

Notes about methodology

Since 1996, collection of ethnicity data has been based on 'self-identification' rather than percentage of blood line or ancestry for most health-related data (e.g. register of births and deaths, hospitalisation data and census data). This gives scope for people to state their ethnicity according to the social group(s) with which they feel a common cultural or historical connection* rather than being based on biological descent, place/country of birth, or country of residence. It also allows for more than one ethnicity to be chosen and for ethnicity to change over time.

Since 1996 there has also been a classification system that prioritises ethnicity, so that each individual is allocated to one ethnic group. This system is used where analysis requires that individuals are counted in only one group. Ethnic groups are prioritised into one using the following prioritisation order:

Māori 1; Pacific Island 2; South East Asian 3; Indian 4; Chinese 5; Other Asian 6; Other 7; Other European 8; European/Pākehā 9; Not reported 10.

If an individual states they belong to more than one ethnic group, only one ethnicity will be assigned when it comes to analysing the data. For example, if European and New Zealand Māori are chosen the individual will be assigned to the NZ Māori group. For Māori, this means that the maximum possible number of Māori will be counted (the total responses for Māori are equivalent to the prioritised responses, because Māori have been given the first priority). Since the 2001 Census, Statistics New Zealand has generally reported statistics on a total response basis. That is, persons are counted in each affiliated ethnic group therefore one person may be counted several times if they belong to several ethnic groups. Health statistics, however, continue to be produced on a prioritised basis, which create a potential problem of undercounting for some groups, particularly when comparing rates across different ethnic groups.

All complete population data are used to calculate rates and numbers of cases can be regarded as samples in time. Confidence intervals for age-specific rates have been calculated using Poisson distribution 95% confidence limits for the observed number of cases,(89) unless otherwise specified. This is because the number of observed cases is usually less than 100 in these Māori-only analyses. It should be noted that these confidence intervals do not account for the uncertainty in rate estimates associated with uncertainty in population counts.

Ethnicity and census data

Throughout this report rates for Māori have been calculated using census data as the bottom-line population. The New Zealand census occurs every five years and collects information from every individual currently and usually residing in New Zealand, including ages and ethnicities. It is therefore possible to calculate the total number of Māori living in New Zealand, by region and age. However, there are problems with using this information to calculate rates over time. The data are collected at one point in time (e.g. 1991, 1996, 2001, 2006) and for the years in between census collections, an estimate must be made of population numbers.

* The current official Statistics New Zealand definition of 'ethnic group' is a social group whose members:
Share a sense of common origin
Claim a common and distinctive history and destiny
Possess one or more dimensions of collective cultural individuality (such as language, religion, customs, mythology or folklore)
Feel a sense of unique collective solidarity.

An important issue with census data is that the question asking about ethnicity was different in the 1996 Census to the question in the 1991 and 2001 censuses. In 1991 and 2001, the question asked was: 'Which ethnic group do you belong to?' with the option to mark the boxes or spaces that were applicable (New Zealand European, Māori, Samoan, Cook Island Māori, etc). In 1996, the ethnicity question was changed to: 'Tick as many circles as you need to show which ethnic group(s) you belong to'. There was an 'Other European' option that did not appear on the 1991/2001 censuses and 'NZ Māori' was moved to the top of the list of options. When ethnicity data from 1991 and 1996 were compared, in 1996 there were many more multiple ethnicity responses (people identifying more than one ethnicity), a drop in those identifying solely as Māori, and more people overall identifying as Māori as one of their ethnicities.(90) The overall increase in numbers of Māori was much greater than expected. In fact, the count of Māori was very similar in 1996 compared to 2001,(91) suggesting an inflated response in 1996. It appears that the different wording of the question led to people responding differently and thus the populations identified as Māori in these censuses are not the same or wholly comparable (i.e. Māori ethnicity census data from 1996 are not consistent with either 1991 or 2001 data). Research also showed that the 1991 question provided a better measure of 'ethnicity', meaning cultural affiliation, than the 1996 question, which people were more likely to interpret as asking for ancestry information.(92),(93) The larger than expected numbers of Māori identified in the 1996 Census means that it is difficult to interpret changes in the rates of health issues (e.g. fertility, disease, hospitalisations, mortality) pre and post 1996. An apparent improvement in a rate may merely be due to the increased Māori population counted in the 1996 Census.

The census, in addition to the question on ethnicity, also has a question on whether the person has any Māori descent. Not everyone who reports having Māori descent also chooses NZ Māori as their ethnicity. This report uses the number of people who have identified themselves as Māori* in the ethnicity question (not the descent question) as its baseline Māori population.

The population denominator used in this report is based on 1991 and 2001 Census data, which both use the same ethnicity question (using interpolation † for the years in between). The 'usually resident' population estimate is used, i.e. the number of people who usually live in a certain area, even if on census night some people from that area were staying in a different part of New Zealand. This also includes an estimate of undercounting on census night ‡ and New Zealand residents who are temporarily overseas.§ Visitors from overseas and visitors from other places in New Zealand are excluded. For 2001, there was also an adjustment made for the 4% of people who made no response to the ethnicity question,(94) with additional numbers assigned to each ethnic group according to the percentage of the groups in the whole population. This adjustment was not made in previous census estimates, which excluded non-responders from the counts of people by ethnicity. This means that the 2001 estimates of ethnic groups are higher in number than if the adjustment were not made (26,000 'extra' people in the Māori estimate). For years beyond 2001, projections are used although may be subject to error. Projections are estimates made by taking the latest census results and making assumptions about how many people will move in or out of the region and how many births and deaths will occur. As such they are 'best guesses' and may be inaccurate, particularly for Māori, as information on migration in and out of New Zealand by ethnicity is lacking.

* From 1996, either only/sole Māori or Māori as one of their ethnicities; prior to 1996, both sole and part Māori.

† Interpolation is a mathematical way of inserting unknown numerical values/data in between known values/data, e.g. if one had data for 2000 and 2002 that were 10 and 20 respectively, one could interpolate from this known data that the value in 2001 was 15.

‡ Undercounting is estimated through a post-census survey (conducted shortly after the actual census).

§ Temporarily overseas is defined as being away from New Zealand for less than one year.

Ethnicity and health data

Primary care

The collection of ethnicity data from primary care/general practice is not yet routine or consistent.(95) It is hoped that Primary Health Organisations, through their mandate to reduce health inequalities and improve quality through good information,(46) will make accurate recording of the ethnicity of patients a priority so that more can be known about the health needs of Māori and their access to primary care.

Births and deaths

All births and deaths in New Zealand are registered with the Department of Internal Affairs. Ethnicity information prior to 1995 was collected only for Māori and Pacific births and deaths so that records that lacked ethnicity information were assumed to be non-Māori and non-Pacific (which would have led to undercounting of these two groups).(93) Also prior to 1995, ethnicity was based on ancestry ('half or more blood') rather than cultural affiliation. From January 1996 registration forms for births and deaths were changed to be the same as the 1996 Census ethnicity and ancestry questions, so that data collected from registrations and the census could be comparable. Since this change ethnicity is asked of all individuals, is no longer based on the ethnicity of the parents, and missing ethnicity data can be measured (rates of missing data have been low).

Māori births increased in 1996 after the introduction of the ethnicity reporting by cultural affiliation rather than ancestry. Deaths also increased but there is an added complication that when looking at Māori deaths, over 90% are 'sole' Māori (rather than mixed or identifying multiple ethnicities). However, when comparing this to census information, only around 50% of Māori ethnic group are 'sole' Māori. This implies an inaccuracy in the deaths information for ethnicity and it is thought this occurs because the relatives who are asked for the deceased ethnicity are more likely to report a single ethnicity, whereas the individual when alive may have recorded multiple ethnicities on the census form.(93) Māori deaths are therefore likely to be undercounted in death registrations. This is likely to be less of an issue for infant mortality as rates are calculated using number of live births as recorded through birth registrations, rather than census information.

Hospitalisations

Ethnicity reporting for hospital admission data has been poor in the past, with ethnicity being inaccurately recorded (or not recorded)(96) or being asked in a different way from the census ethnicity question.(92) There was significant undercounting of Māori in the early-mid 1990s.(93) From 1996 hospitals were required to collect ethnicity information from all patients in a standard way based on the 1996 Census question (which allowed for multiple ethnicities). However, an audit in 1999 by Statistics New Zealand concluded that this had not been adequately done in many hospitals.(93) There is also a lower than expected number of multiple ethnicities recorded from hospital data.

Hospitalisation data is available from public hospital records from 1988 but admissions to private hospitals have been collected only from 1997 and may be incomplete (e.g. public-funded events, such as births, may be complete but privately-funded events may not). However, most conditions discussed in this report are those that would require an acute admission (admission to hospital upon presentation with symptoms), rather than an arranged admission (admission which is planned ahead of time, usually for a chronic medical problem) which is more likely to be privately funded. Acute admissions are predominantly to public rather than private hospitals, so this is unlikely to introduce any significant undercounting of hospitalisations.