

# **How Statisticians Describe Aboriginal and Torres Strait Islander Peoples<sup>1</sup>**

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This paper is concerned with the statistics on the health and welfare of the Aboriginal and Torres Strait Islander people. It places these statistics in their historical context and describes the problems that Australian administrators and bureaucrats have had in dealing with the censusing and statistical recording of the Indigenous population and the improvements in the data. It then discusses three ongoing problems with Indigenous health and welfare statistics, namely under counting, the non-response to the question on identity in the census and the propensity of people to change their identity between censuses. It examines the consequences of these problems for the reliability of statistics on Indigenous mortality. It concludes with an examination of some ways forward.

## **An Historical Context**

At the time of Federation, a noted statistician, Timothy Coghlan, the New South Wales Statistician, estimated the Indigenous population of Australia to be “something like 200,000” (Coghlan 1900). He made this estimate, despite the 1891 census enumerating only 38,879 Aboriginal people across the whole of Australia.

At Federation, the constitution provided that “In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted”. Why this clause was included in the constitution is far from clear. It was not an instruction not to count Aboriginal people, as has been widely assumed. My own reading of the constitutional debates shows that Sir Samuel Griffith had taken a strong interest in how the House of Representatives was to be elected. Many groups had no electoral franchise in the Australian colonies, although Aboriginal people did have the franchise in some colonies (but not if they were women in the early 1890s when these issues were being debated). The strong sentiment was that while up to that time respective States had decided franchise, after Federation the Federal Parliament should determine franchise. Those views prevailed.

Griffith was also interested in the method of apportioning the seats among the States, and insisted this be according to population, not electors. Sir Henry Parkes in stating his principles for Federation at the opening of the 1890 Convention in Sydney had put this forward. But towards the close of that Convention, Griffith (1890) put forward the clause excluding “aboriginal natives” from the population for this purpose. He said this provision had been included in the original draft Constitution Bill to be considered at that Convention, which he and others had drafted over 3 days on the Queensland Government’s steamer *Lucinda*, just prior to the Convention. For some reason, the relevant clauses had been replaced and the exclusion had been lost, so he was acting to

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<sup>1</sup> Note that this is a revised written paper that may differ from the originally presented seminar presentation.

reinstate it. He did not give any rationale, and his proposal was carried without debate. (In an 1896 address (Griffith 1896), he elaborated on the apportionment issue, and noted that the US Constitution partially excluded native Americans not subject to tax in the apportionment for the House of Representatives).

The first Commonwealth Statistician obtained a legal opinion that “persons of the half blood” are not “aboriginal natives” for the purposes of the Constitution. So the first Australian census in 1911 included in its population tables only those of half or lesser Aboriginal descent. “The cards relating to full-blooded Australian Aborigines were eliminated” (Statistician’s report on the 1911 Census, Melbourne 1917).

But some “aboriginal natives” were in fact counted in the 1911 census. The count included those “in the employ of whites or (who) were living in contiguity to the settlements of whites”. A total of 19,939 were enumerated (Commonwealth Bureau of Census and Statistics 1913). As well, 10,113 of half or lesser Aboriginal blood were enumerated (who were included in the population tables).

So the total Aboriginal count in 1911 was 30,052. The drop of around 9,000, or over 20%, from 1891 to 1911 may be due to the restricted counting rule for “aboriginal natives” in 1911: Coghlan reports NSW and Victoria counted all Aborigines in 1891, whereas WA had only counted those “in the employ of the colonists”.

The same Yearbook discusses the possible population of “aboriginal natives”, and reports an estimate of 150,000. The Aboriginal population is said to be “rapidly disappearing” (op cit, p 107). In retrospect, it is disappointing that there was not more analysis to back up this sweeping and important statement, but it fitted with the sentiment of the times (cf, Bates 1938).

Interestingly, an earlier Yearbook (No. 3 pp158-176) (Commonwealth Bureau of Statistics 1910) contains a special article entitled “The Aborigines of Australia”, written by W Ramsay Smith, Permanent Head of the Department of Public Health of South Australia. It is a fascinating summary of the views of the day, but does not sit well with the more analytical descriptions quoted above (Smith also published an address on Aborigines he made to the Australasian Association for the Advancement of Science in 1907).

The Bureau of Statistics continued to publish estimates of Aboriginal population up until the 1960s, calculated in much the same way as described for the 1911 census. Estimates of full-blood people out of contact with the census were included. For example, the 1967 Yearbook (p206) estimates the Aboriginal population at 79,253, of whom 39,172 met the criteria for inclusion in national population counts, and 40,081 were “full-blood”. In addition, there were 4972 full-blood Torres Strait Islanders and 245 half European blood Torres Strait Islanders, giving a total Indigenous population of 84,270.

In 1967, clause 127 of the Constitution was repealed, and the census moved to an “origin” question, which has continued, with some modifications, since then.

Coghlan's thoroughness and his willingness to chance his arm with an estimate of the Aboriginal population (200,000) that was so far out of line with the most recent census count is impressive. The early Commonwealth Statisticians were also thorough in reporting all the people they enumerated, regardless of the Constitutional limitation. But after 1913, the official statisticians were content to report population estimates based on those enumerated in the census, plus estimates from welfare authorities of those living beyond the reach of the census.

Why was undercount never considered? In these years, there was excellent reason to fear the census collector as an agent of government. Drastic consequences could, and did, befall mixed-race children identified to government. We are not suggesting census collectors passed on information to other government agencies. But the Aboriginal people would have found it hard to distinguish the neutrality of the census collector from the interference of the welfare official.

Given the example of Coghlan and Knibbs (the Commonwealth Statistician in 1913), it is a pity later statisticians did not attempt more thoughtful estimates of the Aboriginal population. One can only speculate on the policy consequences if the official estimates had been between 150,000 and 200,000 over the fifty years after the First World War (i.e., more in line with Coghlan and Knibbs' estimates), rather than numbers one third of this range.

## **1967 to 1990**

The 1967 referendum had also allowed the Australian Government to make laws in respect of Aboriginal people for the first time. From the early 1970s, a variety of special programs were put in place, and substantial sums of money allocated to address the widely recognised disadvantages of they suffered.

The statistical system did not keep pace with these constitutional changes. For example, the 1981 Australian Yearbook reports the Aboriginal population to be 115,953 at the 1971 census, the first based on an origin question, and 160,915 only 5 years later at the 1976 census, a growth of 39%. This astounding growth does not rate a mention, and the surrounding text is unchanged from that in the 1977-78 Yearbook, prior to the release of the 1976 results.

Both the 1977-78 and 1981 Year Books noted in a single sentence, "The expectation of life at birth for Aboriginal Australians may be as low as 50 years, compared with 72 (73 in 1981) years for the rest of the population." (ABS 1978, ABS 1981). The 1981 Yearbook contains no other national statistics on Aboriginal people, other than some fertility estimates.

In 1984, the Australian Government initiated moves to get all States and Territories to identify Aboriginal people in their births and deaths data collections and met a generally favourable response. From that time on, useable data on Aboriginal mortality began to become available for WA, SA and the NT. While Queensland was the only State not to introduce an identifier (until the mid 1990s), the other States experienced rates of identification too low for useful data to be obtained.

By 1989, the Australian Yearbook begins to reveal a little more about Aboriginal life. Statistics on the urban/rural split of Aboriginal population are included. There is information on Aboriginal land tenure and spending on Aboriginal programs. But employment, income, educational experience and health and welfare are not described. In 1987, the Australian Institute of Health was established. Its first Director, Len Smith, had long had an interest in Aboriginal issues and the Institute immediately took a keen interest in the field. The first edition of Australia's Health (1988) devoted a 20 page chapter to Aboriginal health. Topics included demography, birth weights of Aboriginal babies, infant mortality, maternal mortality, population mortality, sickness and disease and the provision of health services.

The Institute also took the initiative to seek to improve statistics on Aboriginal health. A workshop in Darwin in 1986 took stock of the current availability of statistics and called for proper resourcing of this important field. It stressed the need to work with Aboriginal people. Interestingly, it urged the use of Medicare statistics to add to information on Aboriginal health. Regrettably, action did not follow. Significantly, an Indigenous identifier was not introduced into Medicare until 2002.

At the end of this period, the statistical system received a much-needed external shock. In 1989, the Royal Commission into Aboriginal Deaths in Custody reported. Its findings on incarceration of Aboriginal people and deaths while in custody caused a groundswell of concern and action. Recommendation 49 dealt with the paucity of statistical information about the Aboriginal and Torres Strait Islander populations, and stated: "That proposals for a special national survey covering a range of social, demographic, health and economic characteristics of the Aboriginal population with full Aboriginal participation at all levels be supported."

### **The 1990s and Beyond**

The Government agreed to the Royal Commission's recommendation. The Australian Bureau of Statistics was specially funded to conduct this survey, the National Aboriginal and Torres Strait Islander Survey 1994 (NATSIS). After a considered development process, highlighted by a comprehensive consultative process, the survey covered the full range of social and economic issues and significantly, explored more sensitive issues around attachment to land and removal from family. Its release focussed national attention on the deprivation of Aboriginal and Torres Strait Islander peoples. Because the survey was the first of its kind, there was, in retrospect, insufficient attention to the initial output. The initial results showed that Aboriginal people had better self-assessed health status than other Australians, the consequence of the much younger Aboriginal population. But the data had not been age-standardised. After standardisation, the position was reversed (Cunningham, Sibthorpe and Anderson 1997). Nevertheless, the non-standardised initial result was still being quoted in 2000 in international conferences to demonstrate the difficulties of applying common survey instruments to different populations.

In 1993, the AIHW held another workshop on the need for better Aboriginal health statistics. With exception of the NATSIS, there had been little improvement since the 1986 Darwin workshop. Queensland had still not introduced an Indigenous identifier into its birth and death statistics. New resolutions demanding improvement were passed, but with no accompanying implementation strategy.

In the same year, the National Health Information Agreement was put in place. The Commonwealth, all State and Territory governments, the ABS and the AIHW agreed to work towards consistent health statistics. The National Health Information Management Group (NHIMG), reporting to the Australian Health Ministers' Advisory Council (AHMAC), was established to implement the Agreement.

In early 1995, the then Director of the AIHW, Bruce Armstrong, met with Richard Madden in his role as Acting Australian Statistician, to propose that both organisations pool their efforts in improving Aboriginal and Torres Strait Islander statistics. An agreement, with financial support from the Office of Aboriginal and Torres Strait Islander Health (OATSIH) in the Department of Health and Ageing, was signed in 1996 by Richard Madden as the new AIHW Director and Bill McLennan, the new Australian Statistician. The agreement demonstrated enthusiasm and momentum, backed by resources, to improve Indigenous statistics.

A joint Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU) was established within the ABS National Centre for Aboriginal and Torres Strait Islander Statistics (NCATSIS) in Darwin.

Importantly, the agreement included establishing an advisory committee, with an Indigenous majority. At last, there was a broadly representative group to lobby for adequate Aboriginal statistics.

One of the first actions under the new arrangements was to commission a plan for improved Aboriginal health statistics. Published in 1997, and subtitled *This Time Let's Make It Happen*, the Aboriginal and Torres Strait Islander Health Information Plan (AHMAC & AIHW 1997), generally referred to by the acronym NIHIP, recognised that the previous workshops had broadly outlined the actions that needed to be taken to improve Aboriginal statistics and contained specific recommendations for action. NHIMG established a special purpose NIHIP Implementation Working Group, chaired by the NHIMG chair, to drive implementation.

The ATSIHWIU Advisory Committee had already begun to lobby hard for a second NATSIS. The problem was resources. Additional government funding for ABS was unlikely. The ABS floated the prospect of itself half funding the survey if other funders provided the other half. Before negotiations had advanced very far, the ABS withdrew this offer in the face of competing priorities. Instead, it established a review of its entire social survey program.

The NIHIP Implementation Working Group had begun by demanding acceptable quality mortality statistics in all States and Territories and full identification of

Indigenous people in all administrative by-product data collections. Now it urged that the ABS survey program include surveys of Indigenous people.

In the outcome of its review, the ABS announced plans for a 3 yearly Indigenous health survey (to cover remote areas every 6 years) and an Indigenous social survey. The latter has now been recognised as the successor to the NATSIS, with many topics in common. NCATSIS took seriously the large increase in Indigenous census counts between 1991 and 1996. Of the 33% increase, 19% was found to be due to increased propensity to identify. The increase was concentrated in urban areas. NCATSIS recognised the difficulty of estimating Indigenous population in the face of the uncertainties over the level of identification, a problem that remains today.

The ATSIHWIU Advisory Committee and NIHIP Implementation Working Group were merged in 2001 to form the National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data (NAGATSIHID), reporting to NHIMG and chaired by the NHIMG Chair, an AHMAC member. In 2003, the Chair has passed to the Chair of the Standing Committee on Aboriginal and Torres Strait Islander Health (SCATSIH), who is also an AHMAC member.

In summary, in 2003, these new arrangements have resulted in:

- a recognition that enumerating Indigenous people is a complex task, and that estimating Indigenous population is a matter needing sophisticated techniques as well as judgment
- published Indigenous births and deaths statistics for all jurisdictions; but the quality is variable and inconsistent
- an array of administrative by-product data showing service use by Indigenous people
- regular Indigenous health and social surveys.

Statistics on Indigenous housing have also improved. The ABS, supported by ATSIC, conducted the Community Housing and Infrastructure Needs Surveys in 1999 and 2001, which described housing stock and its condition. The AIHW has been working with States and Territories under the National Indigenous Housing Information Agreement to collect data on Indigenous residents of public housing and of residents of Indigenous-specific housing.

Although the years since 1990 have been very different from earlier years for Aboriginal and Torres Strait Islander statistics, but progress in collecting and publishing Indigenous statistics still poses a range of old and new analytical and conceptual issues. Let us now turn to some of these.

## **Employment statistics**

Around 1994 the ABS introduced an identifier into their Labour Force Survey, and questions about employment are also included in the census schedule. ABS data records Indigenous people working on Community Development Employment Projects (CDEP) as “employed”. While this seems to be a correct classification, given the nature of the activity, it is interesting that people employed on Work for the Dole are not classed as “employed”.

One consequence of this classification is that it suggests that employment opportunities exist for Indigenous people who live in rural and remote areas, when they do not. It can be taken further to suggest that the considerable proportions of Indigenous people who are recorded as “unemployed” are not taking advantage of these fictional employment opportunities.

This situation demands better analysis and additional reporting and for the differences between CDEP and Work for the Dole to be clarified. Figure 1 shows the labour force status in the census for Indigenous people. The CDEP workers are a reasonably significant proportion of the “employed” population, so it is not an insignificant issue. The question also arises as to whether people, who are doing cultural activities that actually have a market value, such as painting, regard themselves as “employed” and are recorded as such by the census? A number of issues around the collection and analysis of statistical data on participation in the economy needs much more thought.

## **Usual residence and the population count**

The second issue involves how the Indigenous population is located. The ABS estimates that 6.5 per cent of Aboriginal and Torres Strait Islander people were not counted in the most recent census (ABS 2003), compared with 2.2 per cent of non-Aboriginal and Torres Strait Islander people. So the official estimate is that there is a large undercount. We have no grounds on which to disagree, but we wonder how the concept of “usual residence” when asked of Indigenous people, influences this situation. If an Indigenous person is living in Brisbane but they come from Palm Island and you ask them in Brisbane where they usually live, are they going to record their residence as Brisbane or Palm Island? If they are not in Brisbane at the time of the census, but somewhere else other than Palm Island, are they going to say their usual residence is in Brisbane, or Palm Island? Where do they regard themselves as actually living? How do these things then get reported, and how do they relate to other counts of the population? The ABS is spending a lot of effort trying to understand these issues, but there is still a long way to go.

## **Problems in Indigenous identification**

A more pervasive problem than the recording of employment or the usual residence is the way in which the Indigenous population is identified in census and other data collections. For example, between the 1991 and 1996 censuses, the Indigenous population in Australia increased by 33 percent, well beyond any possible demographic

explanations (Ross 1996). This pattern of wild swings in Indigenous numbers has characterized Australian censuses for many years.

Ross (1996, 1) believes these otherwise inexplicable changes are the outcome of the ethnic identification that people assume from one census to another. Ross notes that this phenomenon has been also observed in the USA and New Zealand. It occurs where large numbers of people have multiple ancestries and ethnicities and they choose to identify as one ethnicity in one census and as another in another census. She suggests that ethnicity is a “social construction”. The use of a “social construction” which can vary from time to time, to define of a group people in Australia has implications for the calculation of population estimates and projections, as well as many different types of rates where the total population is used as the denominator.

Why do Indigenous Australians change their identification from time to time? One explanation is that they have been able to choose their ethnic identification only since 1967. Before that their status was defined by legislation and administrative practice. Furthermore, Indigenous people are not alone in having difficulty in deciding who they are. Ross (1996, 2) quotes a study that showed that 700 odd pieces of Australian legalization contain more than 67 definitions of what it is to be an Australian Aboriginal.

An illustration of the racially based definitional knots that Australian administrations got themselves into is the status of Torres Strait Islanders. Although clearly Indigenous to Australia, Torres Strait Islanders are not separately mentioned or defined in the Constitution. Before 1947 they were defined as Aborigines and excluded from census counts. In 1947 they were defined as “Polynesians” and included while in 1954 and 1960 they were defined as “Pacific Islanders” and counted. In 1966 they were again defined as “Aborigines” and excluded.

The 1967 referendum removed the words “aboriginal person” from the Constitution. But the problem of defining who is “Indigenous” did not go away; in fact it became more difficult. A significant event in the identification of Indigenous people in Australia is the Tasmanian Dams High Court decision, which ruled that many people, who could not meet the 50 percent “blood” rule, were Aborigines under the definition contained in the Constitution. This broadening of the definition of who was Aboriginal included many more people that the 50 percent “blood” rule had allowed to be included.

As well as being consistently under-enumerated, before 1967 many Aboriginal and non-Aboriginal people saw being defined as Aboriginal as a disadvantage and hid their Indigenous ancestry (Ross 1996, 6). Only as the open racism that characterised parts of Australian society became unacceptable and was legislated against did Indigenous people gained pride from their ethnic origins and increasingly began to identify as Indigenous. Nor should we be surprised that people will identify as Aborigine if they see an advantage to doing so and not identify when they see disadvantages. So an Aboriginal family may identify at a health clinic specifically established to serve Aboriginal people, but not identify at a childcare service open to everyone, where they fear they may be discriminated against.



Ross concluded that about half of the increase in the Aboriginal population between 1991 and 1996 was explained by demographic factors, births deaths and migration and by census editing. Natural increase was the most important explanation in WA and NT, and migration was most important in Qld and the ACT. Where fertility was highest, closure errors were lowest. But three other errors which were not easily measurable and which had considerable influence on outcomes were undercounting, non-response to the ethnicity question and changes of Indigenous identification.

Under counts of the total population have decreased in Australian censuses since 1986, from 1.9 percent to 1.6 percent, but the estimated undercount of Indigenous people remains high at over 7 percent (ABS 1997b in Ross). Under counting is greatest in NT. In the 2001 census the undercount of Indigenous people was estimated to be 6.1% (ABS 2003).

Considerable numbers of people of all races and ethnic origins do not respond to the question in the Census on Indigenous status. In the 2001 Census, the Indigenous status was unknown for 767,800 census records—4.1% of total census records and almost twice the 410,000 people who did identify as Aboriginal or Torres Strait Islanders. The Indigenous status was unknown as a result of two factors: non response to the Indigenous status question and imputation of census system generated records (records created for people identified by field staff before the census but for whom census records were not obtained. How many of the non-respondents are Indigenous people is not known.

People who do respond to the question on Indigenous status may change the way in which they answer from census to census. The ABS (1997b) found that 16 percent of people, who answered the question in the 1996 census, had changed their response by the time of the post-enumeration sample survey around 12 months after the census. Ross (1996, 54) found that the increase in Indigenous population between 1991 and 1996 might have been partly the result of ABS attempts to promote identification among Indigenous populations before the census. But that the “primary force” behind the increase was other changes in society at large. The largest increases in Indigenous populations occurred in southeastern Australia where there is a larger pool of people with mixed ancestry who can legitimately change from one identity to the other. In the USA changes of Indigenous identification have been associated with federal policies on self determination, ethnic politics expressed in the civil rights movement and pride in Indian ethnicity brought about by Native American activism. Ross suggests it is likely that the increases between 1991 and 1996 were the result of changes in attitudes towards being Indigenous by the non-Indigenous population and by Indigenous peoples themselves. Ross believes the trend for greater numbers of people to identify will increase.

Between 1996 and 2001 census, the Indigenous population increased by 16%— 12% of this increase can be explained by natural increase and the remaining 4% is attributed to changes in identify.

### **Does Indigenous identity matter?**

The disadvantages suffered by Australia's Indigenous population are well established and do not need to be revisited here. Attempts to reverse this situation depend on good statistics on Indigenous health and welfare that are believable and beyond criticism. In this section we present some of the consequences of attempts to use the present data to assess the health and well being of Indigenous people.

In addition to the problems described above in relation to the population data needed to estimate Indigenous mortality, problems also exist in the death registration data. Thus while all deaths in Australia are registered, Indigenous status is not always recorded on the death notification form and therefore the proportion of deaths which are Indigenous is not known accurately. The extent to which identification of Indigenous people occur in the mortality data collections is known as the 'completeness of Indigenous deaths'. It is therefore said that death data for Indigenous people is 'incomplete'.

The first constraint on these data is that the Indigenous identity of those who died was not collected for all of Australia until 1996, when Queensland joined the rest of Australia. However, despite the present use of a common question in all jurisdictions, there are large differences in the completeness with which deaths are recorded as indigenous. These become apparent whenever an attempt is made to use mortality data to investigate trends in Indigenous health.

Figure 2 shows the numbers of registered Indigenous deaths over the last 11 years in all jurisdictions except the ACT. South Australia, Western Australia and the Northern Territory started to produce reasonably reliable data in the early 90s. While Queensland introduced the Indigenous identifier in the mortality data only in 1996, the quality of the data was judged to be good relatively quickly. Marked improvements in Indigenous identification were also evident in New South Wales since 1998 (Figure 1). However, in spite of the very large Indigenous population in New South Wales, certainly larger than in Queensland, the number of deaths reported is still lower than in Queensland, which raises serious questions about the New South Wales data.

### **Median age at death**

The ABS has used median age at death in an attempt to assess whether health of Indigenous people is improving (ABS 2002). This was done in an attempt to avoid the problems of calculating a mortality rate with a denominator (the total Indigenous population by age) that is changing from census to census partly because of changes in Indigenous identification. However, even a simple analysis of these data demonstrates that it has problems.

Table 1 shows the median age at death of Indigenous males from all jurisdictions. As stated earlier, South Australia, Western Australia and the Northern Territory started to produce more complete data since the early 1990s. The statistics published for New South Wales and Victoria for median age at death began in 1998 where the completeness of identification is still highly questionable. For example, Table 1 suggests the median age at death in NSW is rising rapidly such that in three years it has grown by six years. It is most unlikely that this reflects a real improvement in the health of Indigenous people in NSW.

Table 2 presents the median age at death for females for the same jurisdictions for the same period. In New South Wales median age at death is unstable from year to year and would appear to contradict the data for males. Does this mean only men's health has improved in NSW?

The point of presenting these tables is to demonstrate that the way in which the data behaves should tell us there is something wrong with the data itself and that should cause us to question it and not to present it as though it is accurate.

But there are more fundamental problems. The right hand column in both tables presents the median age at death for Australia. However for the first five years there is data from only three jurisdictions. In the next two years it is from four jurisdictions. In the next four years it is from six jurisdictions. But the table has no indications that this is not a single series.

Like the NSW data discussed above, the Australian median age at death figures are also unstable from year to year and the data for males and females is dissimilar. With the much larger Indigenous population in New South Wales, this State alone is driving the apparent improvement in the overall Australian median age at death figure. But we have shown that the New South Wales figures are almost certainly unreliable. The apparent trends in these data are coming from the anomalies in the data set than from any actual change in age at death. Furthermore they are coming largely from the anomalies in the largest jurisdiction, where the data is known to be unreliable. And as well there are the fundamental flaws of the breaks in the series.

The Australian series should not be published at all; the data are meaningless and we should be basing our estimates on South Australia, Western Australia and the Northern Territory, supplemented now by Queensland. The New South Wales' numbers should be put in the area requiring further study, until they settle down.

Another view of these data that further illustrates the problems being referred to is presented in Figures 3a–3c. These are graphs of the changes from year to year in median age at death for males and females in those three jurisdictions with nominally good data, Western Australian, South Australian and Northern Territory. They show change from year to year and if there is no change from one year to the next, the value will be zero. It might be expected that some sort of order or a pattern of change would be discernible in these numbers. But the pattern is erratic and apparently random from year to year, apart from a very short period in Western Australia that is also possibly the outcome of chance.

A recent study of the relationship between median age at death and mortality rates argues that median age at death is not a stable measure of improvements in Indigenous health status of a population over time (Coory and Baade 2003). This study used a simulation that suggested that in populations with the same mortality rates but with different age structures: median age at death can differ by up to 20 years; a two year increase in median age at death in the Indigenous population would need a 30% decrease in mortality rates, but the same decrease in median age at death would be

achieved by a 15% decrease in mortality rates in the non-Indigenous population; and in order for median age at death changes to be statistically significant requires large sample populations. These are important findings. But our point is that at present the quality of the data makes the debate pointless. No sense can be made of the data in Tables 1 and 2. The first priority must be to improve the quality of the data, before trying to draw conclusions from it. Coory and Baade (2003, 631) agree and conclude that median age at death should only be used when “no other information is available”.

### **Can under identification in mortality data be estimated?**

Table 3 shows the total number of registered deaths in Australia for 2001 by Indigenous status. In 2001, there was a total of 128,544 registered deaths in Australia. Of these 2,063 or 1.6% were identified as Indigenous deaths. However, for an additional 5,731 or 4.5%, the Indigenous status was not known. It has been the practice so far to assume that all of these deaths are non-Indigenous—an assumption that is clearly flawed. If these ‘not stated’ deaths are assumed to occur in the same proportion as the Indigenous population distribution in the different jurisdiction, 80 additional Indigenous deaths are predicted for the whole of Australia. Therefore the total number of deaths for 2001 would increase from 2,063 to 2142 deaths using this method. But again this method has its limitation. The distribution of deaths can not be assumed to follow that of the population for obvious reasons. So the number of these 5,731 ‘not stated’ deaths which are Indigenous remains unknown.

However, the ABS attempts to estimate the completeness of Indigenous deaths by comparing the number of registered deaths with an expected number of deaths derived from a life table using the Preston and Hill demographic method. This method used population counted from two censuses and the deaths registered during the intercensal period to derive adjustment or “completeness factors”. These factors are then used to adjust the registered deaths so they become more complete and these are then used to construct a life table. Table 4 shows the expected deaths when the Preston and Hill method is applied to the 1991 and 1996 censuses. Only in the Northern territory do the ratios of expected deaths to registered deaths approach 100%. In South Australia and Queensland the registered deaths are between 50% and 60% of the expected deaths and everywhere else they are below 50%. This approach suggests that in New South Wales, Victoria and Tasmania, considerably more than half of the Indigenous deaths are not registered as deaths of Indigenous people.

If the ratios of registered deaths to predicted deaths are applied to the 2001 registered Indigenous deaths in Table 3 (2,063/0.55), an additional 1,688 Indigenous deaths are predicted for 2001. This is 21 times the number of additional (80) Indigenous deaths predicted by the data in Table 3. However, this is only one method of many that can be used to estimate completeness of death data and some of the assumptions of the method were not met. Other statistical and indirect estimation demographic techniques need to be explored before we can state with some confidence the extent of under identification in death data in Australia.

### **The way forward**

What are some possible solutions to these problems?

Whatever solutions are suggested to the problem of Indigenous identification, the overall quality of the data collected must be improved. Data quality is best where Indigenous populations are proportionately highest, in the Northern Territory, Western Australia, Queensland and South Australia. But it remains unacceptably poor in New South Wales and Victoria and Tasmania. An awareness raising exercise might assist people who collect data at point of service to understand why data that contains an Indigenous identifier is important.

In the meantime, another way forward is to increase cooperation and collaboration between all parties concerned with these problems; statisticians, bureaucrats and Indigenous groups.

Two recent examples of collaboration and cooperation follow. The first concerns the serious gap in knowledge on social and emotional wellbeing and mental health in the Indigenous population. Before the 2001 ABS Indigenous Health Survey, consensus among Indigenous people was that there was not any reasonable way of enquiring about this matter and the ABS, quite rightly, did not include it in the 2001 survey. For the 2004 survey the AIHW, ABS, the states and territories and Indigenous organisations have collaborated to find an acceptable way of investigating this matter.

The AIHW organised a workshop in Canberra where consensus was reached on questions on social and emotional wellbeing that could be included in the 2004 Indigenous Health Survey that would give a balanced view covering negative and positive aspects. The workshop showed that progress can be made when there is cooperation and consultation. Resources and commitment are required. But individuals and organizations across all jurisdictions are thinking deeply about particular issues or have worked on them within their own jurisdictions. In the case of social and emotional wellbeing, two jurisdictions had carried out outstanding work on validating survey questions that will reliably identify depression or mental illness in Indigenous people. Their work has enabled a component on mental health and social wellbeing to be expanded to the national level in the 2004 survey.

The second way forward is not to try and draw conclusions from obviously flawed data. When data series like the median age at death are clearly unstable, it must be accepted that they cannot be used. It is sensible to systematically explore the use of indirect methods, such as the AIHW and the ABS are presently doing. But care must be taken that the assumptions of the models are not ignored. Indirect estimation methods must also be conducted in association with statistical methods that allow confidence limits to be stated for the predictions.

Many unknowns remain. Very little is known about the relative health of rural Indigenous and urban indigenous people. It is often heard that urban people have better mortality outcomes than rural people. The reality is, probably, that Indigenous identification in urban areas is much worse than it is in rural areas, particularly in the eastern states, so no conclusions can be drawn. The analysis has not been done.

Finally, we would like to conclude with a suggestion. The Community Housing and Infrastructure Needs Survey, (CHINS) provides an example of the way in which data can be collected from Aboriginal communities. CHINS collects data not by going door to door in the communities, but by talking to the leaders of the communities, and asking them about the state of their housing. There should be a much more systematic collection of data on health and community services available in communities and the methodology of the CHIN survey on housing could be adapted to perform that task. ATSIC has funded the CHIN surveys over 1999 and 2001 and the Department of Health, Department of Family and Community services and Aboriginal and Torres Strait Islander Commission could cooperate to fund a survey that the ABS could carry out. That would provide a comprehensive picture of the services available in health and community services in Aboriginal communities. These services are funded and actually run by a large number of different organisations; Commonwealth, state, community and charitable, and there is no comprehensive picture of them or the services they are providing.

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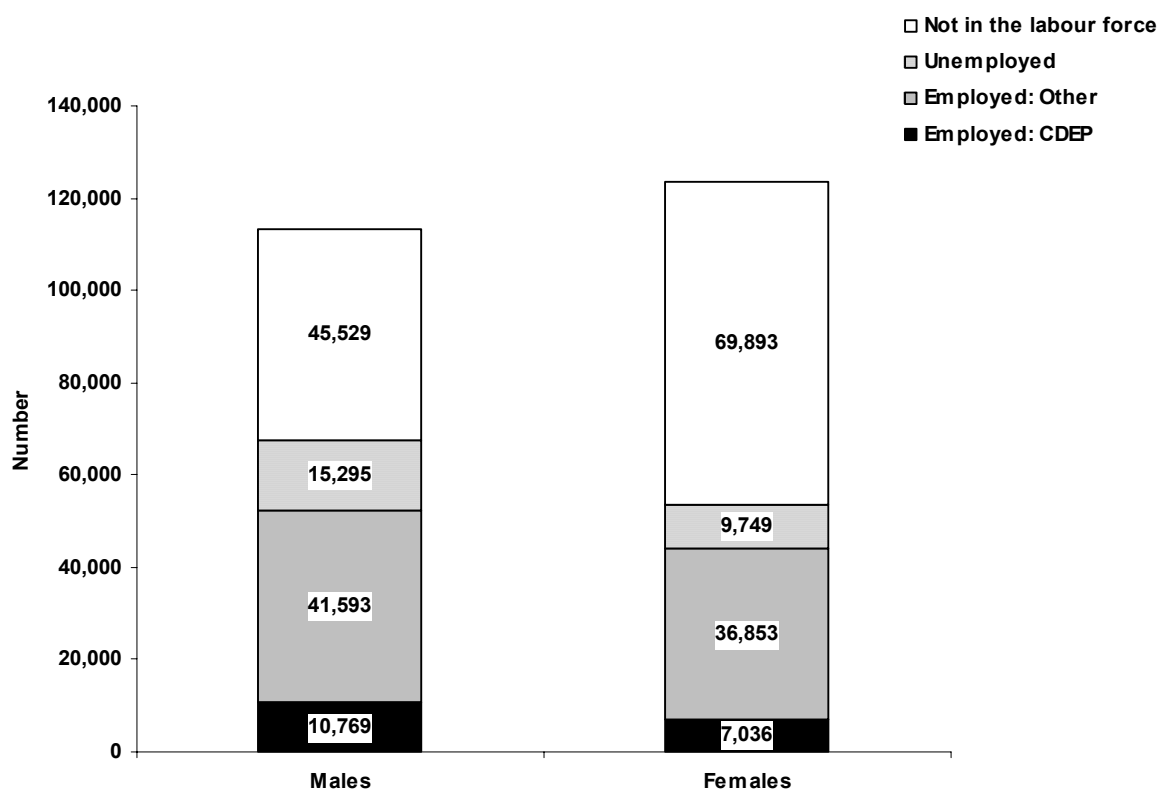
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Source: Census of population and Housing  
Figure 1: Labour force status of Aboriginal and Torres Strait Islander people, 2001

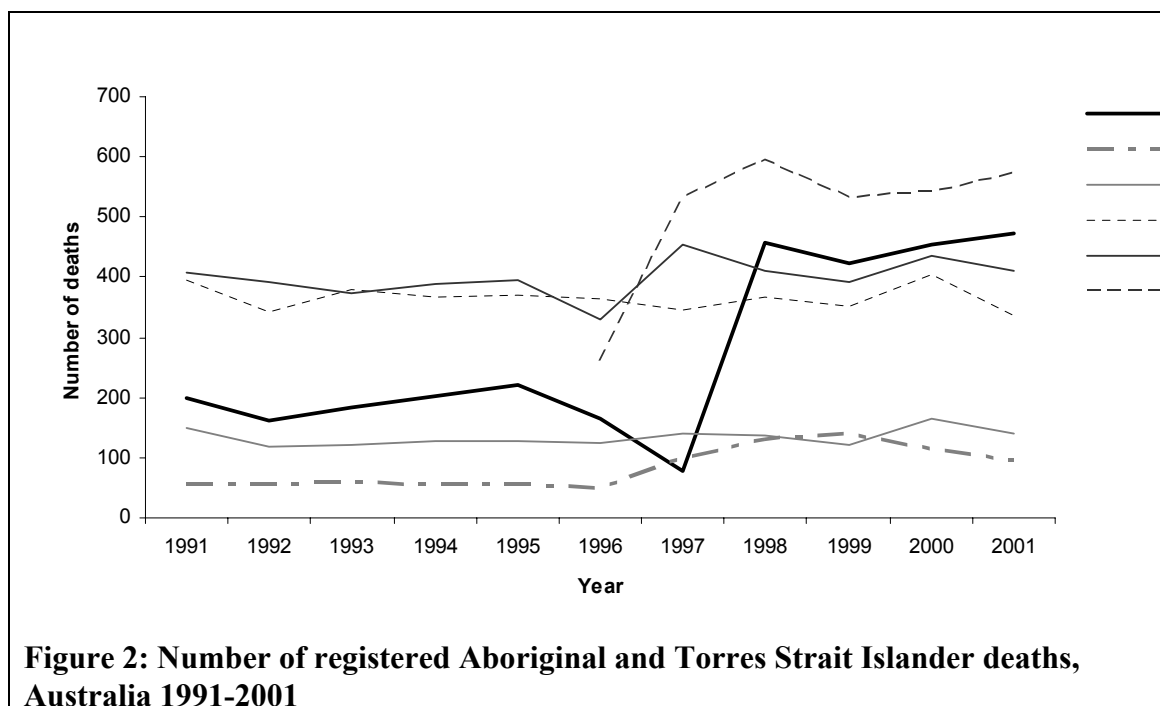
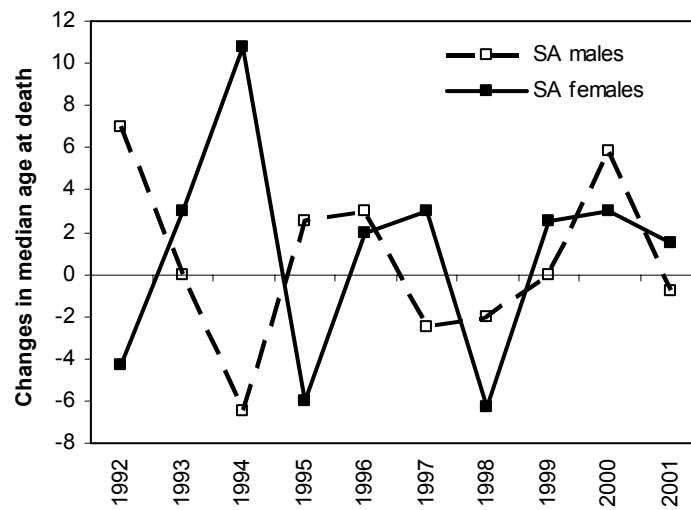
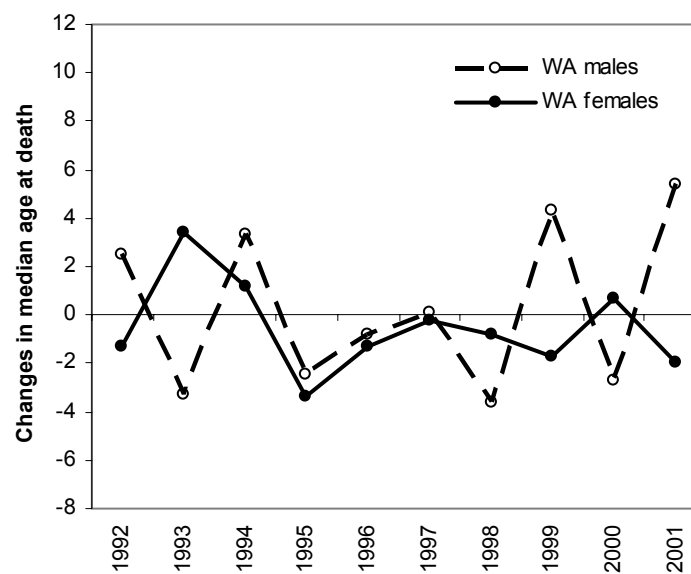


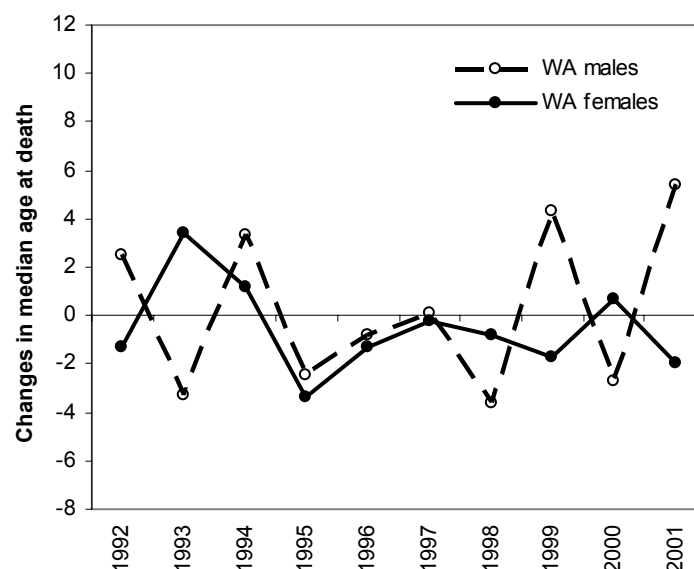
Figure 2: Number of registered Aboriginal and Torres Strait Islander deaths, Australia 1991-2001



**Figure 3a: Year to year fluctuation in median age at death in South Australia, 1991-2001**



**Figure 3b: Year to year fluctuation in median age at death in Western Australia, 1991-2001**



**Figure 3c: Year to year fluctuation in median age at death in Northern Territory, 1991-2001**

**Table 1: Median age at death(a)—Aboriginal and Torres Strait Islander males, 1991-2001**

Year	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust.(b)
1991	n.p.	n.p.	n.p.	41.8	49.3	n.p.	46.8	n.p.	46.2
1992	n.p.	n.p.	n.p.	37.5	51.8	n.p.	49.3	n.p.	49.7
1993	n.p.	n.p.	n.p.	40.5	48.5	n.p.	47.0	n.p.	47.7
1994	n.p.	n.p.	n.p.	51.3	51.8	n.p.	46.6	n.p.	48.3
1995	n.p.	n.p.	n.p.	45.3	49.3	n.p.	50.1	n.p.	48.6
1996	n.p.	n.p.	49.3	47.3	48.5	n.p.	47.0	n.p.	47.9
1997	n.p.	n.p.	50.6	50.3	48.6	n.p.	48.7	n.p.	49.8
1998	50.3	56.5	46.9	44.0	45.0	n.p.	45.5	n.p.	47.7
1999	51.3	51.0	48.9	46.5	49.3	n.p.	47.5	n.p.	48.9
2000	53.9	51.5	53.9	49.5	46.6	n.p.	46.2	n.p.	50.8
2001	56.3	53.0	52.5	51.0	52.0	n.p.	45.1	n.p.	52.0

(a) Median age at death does not adjust for the age structure of the population involved.

(b) Includes Other Territories.

n.p. not available for publication but included in totals where applicable.

Source: ABS Deaths (Cat. No. 3302.0)

**Table 2: Median age at death (a)— Aboriginal and Torres Strait Islander, 1991-2001**

Year	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust.(b)
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1991	n.p.	n.p.	n.p.	49.0	59.4	n.p.	52.8	n.p.	55.5
1992	n.p.	n.p.	n.p.	56.0	58.1	n.p.	55.6	n.p.	56.8
1993	n.p.	n.p.	n.p.	56.0	61.5	n.p.	52.0	n.p.	57.4
1994	n.p.	n.p.	n.p.	49.5	62.7	n.p.	60.2	n.p.	59.7
1995	n.p.	n.p.	n.p.	52.0	59.3	n.p.	56.6	n.p.	57.6
1996	n.p.	n.p.	59.0	55.0	58.0	n.p.	54.0	n.p.	57.7
1997	n.p.	n.p.	57.7	52.5	57.8	n.p.	52.3	n.p.	56.8
1998	58.0	63.3	59.3	50.5	57.0	n.p.	49.7	n.p.	57.0
1999	60.8	65.0	60.3	50.5	55.3	n.p.	56.3	n.p.	58.8
2000	59.4	55.5	61.3	56.3	56.0	n.p.	54.0	n.p.	57.4
2001	62.9	63.8	54.1	55.5	54.0	n.p.	52.8	n.p.	57.6

(a) Median age at death does not adjust for the age structure of the population involved.

(b) Includes Other Territories.

n.p. not available for publication but included in totals where applicable.

Source: ABS Deaths (Cat. No. 3302.0)

**Table 3: Registered and estimated additional Indigenous deaths, if deaths lacking Indigenous identification are assumed to be proportional to the Indigenous population in each jurisdiction, 2001.**

Registered deaths					Indigenous population			
	Non-Indigenous	Indigenous	Not Stated	Total	Proportion not stated within each State/Territory (%)	as a proportion of the total population	Addition al deaths	Total deaths including estimated not-stated deaths
NSW	42,598	481	1,473	44,552	3.31	2.1	31	512
Vic	28,893	93	33,09	32,295	10.25	0.6	20	113
Qld	22,003	565	2,88	22,856	1.26	3.5	10	575
SA	11,444	125	322	11,891	2.71	1.7	5	130
WA	10,265	336	178	10,779	1.65	3.5	6	342
Tas	3,693	32	151	3876	3.90	3.7	6	38
NT	436	429	7	872	0.80	28.8	2	431
ACT	1,414	2	3	1419	0.21	1.2	<1	1
<b>Australi</b>	<b>120,750</b>	<b>2,063</b>	<b>5,731</b>	<b>128,544</b>	<b>4.46</b>		<b>80</b>	<b>2,142</b>

**a**

Source: ABS deaths 2001

**Table 4: Registered and estimated completeness of identification of Indigenous people in death registration data based on the 1996 Census, by jurisdiction and year of registration.**

	Registered deaths			Proportion of completeness by jurisdiction (%)		
	1999	2000	2001	1999	2000	2001
<b>New South Wales</b>	435	473	481	43	46	45
<b>Victoria</b>	130	108	93	59	48	41
<b>Queensland</b>	529	535	565	55	54	56
<b>South Australia</b>	116	144	125	57	69	59
<b>Western Australia</b>	350	407	336	68	77	62
<b>Tasmania</b>	11	8	32	8	6	22
<b>Northern Territory</b>	399	450	429	83	92	85
<b>Australian Capital Territory</b>	6	n.p	n.p	27	n.p	n.p
		<b>2,12</b>				
<b>Australia</b>	<b>1,976</b>	<b>7</b>	<b>2,063</b>	<b>56</b>	<b>59</b>	<b>55</b>

Source: ABS and AIHW, 2003.