, P<0.001. The proportion of Māori women (0.9%, n=326) who had a smear reported outside 14 working days was greater than those of Pacific (0.8%, n=103) and non-Māori, non-Pacific women (0.7%, n=2,508). These differences were also highly statistically significant and are therefore unlikely to have arisen through chance, P<0.001. In 2004, the proportion of Māori women (96.2%) who had a smear reported within seven working days was less than those of Pacific (98.7%) and non-Māori, non-Pacific women (97.3%). These differences were highly statistically significant, P<0.001. In 2004, the proportion of Māori women (0.1%, n=44) who had a smear reported outside 14 working days was the same as those of Pacific (0.1%, n=10) and non-Māori, non-Pacific women (0.1%, n=346), P=0.364.

Table 48: Timeliness of reporting smears by laboratory, 2005

Laboratory	Number of smears processed	Within 7 working days[1]		From 8 to 14 working days		Within 14 working days[2] (cumulative %)		More than 14 working days	
	n	n	%	n	%	n	%	n	%
Auckland Hospital Lab.	14,596	13,381	91.7	1,092	7.5	14,473	99.2	123	0.8
Canterbury Health Lab.	18,210	17,478	96.0	707	3.9	18,185	99.9	25	0.1
Diagnostic MedLab Auckland	117,744	116,893	99.3	130	0.1	117,023	99.4	721	0.6
MedLab Bay of Plenty	37,063	34,569	93.3	1,928	5.2	36,497	98.5	566	1.5
MedLab Central	29,051	28,578	98.4	464	1.6	29,042	100.0	9	<0.1
MedLab Christchurch	34,028	34,028	100.0	0	0.0	34,028	100.0	0	0.0
MedLab Wellington	37,341	36,469	97.7	870	2.3	37,339	100.0	2	<0.1
SCL* Christchurch	24,980	24,110	96.5	187	0.7	24,297	97.3	683	2.7
SCL* Dunedin	79,251	78,141	98.6	302	0.4	78,443	99.0	808	1.0
Valley Diagnostic Lab.	13,799	13,716	99.4	83	0.6	13,799	100.0	0	0.0
Total	**406,063**	**397,363**	**97.9**	**5,763**	**1.4**	**403,126**	**99.3**	**2,937**	**0.7**

Targets are: [1] 90% within seven working days, [2] 100% within 14 working days.

Table 49: Timeliness of reporting smears by ethnicity, 2005

Ethnicity	Number of smears processed	Within 7 working days[1]		From 8 to 14 working days		Within 14 working days[2] (cumulative %)		More than 14 working days	
	n	n	%	n	%	n	%	n	%
Māori	36,485	35,422	97.1	737	2.0	36,159	99.1	326	0.9
Pacific	13,434	13,151	97.9	180	1.3	13,331	99.2	103	0.8
Non-Māori, non-Pacific	356,144	348,790	97.9	4,846	1.4	353,636	99.3	2,508	0.7
Total	**406,063**	**397,363**	**97.9**	**5,763**	**1.4**	**403,126**	**99.3**	**2,937**	**0.7**

Targets are: [1] 90% within seven working days, [2] 100% within 14 working days.

14. Laboratory histology turn around time

Definition

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

Targets

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

Calculation

The difference between the date that the cervical histology specimen was received and the date that the histology result was reported by the laboratory to the clinician, as recorded on the NCSP Register, was calculated for each laboratory that processed cervical histology. For each laboratory, the numbers of cervical histology specimens received during the reporting period (1 January 2005 to 31 December 2005) and reported within five working days (Monday to Friday), six to 10 working days, or more than 10 working days were expressed as proportions of the total number of cervical histology specimens received by each laboratory during the reporting period. Cervical histology specimens taken from enrolled women of all ages during the reporting period as recorded on the NCSP Register were included.

Results

The timeliness of histology reporting during the reporting period 1 January 2005 to 31 December 2005 for each laboratory processing histology specimens is shown in Table 50. Twenty-seven laboratories provided results to the NCSP Register in 2005.

There were a total of 26,521 histology specimens recorded on the NCSP Register during this period (Table 50). The number of specimens reported by each laboratory varied considerably, ranging from 116 in SCL Hawke's Bay to 3,800 in Diagnostic MedLab Auckland. For all laboratories combined, the proportion of histological specimens reported on within five working days was 88.1%, which was below the target of 90%. In 2004, the proportion of histological specimens reported on within five working days was 93.0%, which was above the target of 90%.

Seven laboratories did not meet the five-day 90% target. These were Auckland Hospital Laboratory (70.5%), Hutt Hospital (74.6%), MedLab Wellington (88.4%), Nelson Diagnostic Laboratory (87.2%), North Shore Hospital (31.7%), Rotorua Hospital (80.2%), and Wellington Hospital (64.2%). Five of these laboratories also did not meet the target in 2004; Auckland Hospital Laboratory (68.8%), Hutt Hospital (73.5%), North Shore Hospital (88.3%), Rotorua Hospital (83.4%), and Wellington Hospital (67.2%).

Auckland Hospital Laboratory (25.1%), Hutt Hospital (23.8%), and Wellington Hospital (29.0%) reported the greatest proportion of histology results six to 10 working days from the specimens being received. Auckland Hospital Laboratory (25.9%), Hutt Hospital (25.5%), and Wellington Hospital (29.9%) also reported the greatest proportion of histology results six to 10 working days from the specimens being received in 2004. North Shore Hospital (58.5%), Rotorua Hospital (11.3%), and Wellington Hospital (6.8%) reported the greatest proportion of histology results more than 10 working days after the time that they were received by the laboratory. In 2004, North Shore Hospital (7.2%) and Rotorua Hospital (6.3%) also reported the greatest proportion of histology results more than 10 working days after the time that they were received by the laboratory. Overall, 1,386 (5.2%) specimens were reported after 10 working days, compared to 356 (1.4%) specimens in 2004, and the reporting

time for these specimens ranged from 11 to 255 days, with the median time being 19 days, compared to 11 to 233 days, with the median time being 14 days, in 2004.

The timeliness of histology reporting by ethnicity is shown in Table 51. The data showed ethnic disparities, with the slowest turn around times for Pacific women. The proportion of Pacific women (77.8%) who had histology reported within five working days was less than that of Māori (85.7%) and non-Māori, non-Pacific women (88.7%). These differences were highly statistically significant ($P<0.001$) and are therefore unlikely to have arisen through chance. The proportion of Pacific women (9.8%, n=74) with histology reported outside 10 working days was more than those of Māori (5.8%, n=169) and non-Māori, non-Pacific women (5.0%, n=1,143). These differences were also highly statistically significant, $P<0.001$. These ethnic disparities were also evident in 2004, when Pacific women had the slowest turn around times. The proportion of Pacific women in 2004 (87.1%) who had histology reported within five working days was less than that of Māori (91.3%) and non-Māori, non-Pacific women (93.4%). These differences were highly statistically significant, $P<0.001$. The proportion of Pacific women in 2004 (2.6%, n=16) with histology reported outside 10 working days was more than those of Māori (1.9%, n=57) and non-Māori, non-Pacific women (1.3%, n=283). These differences were also highly statistically significant, $P=0.001$.

Table 50: Timeliness of the reporting of histology by laboratory, 2005

Laboratory	Number of specimens processed	Within 5 working days[1]		6 to 10 working days		11 or more working days	
	n	n	%	n	%	n	%
Auckland Hospital Lab.	1,359	958	70.5	341	25.1	60	4.4
Canterbury Health Lab.	2,071	1,965	94.9	94	4.5	12	0.6
Diagnostic MedLab Auckland	3,800	3,717	97.8	80	2.1	3	0.1
Hutt Hospital	370	276	74.6	88	23.8	6	1.6
MedLab Bay of Plenty	1,856	1,815	97.8	39	2.1	2	0.1
MedLab Central	1,638	1,527	93.2	107	6.5	4	0.2
MedLab Christchurch	151	151	100.0	0	0.0	0	0.0
MedLab Southland	154	154	100.0	0	0.0	0	0.0
MedLab Taranaki	473	469	99.2	4	0.8	0	0.0
MedLab Timaru	372	371	99.7	0	0.0	1	0.3
MedLab Wellington	688	608	88.4	72	10.5	8	1.2
Memorial Hospital Hastings	538	526	97.8	5	0.9	7	1.3
Middlemore Hospital	1,190	1,160	97.5	25	2.1	5	0.4
Nelson Diagnostic Lab.	211	184	87.2	25	11.8	2	0.9
Nelson Hospital	728	684	94.0	29	4.0	15	2.1
Northland Pathology	726	711	97.9	11	1.5	4	0.6
North Shore Hospital	1,839	583	31.7	181	9.8	1,075	58.5
Pathlab Waikato	642	633	98.6	9	1.4	0	0.0
Rotorua Hospital	398	319	80.2	34	8.5	45	11.3
SCL* Christchurch	865	858	99.2	6	0.7	1	0.1
SCL* Dunedin	1,672	1,650	98.7	18	1.1	4	0.2
SCL* Hawke's Bay	116	112	96.6	4	3.4	0	0.0
Southland Hospital	795	730	91.8	50	6.3	15	1.9
Valley Diagnostic Lab.	260	254	97.7	6	2.3	0	0.0
Waikato Hospital	1,898	1,778	93.7	103	5.4	17	0.9
Wanganui Hospital	260	238	91.5	21	8.1	1	0.4
Wellington Hospital	1,451	931	64.2	421	29.0	99	6.8
Total	**26,521**	**23,362**	**88.1**	**1,773**	**6.7**	**1,386**	**5.2**

Targets are: [1] 90% within five working days, and 100% within a reasonable period of time.

Table 51: Timeliness of the reporting of histology by ethnicity, 2005

Ethnic group	Number of specimens processed	Within 5 working days[1]		6 to 10 working days		11 or more working days	
	n	n	%	n	%	n	%
Māori	2,889	2,476	85.7	244	8.4	169	5.8
Pacific	756	588	77.8	94	12.4	74	9.8
Non-Māori, non-Pacific	22,876	20,298	88.7	1,435	6.3	1,143	5.0
Total	**26,521**	**23,362**	**88.1**	**1,773**	**6.7**	**1,386**	**5.2**

Targets are: [1] 90% within five working days, and 100% within a reasonable period of time.

15. Satisfactory but limited and unsatisfactory smears by laboratory

Definition

Satisfactory but limited smears are those smears reported with a Bethesda (1998) adequacy code of A2. In July 2005 the NCSP adopted the 2001 revision of the Bethesda Coding System in which the satisfactory but limited category ceased to be used. Unsatisfactory smears are those smears reported with a Bethesda adequacy of A3 (Revised Bethesda Coding System, 1998), or UA, UB, UC, UD, UE, UF, or UG (Revised Bethesda Coding System, 2001). It is important to note that the adequacy coding of a smear is influenced by both smear taking technique and laboratory reporting practice.

As a result of the adoption of the 2001 revision of the Bethesda Coding System, the numbers of smears that were categorised as satisfactory or unsatisfactory for evaluation were different after July 2005 and therefore the results presented in this report are not fully comparable with those from 2004. The targets for this indicator are currently under review because of these changes.

Targets

The target for satisfactory but limited smears was not more than 20% of all smears reported for a given laboratory. The target for unsatisfactory smears was previously not less than 0.5% and not more than 2.0% of all smears reported for a given laboratory but this is now under review due to the introduction of the 2001 revision of the Bethesda Coding System.

Calculation

All smears taken between 1 January 2005 and 31 December 2005 for which there was a result recorded on the NCSP Register were used to calculate these indicators. The number of satisfactory but limited smears and the number of unsatisfactory smears reported were both expressed as a proportion of the total number of smears processed during the reporting period by each cytology reporting laboratory.

Results

The number and proportion of satisfactory but limited and unsatisfactory smears taken between 1 January 2005 and 31 December 2005 and reported by each cytology laboratory is shown in Table 52. Ten laboratories reported smears in the 2005 reporting period.

Overall, 406,063 smears were processed, of which 8.7% were reported as satisfactory but limited, within the target of not more than 20%. It should be noted, however, that as a result of the introduction of the 2001 revision of the Bethesda Coding System, the category of satisfactory but limited could only be reported for the first six months of the year (up to 30 June 2005). Among the laboratories, the proportion of satisfactory but limited smears varied considerably. This proportion ranged from 3.6% for Canterbury Health Laboratories to 11.7% for Diagnostic MedLab Auckland.

Overall, 10,131 (2.5%) of the 406,063 smears processed were reported as unsatisfactory for evaluation, which exceeded the previous target range of 0.5 to 2.0%. Five laboratories reported unsatisfactory smears above the previous target range; Diagnostic MedLab Auckland (3.0%), MedLab Bay of Plenty (2.2%), MedLab Christchurch (5.0%), MedLab Wellington (4.2%), and Valley Diagnostic Laboratories (2.1%). In 2004, 4,131 (1.0%) of the 404,185 smears processed were reported as unsatisfactory for evaluation.

Table 52: The number and proportion of satisfactory but limited or unsatisfactory smears reported by laboratory, 2005

Laboratory	Total number of smears processed	Satisfactory but limited smears[1]		Unsatisfactory smears[2]	
	n	n	%	n	%
Auckland Hospital Lab.	14,596	1,322	9.1	198	1.4
Canterbury Health Lab.	18,210	660	3.6	183	1.0
Diagnostic MedLab Auckland	117,744	13,719	11.7	3,561	3.0
MedLab Bay of Plenty	37,063	3,146	8.5	828	2.2
MedLab Central	29,051	2,631	9.1	391	1.4
MedLab Christchurch	34,028	3,511	10.3	1,690	5.0
MedLab Wellington	37,341	3,705	9.9	1,551	4.2
SCL* Christchurch	24,980	1,685	6.8	230	0.9
SCL* Dunedin	79,251	3,650	4.6	1,211	1.5
Valley Diagnostic Lab.	13,799	1,420	10.3	288	2.1
Total	**406,063**	**35,449**	**8.7**	**10,131**	**2.5**

SCL*: Southern Community Laboratories.
Targets are under review, but were previously: [1] not more than 20%, [2] 0.5 to 2.0%.

16. Satisfactory but limited and unsatisfactory smears by smear taker

Definition

Satisfactory but limited smears are those smears reported with a Bethesda (1998) adequacy code of A2. In July 2005 the NCSP adopted the 2001 revision of the Bethesda Coding System in which the satisfactory but limited category ceased to be used. Unsatisfactory smears are those smears reported with a Bethesda adequacy of A3 (Revised Bethesda Coding System, 1998), or UA, UB, UC, UD, UE, UF, or UG (Revised Bethesda Coding System, 2001). It is important to note that the adequacy coding of a smear is influenced by both smear taking technique and laboratory reporting practice.

As a result of the adoption of the 2001 revision of the Bethesda Coding System, the numbers of smears that were categorised as satisfactory or unsatisfactory for evaluation were different after July 2005 and therefore the results presented in this report are not fully comparable with those from 2004. The targets for this indicator are currently under review because of these changes.

Targets

The target for satisfactory but limited smears was not more than 20% of all smears reported for each smear taker category. The target for unsatisfactory smears was previously not less than 0.5% and not more than 2.0% of all smears reported for each smear taker category but this is now under review due to the introduction of the 2001 revision of the Bethesda Coding System.

Calculation

Smears taken from enrolled women of all ages between 1 January 2005 and 31 December 2005 for which there was a result recorded on the NCSP Register were used to calculate these indicators. The total number of smears recorded by each smear taker group for the 12 months of 2005 was used to calculate the annual volume of smears taken by each smear taker group. For each group, the number of satisfactory

but limited and unsatisfactory smears was expressed as a proportion of the total number of smears taken by that group.

Results

The numbers and proportions of satisfactory, satisfactory but limited and unsatisfactory smears taken between 1 January 2005 and 31 December 2005 by annual volume of smears taken by each smear taker group is shown in Table 53. Overall, 406,063 smears were taken during the year, of which 41 (<1%) were taken by lay smear takers, 246,833 (61%) by medical smear takers, 124,732 (31%) by nurses, 33,235 (8%) by specialists and 1,222 (<1%) by midwives. These proportions are similar to those reported in 2004.

The proportion of satisfactory but limited smears was within the target of not more than 20% for each smear taker group as a whole (Table 53). It should be noted, however, that as a result of the introduction of the 2001 revision of the Bethesda Coding System, the category of satisfactory but limited could only be reported for the first six months of the year (up to 30 June 2005). All of the smear taker groups, when considered by annual volume, met the target of not more than 20% of smears being reported as satisfactory but limited.

The proportion of unsatisfactory smears exceeded the previous target range of 0.5 to 2.0% for each smear taker group as a whole except for nurse smear takers (1.8%). When smear taker groups were considered by annual volume, the proportion of unsatisfactory smears was less than 2.0% for lay smear takers who took less than 30 smears (0.0%), nurse smear takers with annual volumes of 30 to 100 smears (1.7%) and those who took more than 100 smears (1.8%), and midwives who took 30 to 100 smears (0.9%).

The numbers and proportions of smears taken by each smear taker group by DHB are shown in Table 54. The proportions of smears taken by each group varied considerably (with the exception of lay smear takers). Medical smear takers ranged from taking 77.4% of the smears in Waitemata to taking 24.1% of smears in West Coast. Similarly, nurse smear takers ranged from taking 68.3% of the smears in

Taranaki to 12.2% of smears in Waitemata. Specialist smear takers ranged from taking 13.2% of the smears in the Unspecified DHB to 4.6% of smears in Wairarapa.

Table 53: Quality of smears reported by different smear taker groups, 2005

	Annual volume of smears	Total number of smears	Satisfactory smears		Satisfactory but limited smears[1]		Unsatisfactory smears[2]	
	n	n	n	%	n	%	n	%
Lay	<30	3	3	100.0	0	0.0	0	0.0
	30-100	38	36	94.7	1	2.6	1	2.6
	>100	0	0	0.0	0	0.0	0	0.0
	Total	41	39	95.1	1	2.4	1	2.4
Medical	<30	16,469	14,066	85.4	1,863	11.3	540	3.3
	30-100	70,087	61,351	87.5	6,764	9.7	1,972	2.8
	>100	160,277	140,650	87.8	15,251	9.5	4,376	2.7
	Total	246,833	216,067	87.5	23,878	9.7	6,888	2.8
Nurse	<30	7,458	6,726	90.2	558	7.5	174	2.3
	30-100	49,572	45,019	90.8	3,696	7.5	857	1.7
	>100	67,702	62,060	91.7	4,437	6.6	1,205	1.8
	Total	124,732	113,805	91.2	8,691	7.0	2,236	1.8
Specialist	<30	626	523	83.5	68	10.9	35	5.6
	30-100	3,205	2,797	87.3	279	8.7	129	4.0
	>100	29,404	26,173	89.0	2,419	8.2	812	2.8
	Total	33,235	29,493	88.7	2,766	8.3	976	2.9
Midwife	<30	275	230	83.6	34	12.4	11	4.0
	30-100	228	201	88.2	25	11.0	2	0.9
	>100	719	648	90.1	54	7.5	17	2.4
	Total	1,222	1,079	88.3	113	9.2	30	2.5
	Total	**406,063**	**360,483**	**88.8**	**35,449**	**8.7**	**10,131**	**2.5**

Targets are: [1] not more than 20%, [2] 0.5 to 2.0%.

Table 54: The proportion of smears taken by each smear taker group by District Health Board, 2005

DHB	Smear Taker Group										Total number of smears
	Lay		Medical		Nurse		Specialist		Midwife		
	n	%	n	%	n	%	n	%	n	%	n
Auckland	0	0.0	34,715	77.2	5,865	13.0	4,367	9.7	30	0.1	44,977
Bay of Plenty	0	0.0	8,979	44.0	10,132	49.7	1,236	6.1	42	0.2	20,389
Canterbury	3	<0.1	31,475	65.9	10,909	22.9	5,359	11.2	5	<0.1	47,751
Capital Coast	0	0.0	22,359	72.5	6,478	21.0	2,002	6.5	1	<0.1	30,840
Counties Manakau	0	0.0	28,400	73.3	8,194	21.1	2,144	5.5	24	0.1	38,762
Hawke's Bay	0	0.0	6,892	50.1	5,669	41.2	1103	8.0	85	0.6	13,749
Hutt	0	0.0	8,099	66.4	3,284	26.9	791	6.5	27	0.2	12,201
Lakes	0	0.0	5,130	52.0	4,204	42.6	529	5.4	6	0.1	9,869
MidCentral	0	0.0	4,925	32.9	8,010	53.5	1,759	11.7	289	1.9	14,983
Nelson/Marlborough	0	0.0	7,561	59.1	4,440	34.7	791	6.2	2	<0.1	12,794
Northland	0	0.0	5,928	46.3	6,064	47.3	825	6.4	1	<0.1	12,818
Otago	0	0.0	10,970	57.9	6,223	32.8	1,683	8.9	86	0.5	18,962
South Canterbury	0	0.0	2,704	54.3	1,637	32.9	635	12.8	0	0.0	4,976
Southland	0	0.0	5,710	52.6	4,462	41.1	681	6.3	3	<0.1	10,856
Tairawhiti	0	0.0	1,936	43.0	2,015	44.8	418	9.3	132	2.9	4,501
Taranaki	0	0.0	2,855	26.1	7,475	68.3	619	5.7	2	<0.1	10,951
Waikato	38	0.1	11,778	37.8	17,102	54.9	2,081	6.7	182	0.6	31,181
Wairarapa	0	0.0	2,166	59.3	1,314	36.0	168	4.6	2	0.1	3,650
Waitemata	0	0.0	39,802	77.4	6,291	12.2	5,210	10.1	138	0.3	51,441
West Coast	0	0.0	624	24.1	1,758	67.8	212	8.2	0	0.0	2,594
Whanganui	0	0.0	2,482	44.8	2,585	46.6	321	5.8	157	2.8	5,545
Unspecified	0	0.0	1,343	59.1	621	27.3	301	13.2	8	0.4	2,273
Total	**41**	**<0.1**	**246,833**	**60.8**	**124,732**	**30.7**	**33,235**	**8.2**	**1,222**	**0.3**	**406,063**

17. Waiting time for colposcopic assessment for HSIL or ASC-H

Definition

The waiting time for colposcopic assessment for HSIL or ASC-H 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 for colposcopic assessment of women with a high grade cytology result is 95% of women having assessment within four weeks of referral.

Calculation

The data required for the calculation of the waiting time for colposcopic assessment of HSIL or ASC-H indicator are supposed to be collected by DHB colposcopy clinics and reported to the NSU. The indicator was unable to be calculated with the available data. Nevertheless, the number of women with HSIL or ASC-H cytology results who were referred to DHB colposcopy clinics each month in 2005, and the number of women with HSIL or ASC-H cytology results who were waiting longer than four weeks for colposcopic assessment at the end of each month, reported by DHB colposcopy services were provided by the NSU.

Please note that the data reported here was from the annual data held by the NCSP, rather than quarterly data, so the results given here are not the same as those in Quarterly Monitoring Reports 18 to 21.

Results

The reported number of women with a HSIL or ASC-H cytology result referred each month in 2005 for colposcopic assessment to each DHB colposcopy service, and the reported number of women referred for colposcopic assessment of a HSIL or ASC-H cytology result waiting longer than four weeks at the end of each month is shown by quarter in Table 55. One colposcopy clinic, Nelson/Marlborough, did not report

complete data for this reporting year, compared with three (Nelson/Marlborough, Northland, and Waitemata) in 2004.

The reported number of women referred for an assessment of a HSIL or ASC-H cytology abnormality waiting longer than four weeks at the end of each month was highest for Hawke's Bay colposcopy unit (283 women for the January to March quarter, 137 women for the April to June quarter, 144 women for the July to September quarter, and 75 women for the October to December quarter). Hawke's Bay colposcopy unit also had the highest number of women waiting for more than four weeks at the end of each month in 2004 (91 women for the January to March quarter, 63 women for the April to June quarter, 117 women for the July to September quarter, and 262 women for the October to December quarter). Two colposcopy units, Otago, and Whanganui, reported that no women waited longer than four weeks from referral for their assessment. In 2004, four colposcopy units, Bay of Plenty, Canterbury, MidCentral and Otago, reported that no women waited longer than four weeks from referral for their assessment.

Table 55: Waiting time for colposcopic assessment of HSIL or ASC-H between 1 January 2005 and 31 December 2005 by District Health Board colposcopy service

DHB colposcopy reporting unit	Number of women referred for assessment of HSIL or ASC-H				Number of women referred waiting longer than 4 weeks at the end of each month			
	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec
Auckland	75	87	91	117	1	0	0	0
Bay of Plenty	78	67	41	67	22	32	15	14
Canterbury	82	108	60	63	0	0	54	50
Capital Coast	37	10	53	36	7	1	3	2
Counties Manukau	65	95	142	109	25	65	96	98
Hawke's Bay	62	65	53	74	283	137	144	75
Hutt Valley	13	9	21	27	14	15	6	6
Lakes	22	34	24	19	8	19	3	8
MidCentral	28	33	60	53	0	0	9	8
Nelson/Marlborough	NR	NR	20	17	NR	NR	19	14
Northland	27	35	34	38	0	0	7	2
Otago	79	65	67	58	0	0	0	0
South Canterbury	3	6	6	2	0	1	0	0
Southland	0	0	3	0	16	12	8	5
Tairawhiti	9	8	10	11	5	5	3	5
Taranaki	20	24	32	25	4	8	7	1
Waikato	82	72	85	96	0	4	14	19
Wairarapa	5	6	2	11	4	5	0	2
Waitemata	0	0	186	178	0	62	46	0
West Coast	0	4	11	4	2	0	0	1
Whanganui	10	16	14	12	0	0	0	0
Total	**697**	**744**	**1,015**	**1,017**	**391**	**366**	**434**	**310**

NR: not reported.

18. Waiting time for colposcopic assessment for LSIL or ASC-US

Definition

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

Target

The target for colposcopic assessment of women with a low grade cytology result is 95% of women having assessment within 26 weeks of referral.

Calculation

The data required for the calculation of the waiting time for the assessment of the LSIL or ASC-US indicator are supposed to be collected by DHB colposcopy clinics and reported to the NSU. The indicator was unable to be calculated with the available data. Nevertheless, the number of women with low grade cytology results who were referred to DHB colposcopy clinics each month in 2005, and the number of women with low grade cytology results who were waiting longer than 26 weeks for colposcopic assessment at the end of each month, reported by DHB colposcopy services were provided by the NSU.

Please note that the data reported here was from the annual data held by the NCSP, rather than quarterly data, so the results given here are not the same as those in Quarterly Monitoring Reports 18 to 21.

Results

The reported number of women with low grade cytology results referred each month in 2005 for colposcopic assessment to each DHB colposcopy service, and the reported number of women referred for colposcopic assessment of a low grade cytology result waiting longer than 26 weeks at the end of each month is shown by quarter in Table 56. One colposcopy clinic, Nelson/Marlborough, did not report complete data for this

reporting year, compared with three (Nelson/Marlborough, Northland, and Waitemata) in 2004.

The reported number of women referred for an assessment of a LSIL or ASC-US cytology abnormality waiting longer than 26 weeks at the end of each month was highest for Hawke's Bay colposcopy unit (260 women for the January to March quarter, 177 women for the April to June quarter, 262 women for the July to September quarter, and 270 women for the October to December quarter). Hawke's Bay colposcopy unit also had the highest number of women waiting for more than 26 weeks at the end of each month in 2004 (131 women for the January to March quarter, 118 women for the April to June quarter, 167 women for the July to September quarter, and 249 women for the October to December quarter). Three colposcopy units, Northland, Taranaki, and Whanganui, reported that no women waited longer than 26 weeks from referral for their assessment. In 2004, four colposcopy units, Bay of Plenty, Captial Coast, Otago and Whanganui, reported that no women waited longer than 26 weeks from referral for their assessment.

Table 56: Waiting time for colposcopic assessment of LSIL or ASC-US between 1 January 2005 and 31 December 2005 by District Health Board colposcopy service

DHB colposcopy reporting unit	Number of women referred for assessment of LSIL or ASCUS				Number of women referred waiting longer than 26 weeks at the end of each month			
	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec
Auckland	99	129	114	43	0	0	1	0
Bay of Plenty	116	108	80	93	273	318	91	117
Canterbury	175	120	160	132	2	0	19	10
Capital Coast	142	39	111	129	0	0	0	4
Counties Manukau	120	74	129	99	102	65	91	99
Hawke's Bay	32	31	19	29	260	177	262	270
Hutt Valley	27	31	29	45	1	0	11	3
Lakes	86	62	47	77	110	176	22	24
MidCentral	63	30	96	116	9	10	17	70
Nelson/Marlborough	NR	NR	1	15	NR	NR	10	7
Northland	25	35	20	22	0	0	0	0
Otago	41	52	72	41	0	0	21	16
South Canterbury	1	3	1	5	5	3	3	0
Southland	42	20	50	34	25	25	11	4
Tairawhiti	15	13	19	23	7	2	1	4
Taranaki	10	33	28	10	0	0	0	0
Waikato	110	101	130	127	93	84	82	33
Wairarapa	37	30	7	57	2	3	0	2
Waitemata	0	0	118	99	0	54	8	0
West Coast	1	8	12	4	1	0	0	0
Whanganui	58	74	68	57	0	0	0	0
Total	**1,200**	**993**	**1,311**	**1,257**	**890**	**917**	**650**	**663**

NR: not reported.

19. Positive predictive value for women with a high grade smear

Definition

The positive predictive value (PPV) for women with a high grade smear is one measure of the accuracy of high grade cytology reports. It is defined as the probability of a histological report of HSIL or higher following a HSIL or ISCC cytology report. The PPV for women with an ASC-H cytology report is defined as the probability of a histological report of HSIL or higher following the ASC-H cytology report.

Targets

The target for PPV is not less than 65% and not more than 85% of all HSIL or ISCC cytology results reported by a given laboratory. There is no target for the PPV of ASC-H cytology results.

Calculation

All satisfactory smears that were reported as HSIL or ISCC in the period from 1 July 2004 to 30 June 2005 were identified. Where a woman had more than one HSIL or ISCC smear in this period, the first one was used. For each woman, all histology results taken in the period from five days before the HSIL or ISCC smear to 182 days (six months) after that smear were identified. When more than one histology result was present, the first histology which was classified as high grade or cancer on the SNOMED classification was identified (see Appendix 3). Those women whose high grade smear was classified as high grade or worse on histology are termed as having "histological confirmation of the HSIL or ISCC smear".

The number of women with histological confirmation of a HSIL or ISCC smear was expressed as a proportion of all women with a HSIL or ISCC cytology report and a subsequent histology. This measures the PPV for women with a HSIL or ISCC cytology report. This indicator was calculated for each laboratory according to where the smears were read.

The proportion of HSIL or ISCC cytology reports without a follow-up histology report was also calculated for each laboratory.

The PPV for women with an ASC-H cytology report was also calculated. The methodology used for this calculation was the same as that described above. Therefore, those women with an ASC-H smear, whose follow-up histology was classified as high grade or worse, are termed as having "histological confirmation of the ASC-H smear".

Results

The number of women with high grade or ISCC cytology reports and subsequent histology reports on the NCSP Register is shown in Table 57. This table also shows the proportion of women for whom these cytology reports were confirmed on histology as HSIL or more serious abnormality (which is the PPV). The proportion of women with a HSIL or ISCC smear without histological follow-up is also shown in Table 57. Note that in this calculation ASC-H cytology reports are not included as HSIL or ISCC. The number of women with a ASC-H cytology report and subsequent histology report on the NCSP Register is shown in Table 58. This table also shows the proportion of women for whom these cytology reports were confirmed on histology as HSIL or more serious abnormality (the PPV), and the proportion of women with a ASC-H smear without histological follow-up.

During the period 1 July 2004 to 30 June 2005, there were 2,986 women with HSIL or ISCC cytology reports, of whom 2,714 (90.9%) had a subsequent histology result recorded on the NCSP Register (Table 57). Of these, 2,042 (75.2%) were confirmed as having HSIL or more serious abnormality on histology. This PPV is within the target range of 65 to 85%. This proportion is almost identical to that reported in 2004; 75.7%.

Three laboratories reported a PPV outside the target range of 65 to 85%. MedLab Central (61.7%) and MedLab Wellington (64.3%) reported a PPV below the target range and Canterbury Health Laboratories reported a PPV above the target range (87.4%). Canterbury Health Laboratories also reported a PPV above the target range in 2004 (88.0%).

During the period 1 July 2004 to 30 June 2005, there were 2,311 women with an ASC-H cytology report (Table 58), of whom 1,862 (80.6%) had a subsequent histology result recorded on the NCSP Register. Of these, 831 (44.6%) had a HSIL or more serious abnormality on histology. This proportion is almost identical to that reported in 2004; 44.8%.

The proportion of women that had a HSIL or more serious histology result after an ASC-H smear varied between the laboratories. Valley Diagnostic Laboratories had the lowest proportion (23.1%), but only 18 women were reported as having an ASC-H smear from Valley Diagnostic Laboratories. Canterbury Health Laboratories had the highest proportion (68.1%).

Table 57: Positive predictive value for women with a high grade smear by laboratory, 1 July 2004 to 30 June 2005

Laboratory	HSIL reports with a histology report		HSIL confirmed by histology		HSIL reports without a histology report		Total
	n	%	n	%**	n	%	n
Auckland Hospital Lab.	302	91.2	251	83.1	29	8.8	331
Canterbury Health Lab.	127	96.2	111	87.4	5	3.8	132
Diagnostic MedLab Auckland	476	89.1	351	73.7	58	10.9	534
MedLab Bay of Plenty	166	90.2	139	83.7	18	9.8	184
MedLab Central	248	85.2	153	61.7	43	14.8	291
MedLab Christchurch	156	91.2	123	78.8	15	8.8	171
MedLab Hamilton	6	100.0	5	83.3	0	0.0	6
MedLab Wellington	157	90.2	101	64.3	17	9.8	174
PathLab Waikato	9	100.0	6	66.7	0	0.0	9
SCL* Christchurch	108	92.3	81	75.0	9	7.7	117
SCL* Dunedin	901	92.1	683	75.8	77	7.9	978
Valley Diagnostic Lab.	58	98.3	38	65.5	1	1.7	59
Total	**2,714**	**90.9**	**2,042**	**75.2**	**272**	**9.1**	**2,986**

SCL*: Southern Community Laboratories.
**Positive predictive value: proportion of HSIL cytology reports confirmed on histology.
Target: 65 to 85%.

Table 58: Positive predictive value for women with an ASC-H smear by laboratory, 1 July 2004 to 30 June 2005

Laboratory	ASC-H reports with a histology report		ASC-H confirmed by histology		ASC-H reports without a histology report		Total
	n	%	n	%**	n	%	n
Auckland Hospital Lab.	156	79.6	94	60.3	40	20.4	196
Canterbury Health Lab.	94	81.7	64	68.1	21	18.3	115
Diagnostic MedLab Auckland	553	79.2	232	42.0	145	20.8	698
MedLab Bay of Plenty	181	85.0	76	42.0	32	15.0	213
MedLab Central	157	73.7	71	45.2	56	26.3	213
MedLab Christchurch	204	82.6	72	35.3	43	17.4	247
MedLab Hamilton	3	75.0	1	33.3	1	25.0	4
MedLab Wellington	128	80.5	56	43.8	31	19.5	159
PathLab Waikato	7	70.0	2	28.6	3	30.0	10
SCL* Christchurch	34	87.2	18	52.9	5	12.8	39
SCL* Dunedin	332	83.2	142	42.8	67	16.8	399
Valley Diagnostic Lab.	13	72.2	3	23.1	5	27.8	18
Total	**1,862**	**80.6**	**831**	**44.6**	**449**	**19.4**	**2,311**

SCL*: Southern Community Laboratories.
**Positive predictive value: proportion of ASC-H cytology reports confirmed on histology.

20. Short interval re-screening

Definition

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

Target

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

Calculation

To estimate the proportion of women that were re-screened earlier than recommended (short interval re-screening), women who were aged 20 to 69 years at 31 December 2005 were identified. These women were further included in the calculation if: they had a normal smear history when they enrolled on the NCSP Register; all of their cytological and histological results prior to 1 April 2003 were recorded as negative for dysplasia or malignancy; they had at least one satisfactory smear taken between 1 April 2003 and 31 December 2005; their first smear taken between 1 April 2003 and 31 December 2005 was not the woman's first ever smear and it was not the first smear that the woman had had in more than five years. Women who did not meet these criteria were not included because they would have been recommended to have a further smear in less than three years.

The calculation of the proportion of women who were re-screened before the recommended three years excluded women who had had an abnormal smear between 1 April 2003 and 31 December 2005. The number of women who had had two or more smears in the time period was expressed as a proportion of the number of women who had had at least one smear.

It should be noted that short interval re-screening is calculated over 33 months (1 April 2003 to 31 December 2005) rather than 36 months. This is to allow three months of flexibility around the recommended screening interval.

Results

The estimated level of short interval re-screening for 20 to 69 year old women by 5-year age group is shown in Table 59. The overall level of short interval re-screening for 20 to 69 year old women was 11.7%. This level is above the target of less than 10%, and is almost identical to the level reported in 2004 (11.8%). The proportion of women who were re-screened within a short interval varied slightly by age. Women who were aged 20 to 24 years were most likely to be re-screened with a short interval (14.5%), while women who were aged 65 to 69 years were least likely to be re-screened with a short interval (8.1%). The target of less than 10% was only met for women that were aged between 60 and 69 years. This pattern is the same as that reported in 2004.

Table 60 shows the variation in short interval re-screening for 20 to 69 year old women by 5-year age group across the reporting quarters for 2005. There was very little change over the year in the proportion of women who were re-screened with a short interval.

Table 61 shows the estimated level of short interval re-screening by ethnicity. The level of short interval re-screening was above the target of less than 10% (and therefore the target was not met) for women of all ethnicities, non-Māori, non-Pacific women (11.8%), Māori women (11.0%), and Pacific women (10.9%). These proportions are similar to those reported in 2004; non-Māori, non-Pacific women (11.9%), Māori women (11.3%), and Pacific women (10.1%).

Table 62 shows the proportion of short interval re-screening for 20 to 69 year old women by DHB. Figure 17 shows the proportion of short interval re-screening for 20 to 69 year old women by DHB for the four quarters of 2005. Short interval re-screening varied considerably among the DHBs, ranging from 17.1% in Waitemata to 5.8% in Nelson/Marlborough. Nelson/Marlborough, Taranaki, and West Coast showed consistently low levels, while Auckland and Waitemata consistently showed the highest levels of short interval re-screening among the DHBs. In 2004, Nelson/Marlborough, Taranaki, and West Coast also showed consistently low levels, and Auckland and Waitemata also consistently showed the highest levels of short interval re-screening among the DHBs.

Table 59: Proportion of women aged 20 to 69 years unnecessarily re-screened within the 33 months to 31 December 2005 by 5-year age group

Age group (years)	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months		Proportion with short interval re-screening (%)
			At least one smear	More than one smear	
20-24	18,182	2,972	15,210	2,212	14.5
25-29	29,664	2,937	26,727	3,097	11.6
30-34	36,581	2,333	34,248	4,134	12.1
35-39	44,606	2,105	42,501	5,042	11.9
40-44	49,546	1,999	47,547	5,791	12.2
45-49	45,087	1,564	43,523	5,380	12.4
50-54	37,699	998	36,701	4,692	12.8
55-59	32,879	534	32,345	3,507	10.8
60-64	24,228	328	23,900	2,236	9.4
65-69	19,041	192	18,849	1,530	8.1
Total	**337,513**	**15,962**	**321,551**	**37,621**	**11.7**

Target: less than 10%.

Table 60: Proportion of women aged 20 to 69 years unnecessarily re-screened within the 33 months to the end of each reporting quarter in 2005 by 5-year age group

Age group (years)	Proportion with short interval re-screening (%)			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
20-24	14.5	14.3	14.7	14.5
25-29	11.6	11.7	11.9	11.6
30-34	12.0	12.1	12.3	12.1
35-39	12.0	11.7	11.9	11.9
40-44	12.1	12.1	12.1	12.2
45-49	12.2	12.2	12.2	12.4
50-54	12.4	12.5	12.6	12.8
55-59	11.0	10.8	10.8	10.8
60-64	9.7	9.4	9.4	9.4
65-69	8.3	8.3	8.1	8.1
Total	**11.7**	**11.6**	**11.7**	**11.7**

Target: less than 10%.

Table 61: Proportion of women aged 20 to 69 years unnecessarily re-screened within the 33 months to 31 December 2005 by ethnicity

Ethnic group	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months		Proportion with short interval re-screening (%)
			At least one smear	More than one smear	
Māori	24,792	1,799	22,993	2,539	11.0
Pacific	8,414	437	7,977	867	10.9
Non-Māori, non-Pacific	304,307	13,726	290,581	34,215	11.8
Total	**337,513**	**15,962**	**321,551**	**37,621**	**11.7**

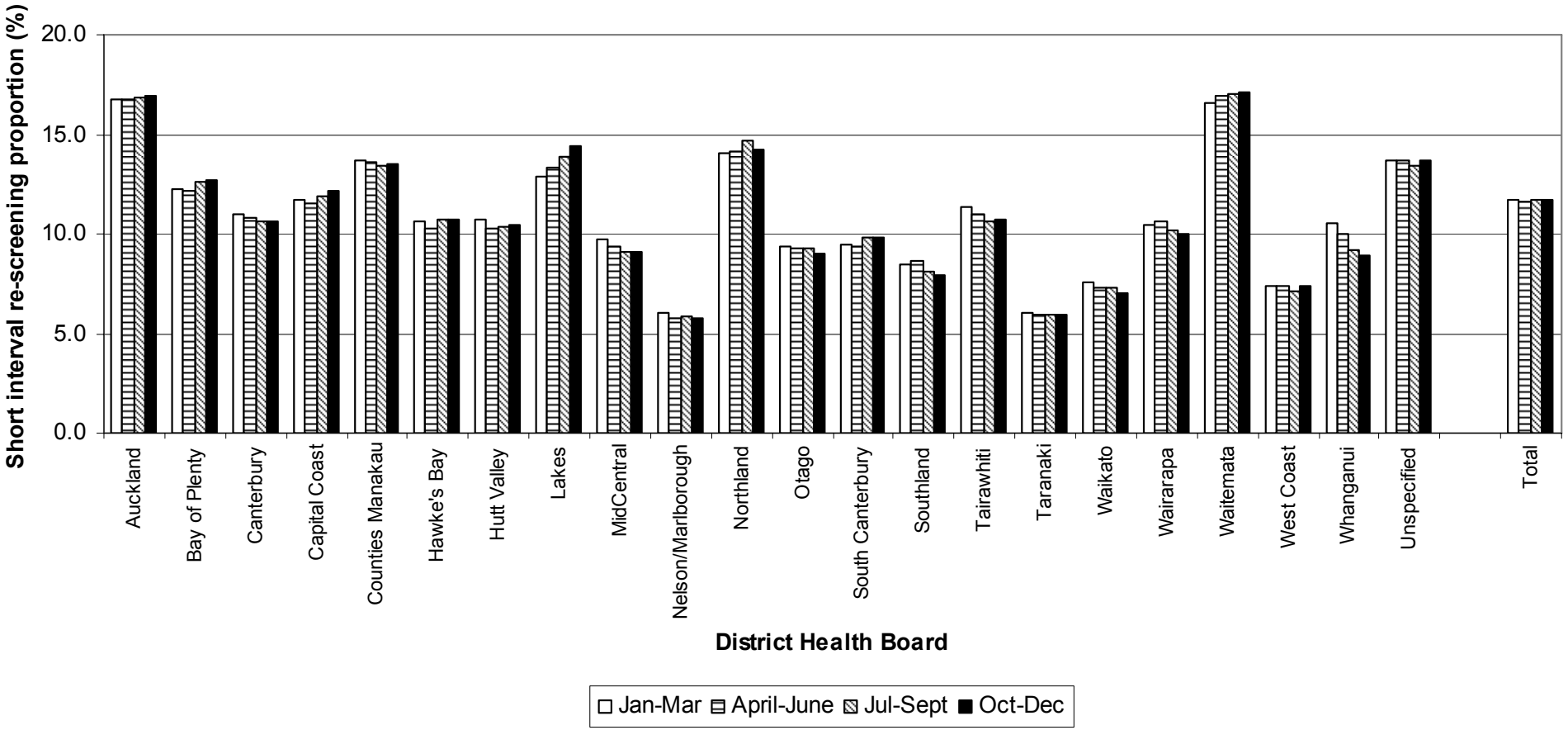
Target: less than 10%.

Table 62: Proportion of women aged 20 to 69 years unnecessarily re-screened within the 33 months to 31 December 2005 by District Health Board

DHB	Total number of women	Women with abnormal smear in previous 33 months	Women with only normal smears in previous 33 months		Proportion with short interval re-screening (%)
			At least one smear	More than one smear	
Auckland	31,975	1,601	30,374	5,135	16.9
Bay of Plenty	15,351	1,230	14,121	1,795	12.7
Canterbury	43,121	1,778	41,343	4,379	10.6
Capital Coast	25,547	1,386	24,161	2,936	12.2
Counties Manakau	27,295	1,165	26,130	3,520	13.5
Hawke's Bay	12,732	625	12,107	1,293	10.7
Hutt Valley	11,527	412	11,115	1,157	10.4
Lakes	8,532	571	7,961	1,151	14.5
MidCentral	12,105	844	11,261	1,021	9.1
Nelson/Marlborough	12,230	553	11,677	676	5.8
Northland	12,868	445	12,423	1,764	14.2
Otago	19,989	621	19,368	1,743	9.0
South Canterbury	4,706	225	4,481	440	9.8
Southland	10,218	448	9,770	776	7.9
Tairawhiti	3,286	144	3,142	336	10.7
Taranaki	10,310	355	9,955	595	6.0
Waikato	26,414	1,141	25,273	1,787	7.1
Wairarapa	3,125	170	2,955	295	10.0
Waitemata	36,925	1,669	35,256	6,019	17.1
West Coast	2,850	120	2,730	201	7.4
Whanganui	4,786	345	4,441	395	8.9
Unspecified	1,621	114	1,507	207	13.7
Total	**337,513**	**15,962**	**321,551**	**37,621**	**11.7**

Target: less than 10%.

Figure 17: Proportion of women aged 20 to 69 years unnecessarily re-screened within the 33 months to 31 December 2005 by District Health Board



Appendix 1: National indicators not included in the 2005 Annual Report

Women enrolled on the NCSP Register but not currently participating

Definition

The women who are enrolled on the NCSP Register but who are not currently participating are defined as the proportion of 25 to 69 year old women enrolled on the NCSP Register, who are alive and who have not had a smear recorded on the NCSP Register in the previous six years, as a proportion of all 25 to 69 year old women.

Target

There is no target.

Delayed re-screening of women with a high grade or worse abnormality

Definition

Delayed re-screening of women with a high grade or worse abnormality is defined as the proportion of participating women with a history of CIN NOS, HSIL, or more serious who have completed treatment ('signed in' status) who have had a smear within:

1. Less than 15 months
2. 15 to 18 months
3. More than 18 months
4. 18 months to six years
5. No smear recorded

as a proportion of all participating women with a history of HSIL or more serious who have completed treatment.

Targets

The targets for delayed re-screening for women with a high grade or worse abnormality are:

1. More than or equal to 85%
2. More than 99%
3. No target
4. No target.

Stage of invasive cervical cancer

Definition

The stage of invasive cervical cancer is the classification of the extent of invasive cervical cancer cases at diagnosis by International Federation of Gynecology and Obstetrics (FIGO) staging (I-V).

Target

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

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.

Programme sensitivity

Definition

Programme sensitivity is the proportion of women with screen detected ISCC whose cervical cancer was detected at one year and at three years.

Target

The targets for ISCC are 85% at one year and 75% at three years.

Opt-off rate

Definition

The opt-off rate is the proportion of all cervical cytology results for women aged 20 to 69 years reported by the laboratory that have not been sent to the NCSP Register because the women chose not to have the result recorded on the NCSP Register.

Target

There is no target.

Please note that after the changes to the Health (National Cervical Screening Programme) Amendment Act 2004, which came into effect in March 2005, women are no longer able to opt-off individual smear results (they now only have the option of withdrawing from the Programme). Therefore this indicator is no longer applicable.

Accuracy of negative cytology reports

Definition

The accuracy of negative cytology reports is the ability of a laboratory to correctly identify a negative smear. The proportion of women with a HSIL or more serious histological diagnosis who had a negative smear result reported in the previous 42 months which on review of the cervical cytology was consistent with ASC-H or more serious.

Target

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

Waiting time for colposcopic assessment for HSIL or ASC-H

Definition

The waiting time for colposcopic assessment for HSIL or ASC-H 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% of women with a high grade cytology result to have a colposcopic assessment within four weeks.

Waiting time for colposcopic assessment for LSIL or ASC-US

Definition

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

Target

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

Residual High-Grade Disease after Treatment

Definition

Residual high-grade disease after treatment is high-grade squamous (CIN II-III) or glandular intra-epithelial lesions present at the post-treatment colposcopy (usually four to six months) for all methods of treatment.

Target

The target is not more than 15% with residual high-grade disease.

Appendix 2: Revised Bethesda coding system (1998 & 2001) by the broad cytological categories used for NCSP Independent Monitoring Reports

The Bethesda coding system revisions of 1998 and 2001 were used for this annual monitoring period since the 2001 revision was adopted in New Zealand in July 2005. The 2001 codes are given in bold type.

Cytological Category	Diagnosis codes
Negative for dysplasia or malignancy	C1A1; C1B1; C1B2; C1C1; C1D2; C1E; C2A1; C2A1A; C2A4; C2A4A; C2B1A; C2B1B; C2B2; C2B2A; C2B4; C3B1; C3B1A; C3B1B; C3B1C **O1; O2; O3; O4; O5; OT1; OT2; OT3**
Abnormal not otherwise specified	C6 (not in use in Bethesda 2001)
Atypical squamous cells of undetermined significance - excluding high-grade (ASC-US)	C3A1; C3A1A; C3A1B; C3A1C; C3A1D; C3A1F; C3A1G **ASL**
Low-grade squamous intra-epithelial lesion (LSIL)	C3A2A; C3A2A1; C3A2A2; C3A2A3 **LS**
Atypical glandular/endocervical/endometrial cells (AGC)	C3B2; C3B2B; C3B2B1; C3B2C; C3B2E **AG1; AG3**
Atypical glandular/endocervical/endometrial cells (AGC) favouring a neoplastic process	C3B2A; C3B2A1; C3B2B2; C3B2D **AG2; AG4; AG5**
Atypical squamous cells of undetermined significance, cannot exclude high-grade (ASC-H)	C3A1E; **ASH**

High-grade squamous intra-epithelial lesion (HSIL)	C3A2B; C3A2B1; C3A2B2; C3A2B3; C3A2B4; C3A2B5; C3A2B6; C3A2B7 **HS1; HS2**
Adenocarcinoma-in-situ (AIS)	C3B3D; C3B3E; C3B3F **AIS**
Adenocarcinoma	C3B3; C3B3A; C3B3B; C3B3C **AC1; AC2; AC3; AC4**
Cancer not otherwise specified	C3C; C4 **AC5**
Invasive squamous carcinoma of the cervix	C3A3 **SC**

Appendix 3: SNOMED codes by the broad histological categories used for NCSP Independent Monitoring Reports

Histological Category	SNOMED codes
Normal	M60000
Other non-neoplastic	M40000; M72480; M73000; M01000
Polyp	M76800
Atypia/HPV	M67000; M76700; M76720; M67030
CIN not otherwise specified	M67015
LSIL	M67016
HSIL	M67017
Glandular dysplasia	M67031
Adenocarcinoma-in-situ (AIS)	M81402
Other primary cervical cancer	M80203; M88003; M80003
Metastatic (non-cervical) tumour	M80006
Invasive adenocarcinoma	M81403
Adenosquamous carcinoma	M85603
Microinvasive squamous carcinoma	M80763
Invasive squamous carcinoma	M80703