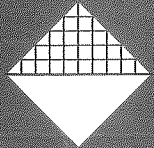


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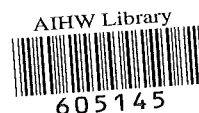


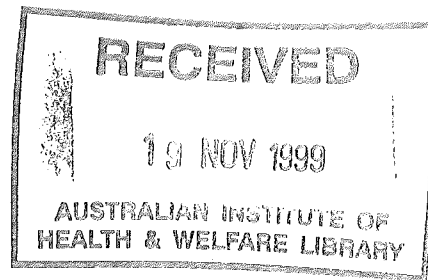
AIHW

Assessing the Quality of Identification of Aboriginal and Torres Strait Islander People in Hospital Data

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A412

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Assessing the Quality of Identification of Aboriginal and Torres Strait Islander People in Hospital Data

Barbara Gray

A PROJECT FUNDED BY THE AUSTRALIAN HEALTH MINISTERS' ADVISORY COUNCIL AND COORDINATED BY THE ABORIGINAL AND TORRES STRAIT ISLANDER HEALTH AND WELFARE INFORMATION UNIT, A JOINT PROGRAM OF THE AUSTRALIAN BUREAU OF STATISTICS AND THE AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE

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The Australian Institute of Health and Welfare.

INQUIRIES

- For further information please ring the National Centre for Aboriginal and Torres Strait Islander Statistics on 1800 633 216.

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FORWARD

The health of Aboriginal and Torres Strait Islander peoples in Australia is well known to be substantially worse than that of other Australians. It is well accepted that this situation is one result of the complex array of social and economic disadvantages under which Aboriginal and Torres Strait Islander people live in Australia. Australian health ministers and agencies have acted in numerous ways to provide an adequate response to these great health needs, both through increased availability of services and by ensuring that services are appropriate for the real needs and desires of Aboriginal and Torres Strait Islander people.

Measuring Indigenous health accurately, and the use of services by Aboriginal and Torres Strait Islander people, is essential if services are to be well planned and resourced, and for these services to be accountable to their funders (governments) and their users (Aboriginal and Torres Strait Islander people). Regrettably, reliable information has been scarce, but in recent years there has been a concentrated effort to improve the situation. The Australian Health Ministers' Advisory Council (AHMAC) in 1997 endorsed *The Aboriginal and Torres Strait Islander Health Information Plan....this time, let's make it happen*.

A key recommendation in the Plan is for improved identification of Aboriginal and Torres Strait Islander people across the health spectrum. A big step to achieve this has been to assess the quality of identification at present, and to propose ways that this can be improved. The Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU), a collaboration between the Australian Bureau of Statistics and the Australian Institute of Health and Welfare, with AHMAC financial support, has undertaken this study across a sample of hospitals in various parts of Australia. Many thanks to all those involved in the many government agencies, the hospitals, and particularly to the patients who gave their time to assist in the survey.

The results show widely varying levels of Indigenous identification. The analysis, and subsequent discussions with staff in the participating hospitals, provide invaluable advice on how to improve Indigenous identification in the future.

I want to mention especially the efforts and skills of the principal investigator, Barbara Gray. Under the leadership of the ATSIHWIU Director, Tony Barnes, she has produced an excellent piece of work. AIHW and ABS are indebted to you.

All States and Territories have committed themselves to a sustained effort to improve their identification practices during 1999 and 2000. ATSIHWIU will be evaluating performance in 2001, and in the meantime examining and testing some different ways to ask about Indigenous status.

I would like to thank Tony Barnes and his team for an excellent 1999 report and we look forward to better data in 2001.

Richard Madden
Director, Australian Institute of Health and Welfare
May 1999

LIST OF ABBREVIATIONS

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Ministers' Advisory Council
AHLO	Aboriginal Hospital Liaison Officer
AIHW	Australian Institute of Health and Welfare
ATSIC	Aboriginal and Torres Strait Islander Commission
ATSIHIP	Aboriginal and Torres Strait Islander Health Information Plan (also known as NIHIP or the Plan)
ATSIHWIU	Aboriginal and Torres Strait Islander Health and Welfare Information Unit
HRN	Hospital record number
URN	Unit record number

ACKNOWLEDGMENTS

The project involved a high degree of cooperation, commitment and goodwill on the part of the participating jurisdictions and hospitals. Although resources were provided to assist hospitals with participating, the work of coordinating the project, managing the patient interviews and analysing results was additional to normal staff duties. The commitment of all staff involved in the project is acknowledged.

The Aboriginal and Torres Strait Islander Health and Welfare Information Unit would like to thank the following health departments and hospitals:

Health Commission of South Australia
Royal Adelaide Hospital
Women's and Children's Hospital
North Western Adelaide Health Service (Queen Elizabeth Hospital Campus)
Port Augusta District Hospital
Coober Pedy Hospital
Territory Health Services
Royal Darwin Hospital
Alice Springs Hospital
Gove District Hospital
Health and Community Services, ACT
The Canberra Hospital
Calvary Hospital
Department of Health and Community Services, Victoria
St Vincent's Hospital, Melbourne
Queensland Health
Toowoomba Hospital

SUMMARY

The Australian Health Ministers' Advisory Council (AHMAC) provided funding for this project to develop, pilot and evaluate a methodology for assessing the completeness of the identification of Aboriginal and Torres Strait Islander people in hospital separation data. The project was managed and coordinated by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU), a joint program of the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW).

Deriving estimates of the completeness with which Aboriginal and/or Torres Strait Islander people are identified in hospital separation data is a specific recommendation of *The Aboriginal and Torres Strait Islander Health Information Plan.....this time let's make it happen* (ATSIHWIU 1997) endorsed by AHMAC in October 1997. This information is essential for adjusting Aboriginal and Torres Strait Islander hospitalisation statistics to remove biases due to the incorrect recording of Indigenous status.

The pilot project compared the results of interviews with hospital patients with information obtained from hospital records. The project also explored the quality of a broad range of demographic data collected by hospitals. These additional data, provide a comparative base for assessing the accuracy with which Indigenous status is recorded and enabled the investigation of how this variable is influenced by demographic factors. The pilot project demonstrated that it was possible to assess data quality by using a simple set of procedures. The procedures used in the project produced valuable results and did not require excessive resources.

The accuracy with which Aboriginal and/or Torres Strait Islander people were correctly recorded varied greatly from hospital to hospital, ranging from 55% accuracy to 100% accuracy. Other demographic data items were also inaccurately and incompletely recorded, however the recording of Indigenous status showed the greatest variation from hospital to hospital, with a lower level of accuracy than other data variables.

The proportion of people of Aboriginal and/or Torres Strait Islander origin living in a hospital's catchment area appeared to be a major factor influencing the accuracy of recording of Indigenous status. Hospitals in areas where a high proportion of the population are of Aboriginal and/or Torres Strait Islander origin demonstrated a greater accuracy in recording a patient's Indigenous status than in areas with a lower proportion of people of Aboriginal and/or Torres Strait Islander origin in the catchment population.

SUMMARY *continued*

Part 1 of this report outlines the development, conduct and results of this pilot project. Part 2, called, Operational Procedures for Assessing the Completeness of Identification of Aboriginal and Torres Strait Islander People in Hospital Separation Data, details steps that a hospital, group of hospitals or state/territory health department could follow to enable them to implement a data quality assessment exercise within their collection(s). Details on the estimation of a correction factor for the recording of Indigenous status in hospital separations data are also included, as are approaches to sample selection and a training package for interviewers who undertake the data collection.

BACKGROUND

Hospitals collect both clinical and administrative information concerning people who are admitted to hospital. A 'hospital separation' occurs when a patient is discharged, is transferred to another facility, episode of care type changes or dies. Hospital separation data include identifying characteristics such as the age, sex and Indigenous status of the patient as well as information concerning diagnosis, length of stay, procedures and operations performed. Individual people are not able to be identified because of the use of a unique hospital record numbers (HRN) or unit record numbers (URN) assigned to each patient. These numbers are removed before the data is passed on to the AIHW for analysis.

Hospital data are a potentially valuable source of information about the health status and health service utilisation of Aboriginal and Torres Strait Islander people. Hospital separation data can provide a basis for comparison of data across jurisdictions and regions, over time, and between Aboriginal and/or Torres Strait Islander people and non-Indigenous people. There is, however, insufficient information regarding the accuracy of the recording of Indigenous status and other demographic data in these collections. Several previous studies have indicated that current hospital separation data underestimate the number of Aboriginal and Torres Strait Islander people actually utilising hospitals.

The Aboriginal and Torres Strait Islander Health Information Plan...This time let's make it happen (ATSIHWIU 1997) endorsed by the Australian Health Ministers' Advisory Council (AHMAC) in October 1997 made 42 recommendations for the collection and maintenance of quality statistics on the health status of Aboriginal and/or Torres Strait Islander Australians. Several of these recommendations relate to hospital data.

The Health Information Plan recommends that all major health and related collections include accurate recording of Indigenous status. In relation to hospital separation data the Plan recommends:

'...all jurisdictions pilot a scheme for assessing the completeness of identification in hospital collections by December 1998 and that all jurisdictions should have undertaken sufficient assessment work to derive an estimate of completeness of hospitals separations data sets for the states by December 1999' (ATSIHWIU 1997 p 74).

The *Health Information Plan* also recommends:

'...that quality assessment work be undertaken on all collections on the premise that datasets which have not had the completeness of their Indigenous identification validated are unreliable as sources of statistics' (ATSIHWIU 1997 p 78).

To assist jurisdictions to meet these recommendations it was important that a simple set of procedures be developed to enable jurisdictions to implement a data quality assessment exercise to derive estimates of the completeness of their data.

The Australian Health Ministers' Advisory Council (AHMAC) provided funding for this project to develop, pilot and evaluate a methodology for assessing the accuracy of the recording of Indigenous status in hospital separation data. The project was managed and coordinated by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU), a joint program of the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW).

The project encompassed a broad based examination of the demographic data collected by hospitals to:

- provide a comparison for the accuracy of the recording of Indigenous status;
- enable some investigation of how these factors may influence the accuracy of the identification of Aboriginal and/or Torres Strait Islander people; and
- ensure that procedures developed have application in a broad and general context to enhance future prospects of the implementation of routine quality control procedures.

This report outlines the conduct and results of this pilot project.

OBJECTIVES

The primary objectives of the project were to:

- develop, pilot and evaluate a methodology for assessing the accuracy of the recording of Indigenous status and other basic demographic information in hospital separation data; and
- document the procedures involved in assessing accuracy in data collections to enable hospitals and/or health departments to assess the completeness of the recording of Indigenous status.

The secondary objectives of the project were to:

- provide indicative information about the accuracy of recording of Indigenous status in hospital separation data and describe some of the factors that influence it;
- provide indicative information about the accuracy of the recording of sex, date of birth, country of birth and usual residence information in hospital separation data; and

OBJECTIVES *continued*

- provide data for further analysis of the possible determinants of the completeness of Indigenous status in hospital separation data. This will be reported on in a subsequent report.

METHODOLOGY

This section describes the methodology utilised by the pilot project. Part 2 of this report, Operational Procedures for Assessing the Completeness of Identification of Aboriginal and Torres Strait Islander People in Hospital Separation Data, provides operational guidance to a hospital or health department wishing to implement a similar study.

The methodology for assessing the completeness of recording Indigenous status within hospital based records is based on a methodology employed by previous studies (Shannon et. al. 1997, Queensland Health 1997 and Condon et al. 1998) in which the information in the hospital patient record is compared with an independent source of the same information. Hospital patient records are derived from electronically held data sets and the independent source is a person-to-person interview between hospital patients and specially trained interviewers.

The methodology is based on the assumption that the information collected from the independent source of information, in this case the person-to-person interview, is correct. While it is generally believed that this method achieves 'gold standard' information some possible exceptions to this assumption are discussed below.

An issue regarding a patient's age was raised by one hospital, with a very high proportion of Aboriginal and/or Torres Strait Islander patients. Many of the patients at this hospital had been born there and staff felt that the hospital records listing the person's age were more likely to be correct than the information obtained by interviewing the person. Staff felt very strongly about this because particular care was taken to note ages correctly in the first instance (such as when the person was born) whereas knowledge of a person's age or date of birth is sometimes considered irrelevant or unimportant by Aboriginal and/or Torres Strait Islander people and when asked by interviewers some Aboriginal and/or Torres Strait Islander people may be unlikely to know the answer with a high degree of accuracy.

Another issue was raised by the Aboriginal Health Research Ethics Committee of South Australia which felt that a 'gold standard' was more likely to be achieved if Aboriginal and/or Torres Strait Islander interviewers were used. It was suggested that Aboriginal and/or Torres Strait Islander people may be more likely to identify as Aboriginal and/or Torres Strait Islander if asked about their status by an Aboriginal and/or Torres Strait Islander interviewer. In order to investigate the benefits of employing Aboriginal and/or Torres Strait Islander interviewers five hospitals designed their studies to include half of the interviews conducted by Aboriginal and/or Torres Strait Islander people and half by non-Indigenous people. While a half and half split was not achieved due to recruitment and retention difficulties, a reasonable proportion of the interviews were conducted by Aboriginal and/or Torres Strait Islander interviewers at four of the hospitals.

Selection of hospitals for participation in the project

In order to develop a methodology and procedures that were effective in a range of settings, hospitals were selected to cover a number of states and territories, a range of large and small hospitals and hospitals in which either a large or a small proportion of the population who lived in the catchment area were Aboriginal and/or Torres Strait Islander people.

It should be noted that hospitals were not selected for inclusion in this study in order to produce either national or jurisdiction wide estimates of the completeness of recording a person's Indigenous status.

The primary objective of the project was to develop and test procedures that could be implemented in a range of settings while the secondary objective involved providing some indicative information about the data quality.

The project design was developed to produce an estimate of completeness of recording for the individual hospital involved rather than jurisdiction wide estimates. If these estimates were required, hospitals would need to be selected to give a representative result for the state or territory in order to produce state/territory estimates of completeness. Guidelines to enable state/territory estimates to be produced are outlined in Part 2, Operational Procedures for Assessing the Completeness of Identification of Aboriginal and Torres Strait Islander People in Hospital Separation Data.

In addition to selecting hospitals with a range of different characteristics, hospitals were selected for inclusion in the project based on pragmatic considerations including the ease and timeliness of negotiations to participate in the study and the logistical and resource considerations of travelling to hospitals. Resource limitations of both time and money also precluded the possibility of including all jurisdictions in the pilot project. As a result of these considerations, hospitals from every state were not included in the pilot. The involvement of the Queensland hospital, for instance, occurred in conjunction with a project already being conducted by Queensland Health. The involvement of this hospital expanded the range of hospitals involved in the study.

Financial assistance was provided to hospitals to conduct the patient interviews. This was based (approximately) proportional to the number of interviews undertaken.

Project coordination ATSIHWIU's role involved the overall coordination of the project including:

- negotiating in-principle agreement to participate in the project from health departments and hospitals;
- organising and overseeing ethics considerations, submissions and conditions;
- liaison with hospitals to finalise details of operational considerations, such as in-scope considerations, time frames, sample size and selections, hospital staff involvement and recruitment of interviewers;
- development and trialing of the interviewer training package;
- pilot testing of interviewer training, instructions and questionnaire;
- delivery of training sessions for interviewers;
- troubleshooting as interviewing was carried out;
- advice concerning data entry, matching and analysis; and
- compilation and overall analysis of qualitative and quantitative results.

Sample selection and sample size within hospitals

All hospital patients who had been admitted and were in hospital on the day interviewers visited the hospital, were considered part of the sample. This included 'day only' patients, who were admitted to hospital but did not stay overnight. The exceptions to this were:

- those considered by the person in charge of the ward to be not well enough or not competent enough to give informed consent to be part of the study; and
- people in Intensive Care Units.

Informed consent was sought from all patients before the interview proceeded. Two hospitals required participants to sign a consent form prior to participation. Children and teenagers were considered eligible provided that parental or guardian consent was obtained.

Patients were selected to provide as complete and representative a sample of patients in the hospital subject to the above exclusions and:

- to get a balanced proportion of day only and longer stay admissions similar to that of the hospital overall i.e. stratify the complete sample based on these types of admissions;
- cover all wards and parts of the hospital, with the possible exception of areas where restrictions were necessary for medical reasons of patient care e.g. intensive care units.

Sample selection and
sample size within hospitals
continued

In practice this meant interviewers going to all wards and seeking to contact all suitable and available patients. If a patient had multiple admissions during the interview period, the intention was to only interview them once. There is a possibility that this may have introduced some biases, however, in terms of developing a practical methodology this was considered to be a minor consideration. The extent of possible biases in terms of multiple admissions or length of stay will be explored in a subsequent report.

Calculations of the desired sample sizes, or number of hospital interviews required, were based on formulae which depended on the following variables:

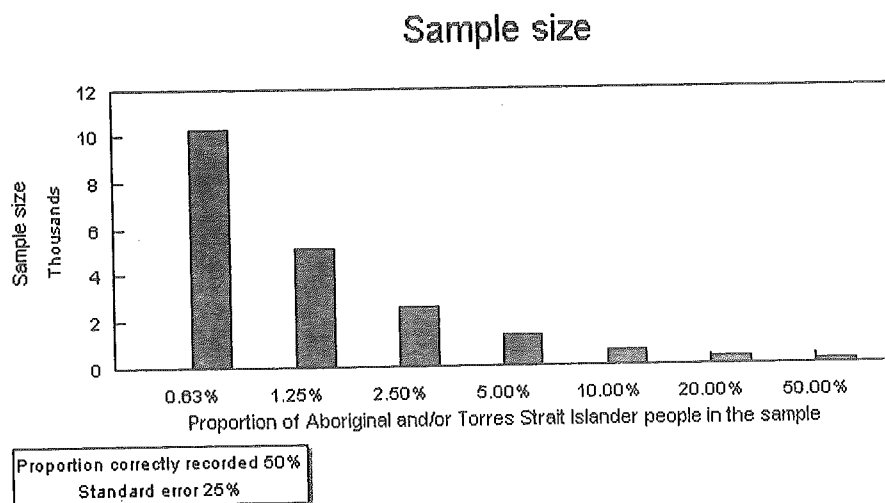
- the proportion of Aboriginal and/or Torres Strait Islander people that were currently correctly identified in the hospital records;
- the proportion of people among the hospital's patients who actually were Aboriginal and/or Torres Strait Islanders among the hospital's patients; and
- the standard error required when working out the proportion of Aboriginal and/or Torres Strait Islander people correctly recorded in hospitals records.

Details of the formula and calculations are contained in Appendix 1.1. While these variables interact in a complex manner to determine the sample size required, the proportion of Aboriginal and/or Torres Strait Islander patients in the hospital had the greatest influence on the sample size required. The smaller the proportion of Aboriginal and/or Torres Strait Islander people in the hospital the larger the sample size required in order to produce a meaningful assessment of data accuracy.

The following graph shows the required sample sizes for instances in which the proportions of hospital patients who were Aboriginal and/or Torres Strait Islander varied from very large to very small. The sample sizes were derived by requiring that the relative standard error of the percentage completeness should be 25%. This means that there is a 2 out of 3 chance that the result produced would be accurate to within 25%. If a ballpark estimate of accuracy is required a relative standard error of 25% can be acceptable. Sample sizes would have been unpractically high if a much greater degree of accuracy (i.e. lower standard error) was required. The example shown below is appropriate to a situation in which completeness of recording is approximately 50%, that is, that the hospital is recording approximately 50% of Aboriginal and/or Torres Strait Islander patients correctly and 50% incorrectly as either not stated or non-Indigenous. The degree of completeness can not be known prior to the study, but previous studies (Health and Community Services Vic. 1994, Shannon et. al. 1997 and Queensland Health 1997), indicated completeness of about this level.

Sample selection and sample size within hospitals
continued

Some modifications were made to the sample sizes required of hospitals to allow for practical considerations such as what could be achieved in the time available. This was in keeping with the primary objective of the study which was to develop and document appropriate procedures for data quality assessment exercises.



SAMPLE SIZES RECOMMENDED AND OBTAINED

Hospital	Proportion of Indigenous people in the catchment area	Desired sample size recommended	Sample size obtained
1	Low	1 500	1 518
2	Low	1 500	1 390
3	Low	1 500	1 462
4	Low	1 000	924
5	High(a)	350	290
6	High(a)	400	354
7	High(a)	250	250
8	Low	900	608
9	Low	500	395
10	Low	1 000	1 019
11	High(a)	100	56

(a) A high proportion is over 15 % approximately of the population in the catchment area.

Using interviewers to obtain an independent source of information

The methodology involves comparing hospital data held electronically with an independent source of the same information. A person-to-person interview method of collecting the independent source of the information was thought to be as close as possible to a 'gold standard'. It was felt that a person-to-person interview would be effective in achieving 'gold standard information' if interviewers had good interpersonal skills, had a good understanding of the importance of the information particularly in relation to Aboriginal and Torres Strait Islander health and if they used best practice methods of obtaining the information.

The data item recorded at interview

The Indigenous status question was, presented to patients within a short questionnaire containing a number of other data variables. While the initial reason for adopting this approach was operational effectiveness, it soon became apparent that the additional information recorded was useful in its own right and potentially a means of providing insight into the factors which might affect the quality of Indigenous status data.

During patient interviews, six items were recorded (see Appendix 1.2 for questionnaire). They were:

- hospital record number/ unit record number;
- sex;
- Indigenous status;
- country of birth;
- date of birth; and
- place of residence.

The hospital or unit record number was used for matching interview derived details with electronically held hospital record information. The other five items were collected in order to estimate data quality of other aspects of the hospital record information.

Indigenous status

People were asked the ABS standard question to determine their Indigenous status. This is also the standard question set out in the National Health Data Dictionary (National Health Data Committee):

Are you of Aboriginal or Torres Strait Islander origin?
For persons of both Aboriginal and Torres Strait Islander origin mark both 'Yes' boxes.

- No
- Yes, Aboriginal
- Yes, Torres Strait Islander

Responses to this question (derived from Census) are the basis on which ABS Aboriginal and/or Torres Strait Islander population estimates are constructed. As most health statistics rely on ABS population estimates for the calculation of rates, the above 'origin' question is considered an appropriate 'gold standard' with which to compare other methods of obtaining Indigenous status data.

It is recognised that not all hospitals asked the question in this form at the time of the study. In some instances changes to the question to comply with the ABS standard question occurred during the study period. In other instances, changes were or are planned in the near future.

The data item recorded at
interview *continued*

Place of residence

Place of residence is a key variable of interest in terms of geographic analysis of health information. During interview, people were asked 'Where do you usually live?' as a means of determining place of residence. Most hospitals ask for a patient's address and use this as a determinant of place of residence, whereas a person's usual address is the question used in the Census for deriving residence information.

Age, sex and country of birth

Like place of residence, age, sex and country of birth data were recorded at interview primarily to allow estimates of data quality of these items within the hospital record system to be assessed. Information on data quality for these items provides a useful comparison for the completeness of identification of Indigenous status. They also allow completeness of Indigenous status to be desegregated for sections of the population.

Data analysis

The data from the person-to-person interview was either manually or electronically matched using the hospital/unit record number with the existing hospital record. Analysis were conducted within each hospital or in association with the relevant State/Territory Health Department. Aggregated results from each hospital were forwarded to ABS which undertook further analysis and validation work.

PROJECT IMPLEMENTATION

The pilot project was a cooperative project involving both statistical information agencies as well as health departments and hospitals. The pilot project was coordinated by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU), a joint program of the ABS and the Australian Institute of Health and Welfare (AIHW).

Participating jurisdictions

Hospitals were selected in order to provide a range of states and territories, large and small hospitals, urban and regional hospital and hospitals with large and small proportions of Aboriginal and/or Torres Strait Islander people in their catchment areas. In 5 states/territories 12 hospitals were approached to participate in the project. These were:

South Australia:

- Royal Adelaide Hospital
- Women's and Children's Hospital
- North Western Adelaide Health Service (Queen Elizabeth Hospital Campus)
- Port Augusta Hospital
- Cooper Pedy Hospital

Northern Territory:

- Royal Darwin Hospital
- Alice Springs Hospital
- Gove District Hospital

ACT:

- The Canberra Hospital
- Calvary Hospital

Victoria:

- St Vincent's Hospital, Melbourne

Queensland:

- Toowoomba Hospital

Roles of cooperating agencies

ATSIHWIU:

- Consult with hospitals, health departments and AIHW and coordinate the overall project to ensure consistency of approach,
- Coordinate and facilitate the seeking of all the necessary approvals,
- Provide resources to hospitals to assist with data collection aspects in the project,
- Write up final results and documentation of methodology and procedures.

AIHW:

- Analysis and write-up of additional data quality questions in conjunction with ATSIHWIU, participating hospitals and health departments to be presented in a later report.
- Consideration of the overall project design by the AIHW Ethics Committee.

ATSIHWIU in consultation with participating jurisdictions:

- Design the questionnaire,
- Develop sample selection guidelines,
- Design interview instructions and deliver training for interviewers or interview supervisors,

Hospitals/Health departments:

- Consult with Aboriginal Hospital Liaison Officers (AHLO's).
- Determine the need for local ethics committee approval and obtain if necessary.
- Recruit and select interviewers.
- Interview patients, data entry and match data with hospital records.
- Document resources used.
- Provide ATSIHWIU with results of data matching for final analysis.
- Provide AIHW with data for further analysis.

All:

- make recommendations for future and on-going data quality assessment.

Overall coordination of the pilot project involved

- Development of draft project proposal.
- Consultation with key stakeholders on proposal.
- Contacting and consulting with jurisdictions and hospitals to ascertain which would participate in the project.
- Coordination of efforts to achieve ethics approval where necessary.
- Pilot testing of data collection.
- Development and delivery of interviewer training package.
- Overseeing of interviewing, data input and guidance to hospitals concerning analysis of their data.
- Documentation of procedures and analysis of combined results.

Considerable time was expended at the beginning of the project in contacting potential participants in the project, ensuring participants had a good understanding of the purpose and context of the project, establishing working relationships, and discussing and refining the methodology and the procedures to be adopted. Successful implementation depended largely on establishing good working relationships with a range of key stakeholders. Implementation of the patient interviews were staggered between hospitals, beginning at Royal Adelaide Hospital in June 1998 and finishing in November 1998 at Alice Springs Hospital.

RESULTS

Eleven out of the twelve hospitals successfully implemented the procedures outlined. The results from these hospitals provided sufficient information to enable them to make an assessment of the accuracy of recording a patients' Indigenous status among other demographic data variables.

The twelfth hospital did not proceed with the data quality assessment exercise. This hospital was very small with a low patient turnover. Interviewing would have been required over a long period to meet the required sample size for approximately an hour a week and this was felt to be too difficult to organise. In addition it was likely that the same a person who admitted the patient may well be the one undertaking the patient interview, and this was not seen as optimal. For these reasons the study did not proceed at this hospital.

The project results are presented in two parts, documentation of the operational procedures and basic results concerning the accuracy of recording each data item. The primary objective of the study was to develop and document procedures. The secondary objective was to provide indicative information concerning data quality. It is important to note that the results concerning the accuracy of recording should not be interpreted as national or jurisdictional wide comparable results.

The results collected in this study will be further analysed by AIHW and this will be the subject of a later report.

Operational procedures

Each hospital chose to use a range of different approaches to managing patient interviews. The time taken to achieve the required number of patient interviews ranged from a little over 1 week to almost 10 weeks of full-time interviewer effort. In elapsed time this ranged from 5 to 19 weeks. The table below indicates that the length of time taken was not simply a function of the number of interviews conducted. In some hospitals it was possible to achieve similar numbers of interviews in half to a third of the time used in other hospitals. Reports from those managing the interviewing within the hospitals indicated that this was generally a function of patient availability and suitability of patients to be approached and asked to be part of the study.

In some cases elapsed time was similar even though one hospital conducted many more interviews than another. In small hospitals with low patient turnover it was only possible for interviewers to work a few hours per week to avoid duplication of patients. On the other hand, in large hospitals with a high patient turnover, interviewers needed to work full-time to achieve the required number of interviews.

The high number of refusals found in hospital one is likely to account for the length of time taken to complete the required interviews at this hospital. The large number of refusals at this hospital may be partially explained by the fact that this hospital required patients to sign a consent form prior to participation in the study. Reports from interviewers at this hospital indicated that many patients found this overly officious and consequently refused to participate. These consequences were not reported at the other hospital that used a signed consent form prior to participation. It is not known whether Aboriginal and/or Torres Strait Islander patients were disproportionately represented in the group of patients who chose to participate in the study.

The proportion of patients unsuitable to be approached also varied greatly from hospital to hospital, although precise figures are not available for all hospitals. At one hospital the proportion was as high as 6%. The reason for this high number was attributed to characteristics of the hospital's patients. Hospitals with large numbers of patients from non-English speaking backgrounds or very old or sick patients, were likely to have high numbers of patients not suitable to be approached. Other reasons cited in some hospitals for patients not being approached for participation in the study included that they were 'too unwell', 'language difficulties', 'intellectually impaired', patients were 'infectious' or had already taken part in the study.

Operational procedures
continued

Patients who were not available at the time the interviewer visited the wards added to the time taken to carry out the study. Again, details were not available for all hospitals but at one hospital approximately 14% of patients were unavailable for interview. The main reasons cited for patients being unavailable or not on the ward included, they were asleep, having a procedure, at theatre, showering, with visitors or on the phone. Many of these patients would have been interviewed during subsequent visits made by the interviewer to the ward. Generally, it was felt that failure to be interviewed was not a major bias in the study.

OPERATIONAL PARAMETERS

Hospital	Refusals	Interviews with matched results	Number of interviewers	Elapsed time (weeks) interviewing	Equivalent full time weeks interviewing	Cost at \$18/hr nominal cost	Equivalent full time weeks spent on data analysis
1	342	1 518	3	9.0	9.8	6 174	1.6
2	15	1 390	5	7.0	6.9	4 347	0.7
3	38	1 462	3	8.5	3.9	2 457	2.7
4	32	924	6	8.5	6.3	3 969	1.3
5	10	289	5	8.0	1.8	1 134	1.4
6	1	355	1	6.0	1.1	693	2.0
7	3	259	4	5.0	1.4	882	0.3
8	16	609	2	4.0	8.0	5 040	2.0
9	30	395	1	19.0	4.3	2 709	0.3
10	5	1 019	2	9.0	2.6	1 638	0.8
11	not available	56	2	not available	not available	not available	1.4

Accuracy of recording of data items

A summary of results are presented below to demonstrate the mismatch between data recorded at interview and data extracted from hospital records. More in depth results from each hospital are included in Appendix 1.3. The table below shows the proportion of Aboriginal and/or Torres Strait Islander people and the proportion of non-Indigenous people who were correctly recorded. The proportion of people in both categories who were incorrectly recorded can also be derived from this table.

It should be noted that hospitals were not selected for inclusion in this study in order to produce either a national or jurisdiction wide estimate of completeness. The results therefore should not be used to estimate correction factors for the recording of Indigenous status in all Australian hospital data.

Overall the number of Aboriginal and/or Torres Strait Islander people recorded in hospital separation data is an underestimate of the number of Aboriginal and/or Torres Strait Islander people who are admitted as patients. The degree of completeness varied widely from hospital to hospital ranging from approximately 55-100% completeness.

For non-Indigenous people the completeness of the recording of their Indigenous status was consistently higher than for Aboriginal and/or Torres Strait Islander people. The recording of additional data items; age, sex, country of birth and usual residence also showed higher levels of completeness than did the recording of Indigenous status for Aboriginal and/or Torres Strait Islander people.

SUMMARY OF ALL DATA ITEMS

Hospital	Sample size no.	Indigenous people		Non-Indigenous people		All records in which sex is correctly recorded in hospital records	All records in which whether born in Australia is correctly recorded in hospital records	All records in which date of birth is correctly recorded in hospital records(b)	All records in which usual residence is correctly recorded in hospital records(c)
		people in interview no.	correctly recorded in hospital records(a) %	people in interview no.	correctly recorded in hospital records(a) %				
1	1 518	33	54.5	1 485	97.1	98.9	94.3	95.2	82.5
2	1 390	71	62.0	1 319	99.5	99.9	99.2	99.1	93.7
3	1 462	44	84.1	1 418	100.0	99.9	92.5	98.6	94.4
4	924	13	100.0	911	97.7	100.0	98.5	97.0	97.9
5	290	103	92.2	186	99.5	99.0	98.6	94.1	89.0
6	355	136	91.9	218	94.0	97.5	97.8	91.0	59.2
7	250	167	99.4	83	100.0	100.0	99.6	82.4	87.6
8	609	38	55.3	570	96.8	99.8	95.7	95.1	94.8
9	395	4	100.0	391	98.2	98.5	100.0	100.0	100.0
10	1 019	20	55.0	999	100.0	99.1	96.6	94.1	89.7
11	56	19	78.9	37	100.0	96.4	96.4	83.9	89.3

(a) Does not include 'Unknown'.

(b) Whether records which are estimates are included varies. See Appendix 1.3.

(c) Matching varied according to jurisdiction, e.g. postcode, SLA or community. See Appendix 1.3.

Results for hospitals were amalgamated and grouped according to the proportion of Aboriginal and/or Torres Strait Islander people living in the catchment area (see table below). The accurate recording of Indigenous status for Aboriginal and/or Torres Strait Islander people appeared to be higher in hospitals in which a higher proportion of Aboriginal and/or Torres Strait Islander people lived in the hospital's catchment area and was similar to the accuracy of recording of non-Indigenous people. On the other hand the accuracy of recording of Indigenous status for Aboriginal and/or Torres Strait Islander people appeared to be lower in hospitals located in areas in which a small proportion of Aboriginal and/or Torres Strait Islander people lived in the catchment area. Non-Indigenous people were found to be correctly recorded most of the time. It should be noted that this trend between high and low catchment populations became apparent once the data for hospitals was amalgamated and does not mean that all hospitals in areas reflecting high or low population proportion characteristics are likely to record Indigenous status based on this trend. Individual hospitals within areas with a low proportion of Aboriginal and/or Torres Strait Islander people in the catchment sometimes had excellent results in the recording of Indigenous status. This is discussed further in the next section.

RECORDING INDIGENOUS STATUS BY PROPORTION OF ABORIGINAL AND/OR TORRES STRAIT ISLANDER PEOPLE LIVING IN THE CATCHMENT AREA

<i>Hospitals</i>	<i>Indigenous people in interview</i>	<i>Indigenous people correctly recorded</i>	<i>Non-Indigenous people in interview</i>	<i>Non-Indigenous people correctly recorded</i>
	<i>no.</i>	<i>%</i>	<i>no.</i>	<i>%</i>
High proportion Indigenous people in the catchment area(a)	425	94.4	524	97.3
Low proportion of Indigenous people in the catchment area(b)	223	66.4	7 093	98.6

(a) Hospitals 5, 6,7,11. The proportion of Aboriginal and/or Torres Strait Islander people in the catchment areas for these hospitals is approximately 15% or over.
 (b) Hospitals 1,2,3,4,8,9,10.

The correct recording of the Indigenous status of Aboriginal and/or Torres Strait Islander people appears to be more common in hospitals outside the capital cities. The correct recording of non-Indigenous people does not vary much between these groups of hospitals. The difference in recording was also considered for large vs small hospitals, however this breakdown was almost identical to that of capital city and other areas.

RECORDING INDIGENOUS STATUS BY CAPITAL CITY VS OTHER AREAS

<i>Hospitals</i>	<i>Indigenous people in interview</i>	<i>Indigenous people correctly recorded</i>	<i>Non-Indigenous people in interview</i>	<i>Non-Indigenous people correctly recorded</i>
	<i>no.</i>	<i>%</i>	<i>no.</i>	<i>%</i>
Hospitals in capital cities(a)	321	78.5	6 741	98.7
Hospitals in other areas(b)	327	90.8	876	97.8

(a) Hospitals 1,2,3,4,6,9,10.
 (b) Hospitals 5,7,8,11.

The next section reports on the impact of other factors on the recording of Indigenous status. The results are presented in a way which shows:

- firstly the proportion of Aboriginal and/or Torres Strait Islander people who identified at interview as Aboriginal and/or Torres Strait Islander and were recorded as such in the hospital record; and
- secondly the proportion of non-Indigenous people who identified as non-Indigenous at interview and were recorded as such at interview.

These proportions were then calculated taking into consideration a number of factors that may have influenced the result i.e. whether or not the person conducting the interview was Aboriginal and/or Torres Strait Islander, and the sex and age of the patient. The results for hospitals have been amalgamated into results for hospitals in which a high proportion of people in the catchment area are Aboriginal and/or Torres Strait Islander and those in which a low proportion of people in the catchment area are Aboriginal and/or Torres Strait Islander.

Accuracy of recording of data items *continued*

Results show, that in hospitals in which a low proportion of the catchment area were Aboriginal and/or Torres Strait Islander, there was no difference in the proportion of people who identified as Aboriginal and/or Torres Strait Islander in the interview and were correctly recorded in the hospital record. That is, the Indigenous status of the interviewer did not appear to make a difference to how Aboriginal and/or Torres Strait Islander people identified at interview. The numbers from the hospitals in which a high proportion of the catchment area were Aboriginal and/or Torres Strait Islander were too small to draw any conclusions from.

RECORDING INDIGENOUS STATUS BY ABORIGINAL AND/OR TORRES STRAIT ISLANDER INTERVIEWER VS NON-INDIGENOUS INTERVIEWER

<i>Interviewer</i>	<i>Indigenous people in interview</i>		<i>Non-Indigenous people in interview</i>	
	<i>no.</i>	<i>%</i>	<i>no.</i>	<i>%</i>
<i>Hospitals with a high proportion of Aboriginal and/or Torres Strait Islander people in the catchment area(a)</i>				
Indigenous interviewer	92	93.5	156	99.4
Non-Indigenous interviewer	11	81.8	30	100.0
<i>Hospitals with a low proportion of Aboriginal and/or Torres Strait Islander people in the catchment area(a)</i>				
Indigenous interviewer	64	67.2	1 209	99.3
Non-Indigenous interviewer	84	66.7	3 013	98.6

(a) Hospital 5.
(b) Hospitals 1, 2, 3.

Completeness of recording of Indigenous status for Aboriginal and/or Torres Strait Islander people does not vary greatly according to a person's sex. In hospitals with a high proportion of Aboriginal and/or Torres Strait Islander people in the catchment area the accuracy of recording of both Aboriginal and/or Torres Strait Islander males and Aboriginal and/or Torres Strait Islander females was similarly high (about 93%). In hospitals with which a low proportion of Aboriginal and/or Torres Strait Islander people in the catchment area, both Aboriginal and/or Torres Strait Islander males and Aboriginal and/or Torres Strait Islander females were accurately recorded at the rate of 65% and 63% accuracy respectively.

RECORDING INDIGENOUS STATUS BY SEX

<i>Sex (as recorded at interview)</i>	<i>Indigenous people in interview</i>	<i>Indigenous people correctly recorded</i>	<i>Non-Indigenous people in interview</i>	<i>Non-Indigenous people correctly recorded</i>
	<i>no.</i>	<i>%</i>	<i>no.</i>	<i>%</i>
Hospitals with a high proportion in the catchment area(a)				
Males	169	95.9	244	98.0
Females	256	93.4	280	96.8
Hospitals with a low proportion in the catchment area(b)				
Males	101	65.3	2 925	99.0
Females	107	62.6	3 256	98.5

(a) Hospitals 5, 6,7,11. The proportion of Aboriginal and/or Torres Strait Islander people approximately 15% or over.
 (b) Hospitals 1,2,3,4,8,9,10. The proportion of Aboriginal and/or Torres Strait Islander people approximately less than 15%.

Completeness of recording of Indigenous status for Aboriginal and/or Torres Strait Islander people did not vary greatly according to a person's age. In hospitals with a high proportion of Aboriginal and/or Torres Strait Islander people living in the catchment area there was little variation in the accuracy of recording between age groups. Accuracy ranged from 93% and above. Hospitals with a low proportion of Aboriginal and/or Torres Strait Islander people living in the catchment area reflected little variation in the accuracy of recording between age groups, ranging from 57-64%. (Numbers in the 65+ group were too small to draw conclusions from).

RECORDING INDIGENOUS STATUS BY AGE GROUP

<i>Age group (as recorded at interview)</i>	<i>Indigenous people in interview</i>	<i>Indigenous people correctly recorded</i>	<i>Non-Indigenous people in interview</i>	<i>Non-Indigenous people correctly recorded</i>
	<i>no.</i>	<i>%</i>	<i>no.</i>	<i>%</i>
Hospitals with a high proportion in the catchment area(a)				
0-14 years	115	93.0	78	96.2
15-24 years	77	94.8	54	98.1
25-44 years	134	97.0	161	96.9
45-64 years	76	90.8	123	96.7
65+ years	24	100.0	109	99.1
Hospitals with a low proportion in the catchment area(b)				
0-14 years	72	56.9	1 230	99.3
15-24 years	33	54.5	411	98.8
25-44 years	69	65.2	1 081	98.5
45-64 years	22	63.6	1 180	98.1
65+ years	5	80.0	1 882	99.1

(a) Hospitals 5, 6,7,11. The proportion of Aboriginal and/or Torres Strait Islander people approximately 15% or over.
 (b) Hospitals 1,2,3,4,8,9,10. The proportion of Aboriginal and/or Torres Strait Islander people approximately less than 15%.

Note: Totals may not tally because results were not available for all categories from all hospitals.

DISCUSSION

The successful completion of the pilot project demonstrated that it was possible to assess data quality by using a simple set of procedures producing valuable results that did not require extensive resources.

While indicative information about the completeness of recording of Indigenous status in hospital separation data has been obtained, the results should not be used to estimate a correction factor in all Australian hospital data. The accuracy of recording Aboriginal and Torres Strait Islander peoples Indigenous status varied greatly from hospital to hospital ranging from 55% accuracy to 100% accuracy. Other demographic data items were also inaccurately recorded, however the recording of Indigenous status showed the highest level of variation with in most cases a much lower accuracy than other data variables.

The proportion of Aboriginal and/or Torres Strait Islander people living in a hospital's catchment area appeared to be a major factor influencing the accuracy of recording of Indigenous status. Overall amalgamated data from hospitals in areas where a high proportion of the population are Aboriginal and/or Torres Strait Islander reflected a higher percentage of accuracy in recording the Indigenous status of Aboriginal and/or Torres Strait Islander people than those in areas with a lower proportion of Aboriginal and/or Torres Strait Islander people in the population. It should be noted that this trend was apparent when the data for hospitals was amalgamated. This does not mean that all hospitals in these areas were less likely to record Aboriginal and/or Torres Strait Islander patients correctly nor that all hospitals in areas with a high proportion of Aboriginal and/or Torres Strait Islander people necessarily had high levels of completeness.

More accurate reporting in areas with a high proportion of Aboriginal and/or Torres Strait Islander people may be attributable to hospitals and staff in these areas being more aware of Aboriginal and/or Torres Strait Islander issues and having greater awareness of the importance of accurately recording Indigenous status. It may be that Aboriginal and/or Torres Strait Islander people are more 'obvious' in these areas. It is important to note however, that while recording appears to be good in these hospitals, this does not necessarily mean that all people are being asked the Indigenous status question or that best practice procedures for the collection of this data variable are necessarily being followed.

It should also be noted that while accuracy in recording Indigenous status was noticeably higher in areas with high proportions of Aboriginal and/or Torres Strait Islander people in the population, there were some hospitals with quite low proportions of people living in their catchment areas that had very accurate recording. Possible factors influencing this are discussed below.

The effects of employing Aboriginal and/or Torres Strait Islander interviewers to conduct the study were analysed. There appeared to be no difference in the proportion of Aboriginal and/or Torres Strait Islander people who identified as Aboriginal and/or Torres Strait Islander at interview and were recorded as such in the hospital record. That is, the Indigenous status of the interviewer did not appear to make a difference to how Aboriginal and/or Torres Strait Islander people identified at interview. This may be attributable to the recruitment and training program of interviewers which was an important part of the study design. Interviewers were generally selected for their communication and 'people' skills. All interviewers were provided with training that raised their general awareness of a variety of factors influencing Aboriginal and/or Torres Strait Islander health and the role accurate information plays in planning for improvements.

Discussions were held with the hospitals that achieved better results than others to try to ascertain what may have been influential in achieving their higher level of data quality. A factor influencing accurate recording appeared to be the employment of Aboriginal Hospital Liaison Officers (AHLOs). A hospital in an area with a low proportion of people living in the catchment area but in which over 80% of Aboriginal and/or Torres Strait Islander people were correctly recorded attributed their results to the efforts put in by AHLOs. The AHLOs of this hospital receive a daily printout of Aboriginal patients and use this list to contact potential clients. These AHLOs were also active in contacting admission staff with requests to have hospital records amended if an Aboriginal and/or Torres Strait Islander patient had been incorrectly recorded. It was stated however that Aboriginal people who may not be well known in the local community may still be missed because they would not be known to the AHLOs. The good result of this hospital depended on the efforts of AHLOs and other demands on their time was likely to significantly affect results. It should be noted that some ethical/privacy concerns have been raised about the information in hospital records being passed to AHLOs without the prior consent of the patient.

Another factor in the good result of this hospital was thought to be the relatively large number of transfers/referrals of Aboriginal and/or Torres Strait Islander people from remote parts of the state/territory. This hospital employed staff who went to many of the remote communities and there was a well developed relationship between the community health staff and the hospital. The patients admitted to hospital from these communities were well known to the hospital and known to be Aboriginal and/or Torres Strait Islander it was felt there was likely to be little error in correctly recording the Indigenous status of these patients.

Another metropolitan hospital in an area with a relatively low proportion of Aboriginal and/or Torres Strait Islander people in the catchment areas showed 100% accuracy in the recording of Indigenous status in their data collection. They attributed this to a combination of efforts by the Patient Services Clerks, the AHLO and the organisational culture and values of the hospital. The Patient Services Clerks have a unique role in this hospital in that they combine the roles of medical records clerks', admission clerks and ward clerks and maintain waiting lists, pre-admission contact with patients and liaise with patients on the ward. Patient Services Clerks had a sense of ownership of the information collected and felt they were part of the health care team. It was felt that this sense of ownership and responsibility contributed to the accurate results. The role played by the AHLO in this hospital was also seen as very important in raising an awareness of cross-cultural issues throughout the hospital. The AHLO had good support of the Social Work Department and was provided with a daily printout of identified admissions. If there were errors found in recording, relevant staff were contacted and correct collection practices and the need for the question to be asked was reinforced. This regular feedback together with their involvement in education and training of hospital staff was seen as vital to the good results currently being achieved in this hospital. This hospital also had a very high proportion of patients born overseas which has led to a high degree of cross cultural awareness and sensitivity and has had a positive effect on data quality. This hospital also strongly supported the values of unity, excellence, compassion, justice and human dignity and it was felt that this philosophy also contributed to an accurate result.

Another smaller metropolitan hospital reflected extremely high accuracy both in the recording of Indigenous status and on other data items checked. These good results were thought to be partially due to the result of a big effort to ensure admission staff checked all details in the hospital record on each patient admission. This particular effort arose as a result of a patient complaint concerning the accuracy of a particular item in their record. Patients at this hospital also seemed to give hospital staff a great deal of information on any details, such as incorrect addresses or the incorrect spelling of names.

The following sections relate to operational considerations that are important to the study.

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Ethics considerations

The overall study design received approval from the AIHW Ethics Committee. The study involved collecting data that was already collected by the hospital and the training emphasised the confidential nature of information collected. The views of each hospital on the appropriateness or otherwise of seeking ethics clearance from internal institutional committees, varied from hospital to hospital and included:

- viewing ethics clearance as essential;
- seeing it as a useful way of keeping key people informed;
- viewing the study as an internal data quality exercise which did not require ethics clearance;
- some small hospitals did not have ethics committees and saw the approval of the board of management as sufficient.

Ethics approval was generally a time consuming process because applications need to be circulated at least two weeks prior to the ethics committee meeting date and meeting schedules ranged from monthly to three monthly. The length of time required to receive written feedback from the committees ranged from one day to two weeks. In several instances this significantly delayed the commencement of the project within hospitals.

Ethics committees which dealt with a large number of applications involving Aboriginal and/or Torres Strait Islander issues tended to take a much broader view of what constituted a project proposal for consideration than other ethics committees and were often keen to see changes made to the details of the study design. The suggestions for changes to the study design related to factors such as creating employment opportunities for Aboriginal and/or Torres Strait Islander people, increasing Aboriginal and/or Torres Strait Islander involvement in the study and other factors relating to the project's implication for other health settings.

The study is a data quality control exercise and does not involve collecting information that is any different from that already being collected by the hospital. The study does not allow for any individual to be identified or for personal information to be disclosed beyond the hospital. Seeking ethics consideration and approval for the national project was important because it was being initiated by an organisation outside the individual state/territory health systems, however if the procedures are to be used routinely, ethics approval may not necessarily be required each time the quality of data are assessed using this method.

The implementation package produced as part of this project includes the training program that interviewers for the project should receive. This training emphasises the confidential nature of the material being dealt with and the precautions that should be taken in dealing with it.

Management support Ensuring the support and understanding for the project at the senior management level of both hospital and state/territory health departments was a vital component required to ensure successful implementation. Implementation was also simplified when the people coordinating the study had an understanding of the value of information to improving Aboriginal and/or Torres Strait Islander health. In hospitals where management did not see the immediate relevance or value of the project, implementation was more difficult.

Implementation was also simplified in hospitals where it was known that data quality was associated with financial incentives, such as interstate billing or a casemix loading for Aboriginal and/or Torres Strait Islander patients.

Implementation may also be assisted if it occurs concurrently with general data quality training, on how to ask the Indigenous status question with a reinforcement of the importance of the collection of accurate information.

Personnel In the majority of cases the national project was coordinated within individual hospitals by a staff member from medical records, although at one hospital the project was coordinated by the Director of Nursing. Staff undertaking the patient interviews included Aboriginal Hospital Liaison Officers, nurses, medical records staff and ward clerks and commercial interviewers. In South Australia, where the design involved approximately half the interviews being conducted by Aboriginal and/or Torres Strait Islander interviewers, some staff were recruited from outside the hospital.

Although situations varied between hospitals the following points were noted:

- Because of the short-term nature of the work, existing hospital staff often found the task easier than staff recruited from outside the hospital because they knew the hospital well and often had contacts in a number of the wards.
- Staff who had experience with patient contact generally found the work easier.
- Operational matters were more manageable when interviewer positions were dedicated to the study. Interviewers recruited from hospital staff who were also responsible for their normal duties sometimes experienced conflicts of interest between those duties and completing requirements for the study.
- One hospital found it beneficial to arrange for interviewers to meet at least once or twice a day to coordinate and provide support to each other.
- Where staff coordinating the project had a broad view of data quality, including an understanding of the importance of ongoing data quality monitoring and the role data plays in hospital management and health service planning in general, operational considerations were made easier.

Personnel *continued* Factors that were likely to assist smooth operation included:

- Management support and understanding of the issues of data quality in hospital management generally and in particular in relation to Aboriginal and/or Torres Strait Islander health.
- A particular effort to ensure that all personnel involved in the study saw it as legitimate work.
- People involved in interviewing had backfilling available for their other duties.
- Care with protocol, attention to details and follow-ups in informing relevant personnel that the study would be taking place.

The best times to interview patients Hospitals were asked to comment on the preferred time for interviewing. Most hospitals found particular periods during the day were more appropriate than other times for undertaking data quality interviews. However, the preferred times varied from hospital to hospital and generally was dictated by local procedures and routines.

One hospital, in which a large number of patients were classed as inappropriate for interview or unavailable for interview, found it impossible to nominate a preferred time. One hospital preferred to avoid visiting hours as it was felt to be too intrusive to approach patients when they had visitors with them. Interviewers in another hospital found that around lunch or dinner time was the best time to interview patients as wards rounds were over. Early in the morning was generally not preferred because of requirements for showers, ward rounds and appointments. However, in most hospitals interviewers found that seeking to interview 'day only' patients early in the day was the most effective.

Coordination Coordination of interviewers and patients was generally the most difficult and time consuming aspect of the study and hospitals chose to manage the operational requirements in a variety of ways. In one of the small hospitals, to avoid interviewing the same person twice, the interviewer asked 'we are conducting a survey here at the hospital, has anybody spoken to you about this in the last day or so?' before they entered the room. Another hospital found that checking whether patients had already been involved in the study caused delays. Several hospitals used computer generated lists of new admissions and used this to attempt to find new patients for inclusion in the study. One hospital kept a record of Hospital Record Numbers of patients already interviewed and used this list to avoid approaching the same patient twice.

Minors One hospital found it was difficult to seek consent from parents or guardians as they often left the ward very early each day and did not always return until quite late in the evening. Another hospital had similar difficulties although not to the same extent. Parents and guardians not being present or having no comprehension of English was sometimes an issue.

Refusals The proportion of refusals varied greatly from hospital to hospital from over 300 at one hospital to only one at another. At more than one hospital it was felt that most refusals were due to the person not speaking or understanding English. One hospital found patients with language difficulties often did not want to be in the survey and some people were not keen to be in any survey in which personal information was recorded. One hospital which chose to use a signed consent form found some people were uncomfortable about having to sign a form. This hospital had a very high number of refusals. The other hospital that used a signed consent form did not find the same problems. Other reasons were that people did not see any benefit from being involved and did not see why they should provide information they had already provided at admission.

Patients not suitable to be approached or unavailable The proportion of patients not suitable to be approached varied greatly from hospital to hospital. Reasons cited for patients not being approached for participation in the study, included that they were 'too unwell', 'language difficulties', 'intellectually impaired', patients were 'infectious' or had already taken part in the study. Where the numbers of these patients were high, study coordinators and interviewers found this to be a very frustrating and time consuming aspect of the project.

Patients who were not available at the time the interviewer visited the wards added to the time taken to carry out the study. Some reasons patients were unavailable or were not on the ward included, they were asleep, having a procedure, at theatre, showering, with visitors or on the phone. Generally, it was felt however, that failure to be interviewed was not a major bias in this study.

Immediate positive and negative outcomes At one hospital an instance occurred where parents became aware (and were upset) that their child's hospital record had been recorded incorrectly, as non-Indigenous. Staff were able to say to the parents that the hospital was aware of problems with information being collected and were conducting a study which would assist in addressing some of these problems.

At one hospital it was noted that awareness of the importance of collecting accurate information increased as a result of the hospital taking part in the data quality assessment exercise and it was felt that the quality of data collected over the study period might have improved as a result of this awareness (Hawthorne effect).

Interviewers at some hospitals encountered difficulties with patient reactions, such as some Aboriginal and/or Torres Strait Islander patients finding the question of whether they were Aboriginal and/or Torres Strait Islander insulting as the answer 'was obvious'. Some non-Indigenous patients interpreted the study to be an example of Aboriginal and/or Torres Strait Islander people receiving better treatment and were hostile.

Overall the hospitals involved, found the study to be beneficial and useful to their understanding of the issues involved in the accurate collection of demographic data as well as in raising staff awareness of the importance of accurate data collection.

PART 2

OPERATIONAL PROCEDURES FOR ASSESSING THE COMPLETENESS OF IDENTIFICATION OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE IN HOSPITAL SEPARATION DATA

BACKGROUND

This section of the report provides guidelines on a procedure to assess the accuracy of admitted patients' Indigenous status and other demographic information as recorded in hospital data. The procedures were developed in response to *'The Aboriginal and Torres Strait Islander Health Information Plan....this time lets make it happen'* (ATSIHWIU 1997) which makes a series of recommendations concerning assessing and improving the quality of the identification of Aboriginal and/or Torres Strait Islander people within administrative health data collections. Recommendation 23 states:

In '...that quality assessment work be undertaken on all collections on the premise that data sets which have not had the completeness of their Indigenous identification validated are unreliable as sources of statistics' (ATSIHWIU 1997 p 78).

The procedures were developed by a project funded by the Australian Health Ministers' Advisory Council (AHMAC) and coordinated by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU), a joint program of the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW). In five States/Territories, 12 hospitals took part in this project during 1998. The procedures outlined here were tested and found to be effective in both large and small hospitals as well as hospitals with both high and low numbers of Aboriginal and/or Torres Strait Islander patients. The operation of this pilot project is outlined in Part 1 of this report.

The overall approach involves comparing the information in hospital records with an independent source of the same information. This is essentially a data quality assessment exercise. While the main purpose of the procedures is to assess the completeness of the recording of Indigenous status, a hospital which implements these procedures will be able to assess the accuracy with which other key demographic data are recorded. Guidelines are also included that will enable a state or territory to estimate the completeness of the recording of Indigenous status for whole state or territory.

OBJECTIVES

A State or Territory health department or on occasion, a single hospital or hospitals may use these procedures to:

- assess the accuracy of the recording of Indigenous status in hospital separation data;
- assess the accuracy of the recording of sex, date of birth, country of birth and usual residence information in hospital separation data;

OBJECTIVES *continued*

- calculate a correction factor in relation to the numbers of Aboriginal and/or Torres Strait Islander people recorded in hospital separation data;
- monitor the effects of activities undertaken to improve Aboriginal and/or Torres Strait Islander and other demographic data accuracy;
- assess which aspects of hospital practices could be changed in order to improve Aboriginal and/or Torres Strait Islander data accuracy.

METHODOLOGY

The methodology for the data quality assessment is essentially very simple. It involves comparing data from patient records with data that is thought to be close to perfect. Hospital data held electronically are compared with the same data collected using a person-to-person interview by interviewers who are specially trained to undertake the required patient interviews. This methodology is based on the assumption that the information collected in a person-to-person interview is correct and that this information can be used as a benchmark by which the data held in the hospital records can be checked. There may be some situations where this assumption is not true and hospitals need to be aware of this possibility.

ETHICS CONSIDERATIONS

The study is a data quality control exercise and does not involve collecting information that is any different to that already being collected by the hospital. The study does not allow for any individual to be identified or for personal information to be disclosed. The pilot project design upon which these procedures are based, met the requirements of the AIHW ethics committee. Viewed as an internal data quality assessment it will probably not require the approval of individual hospital or jurisdiction ethics committees though individual hospitals may vary with regards to their requirements on this issue. It is recommended that the decision on gaining ethics approval or not be resolved before interviews commence.

RESOURCE REQUIREMENTS

Successful implementation of the study requires:

- the commitment of senior management to help ensure the smooth operation and cooperation of staff at all levels of the hospital;
- a staff member to oversee and coordinate the day to day management of the interviews, data entry and analysis and interpretation of results;
- selection, training and supervision of interviewers.

The main determinant of the time and resources required for this study is the number of patient interviews required and the patient turnover within the hospital. The pilot project found that obtaining the number of interviews required took between 2 and 10 equivalent full-time weeks. In elapsed time this amounted to between 5 and 19 weeks.

It is possible to manage the patient interviews in a number of different ways depending on the characteristics of the hospital. A hospital with a low patient turnover may employ an interviewer for two hours per week whereas a large hospital carrying out a large number of interviews may employ 2-3 interviewers full-time.

SAMPLE SIZE AND SELECTION

The number of patients that need to be interviewed (or the number of records that need to be checked) is referred to as the sample size for the data quality assessment. The sample size required to produce a sufficiently accurate estimate of the completeness of the identification of Aboriginal and/or Torres Strait Islander people is dependant on:

- the proportion of admitted patients who are Aboriginal and/or Torres Strait Islander;
- the proportion of Aboriginal and/or Torres Strait Islander people that are currently correctly identified in the hospital data base; and
- the degree of accuracy required in the result (expressed as a constraint on the magnitude of the standard error).

While these variables interact to influence the desired sample size, the proportion of patients who are Aboriginal and/or Torres Strait Islander has the greatest influence on the sample size required. The lower the proportion of Aboriginal and/or Torres Strait Islander people the higher the sample size required to produce a meaningful assessment of data accuracy.

Appendix 1.1 contains sample size calculations based on a number of different assumptions. Health departments or hospitals can use these tables to work out an approximate sample size that will meet their requirements.

The proportion of patients who are Aboriginal and/or Torres Strait Islander can be calculated using the existing hospital data base and is likely to be highly dependant on the proportion of people living in the hospital's catchment area who are Aboriginal and/or Torres Strait Islander. Appendix 2.1 contains a table showing the proportion of Aboriginal and/or Torres Strait Islander people in each Aboriginal and Torres Strait Islander Commission (ATSIC) region from the 1996 Census.

The proportion of Aboriginal and/or Torres Strait Islander people correctly identified in hospital records is not likely to be known unless a similar study has been carried out previously. If this is the case the previous proportion of correct records can be used. If, however, this is the first time such a study has been undertaken an estimate of correctness needs to be made.

The degree of accuracy required in the result is also known as the standard error. If the health department or hospital requires a ballpark estimate of the accuracy of recording then a relative standard error of 25% would be acceptable. Sample sizes are likely to be unpractically high if a much greater degree of accuracy (i.e. lower standard error) is required. Low standard errors and hence large sample sizes may be needed to detect small changes in the completeness of the identification of Aboriginal and/or Torres Strait Islander people.

SAMPLE SIZE AND
SELECTION *continued*

If the quality assessment is conducted across a group of hospitals or a whole state or territory there are a number of alternative methods of partitioning a required sample across the hospitals in a jurisdiction. These are outlined below:

- every hospital in the state/territory carrying out patient interviews full-time for one 'sample week'. This would ensure all hospitals contributed to the result, however it would be administratively difficult to ensure trained interviewers were available and the same procedures were used in every hospital. Depending on the week selected the result may be influenced by seasonal factors; and
- select a random sample of hospitals across the state/territory. If this is done depending on the circumstances of the state/territory it may be desirable to stratify the sample according to the proportions of the people in the hospital's catchment area who are Aboriginal and/or Torres Strait Islander.

INTERVIEWERS

Interviewers can be existing hospital staff or recruited specially for the task. There is some suggestion that the former are preferred. All interviewers should attend the two hour training session. The training must be provided (Appendix 2.2 contains the interviewer training package) and trainers should ensure that interviewers understand the purpose of the study, know how to approach patients and administer the questionnaire in a way that is consistent.

Interviewers should be reminded of the confidential nature of the material they are dealing with and even though no names are recorded, care should be taken to keep completed questionnaire forms in a locked and secure area. These forms should be stored in a secure manner up to 5-7 years from the conclusion of the study at which time they should be shredded according to local policies.

In the implementation of the pilot project, although situations varied between hospitals, the following points were noted:

- Because of the short-term nature of the work, existing hospital staff often found the task easier than staff recruited from outside the hospital because they knew the hospital well and often had contacts in a number of the wards.
- Staff who had previous experience with patient contact generally found the work easier.
- Operational matters were more manageable when interviewer positions were dedicated to the study. Interviewers recruited from hospital staff who were also responsible for their normal duties sometimes experienced conflicts of interest between their normal duties and completing requirements for the study.

INTERVIEWERS *continued*

- One hospital found it beneficial for interviewers to meet at least once or twice a day to coordinate and provide support to each other.
- Aboriginal and/or Torres Strait Islander staff from outside the hospital were difficult to recruit and retain.

Interviewers at some hospitals encountered difficulties with patient reactions, such as a small number of Aboriginal and/or Torres Strait Islander patients finding the question on Indigenous status insulting as the answer 'was obvious'. Conversely a small number of non-Indigenous patients interpreted the study to be an example of Aboriginal and/or Torres Strait Islander people receiving better treatment. Interviewers should be aware that these are possible reactions.

When staff coordinating the project had a broad view of the importance of quality data, such as its role in hospital management and health service planning in general, operational considerations were made easier.

PATIENT INFORMATION

It is important that patients understand the purpose of the study before they agree to participate in it. A patient information sheet has been designed to provide this information. Appendix 2.3 contains examples of patient information sheets. Interviewers should read through the sheet with patients, ask the patient if they have any questions and then ask the patient if they wish to be part of the study. The information sheet can then be left with the patient. Some hospitals may require simpler versions of the information sheet or the sheet may be tailored to the local setting. This decision should rest with individual hospitals. Some hospitals in the pilot project found language to be a barrier to people understanding the project. Hospitals may wish to use interpreters to overcome this situation.

QUESTIONNAIRE

A copy of the recommended questionnaire is in Appendix 1.2. In addition to the question concerning Aboriginal and/or Torres Strait Islander origin the questionnaire includes questions on sex, date of birth, country of birth and usual residence. Administering this questionnaire allows the accuracy of this additional demographic information to be assessed. This is of value in its own right and knowledge of the accuracy of these variables provides a baseline for comparing the accuracy of the recording of Indigenous status. In addition, the possible effects of these demographic factors on the recording of Indigenous status can be assessed.

The question used to determine a person's Indigenous status is the ABS standard question. This is also the standard question set out in the National Health Data Dictionary (National Health Data Committee 1997):

Are you of Aboriginal or Torres Strait Islander origin?

For persons of both Aboriginal and Torres Strait Islander origin mark both 'Yes' boxes.

- No
- Yes, Aboriginal
- Yes, Torres Strait Islander

This is the form of the question as it appears on the Census from which estimates of the Aboriginal and/or Torres Strait Islander population are produced. As most health statistics rely on Census based population estimates for the calculation of rates, this is considered the 'gold standard' by which other methods of obtaining this information should be measured.

It is recognised that not all hospitals ask the question in this form. This issue is addressed in the *Indigenous Status Question Training Package* (ABS 1998) prepared by the National Centre for Aboriginal and Torres Strait Islander Statistics (NCATSIS) ABS. It is also recognised that it is not always possible to directly question all people in this way on their admission to hospital. Nevertheless, it is the answer to this question that is of interest.

The question concerning date of birth allows interviewers to indicate whether the answer is an estimate. This is because some people, particularly some Aboriginal and/or Torres Strait Islander people, do not know their exact date of birth. Hospitals generally have standard methods of recording date of birth when this is an estimate. It is important that the same conventions be adopted in the interview.

The question 'where do you usually live?' is asked in the patient questionnaire, because where a person usually lives (as opposed to their address) is of relevance to the analysis of health information for planning purposes. The address given may be useful for contact purposes, but where people 'usually' live is generally of more relevance in health planning and policy. It is recognised that hospitals and health planners are interested in this question for different reasons. The criteria for matching addresses should be determined before the study commences and the data recorded in the interview in such a way to facilitate the matching with what is in the hospital record. This is likely to vary from state to state.

SELECTING PATIENTS AND MANAGING INTERVIEWS

All hospital admitted patients, both Aboriginal and/or Torres Strait Islander and non-Indigenous patients, with the following exceptions, should be considered as potential participants in the study:

- Patients considered, by the person in charge of the ward, not to be well enough or competent enough to give informed consent and hence to be part of the study. This included people who have recently had anaesthetics, procedures or drugs that may impair their judgement.
- Patients in Intensive Care Units or in restricted wards or where there are medical, security or patient care reasons for them not to be included.
- There may be other cases where it is not considered appropriate to consider patients for the study. This decision should be left to the individual hospital.

Children and teenagers (people aged under 18 years) can be included with the consent of their parent or guardian. For older teenagers interviewers should seek consent from both them and their parents or guardians.

All admitted patients who are in hospital on the day of the interview should be considered for inclusion in the study, with the exception of the exclusions mentioned above. Patients should be selected in order to achieve as close as possible, a representative sample of patients in the hospital and can be achieved by:

- obtaining a proportion of day only and longer stay admissions which is similar to that of the hospital overall i.e. stratify the complete sample based on these types of admissions;
- covering all wards and parts of the hospital, with the exception of areas where restrictions are necessary for medical reasons or patient care as outlined above.

Ways of achieving a reasonably representative sample will need to be tailored to local circumstances. Possible ways of doing this include using the guidelines above and selecting every patient for interview based on admission order. The required sample fraction can be achieved by skipping a fixed number of admissions before selecting the next patient for interview. An alternative method is to ensure coverage of all wards is made and all suitable patients that are available, are approached to seek their participation.

SELECTING PATIENTS AND MANAGING INTERVIEWS

continued

The best time to interview patients is likely to vary between hospitals. In the pilot study some hospitals found:

- around lunch or dinner time was effective;
- early in the morning was often not effective because of requirements for showers, ward round and appointments;
- avoiding visiting hours was effective as this was seen as overly intrusive for patients.

Decisions on interview timing and scheduling must be made after considering local routines and practical requirements.

PROJECT MANAGEMENT

The number of patient interviews required, number of interviewers available, the patient throughput of the hospital and the timelines in which the study is required to operate will determine exactly how the conduct of interviews may be managed. After a few days of interviewing it would be beneficial if the procedures being used were reviewed and modified if necessary.

Locating patients to interview in an efficient manner can be a time consuming aspect of the study. While it is preferable to avoid interviewing the same patient twice, it is not a major problem to do so. If patients are interviewed twice only one interview record (nominally the first one) should be used to match with the hospital record. The following methods, depending on local circumstances, could be used to avoid this:

- using computer generated lists of new admissions to locate newly admitted patients for inclusion in the study;
- having the interviewer ask 'we are conducting a survey here at the hospital, has anybody spoken to you about this in the last day or so?' at the commencement of a possible interview; and
- keeping a list of record numbers of patients already interviewed and using this list to avoid approaching the same patient twice.

Other key points to ensure effective implementation of the study include:

- management support and understanding of the issues of data quality in hospital management generally and in relation to Aboriginal and/or Torres Strait Islander health in particular;
- ensuring that all personnel involved in the study saw it as legitimate work;
- if interviewers are recruited from existing hospital staff they should be taken off-line from their normal duties if possible. Ideally their positions should be backfilled to remove the pressure arising from normal duties;

PROJECT MANAGEMENT
continued

- having appropriate attention to protocol by informing relevant personnel that the study will be taking place; and
- it is particularly important that people in charge of wards are aware that the data quality assessment will be carried out and that they will be asked to indicate which patients are suitable to approach about participating.

DATA ANALYSIS AND
REPORTING RESULTS

Completed questionnaire forms should be kept in a secure area. Using the hospital record numbers or unit record numbers this data should be matched to the existing data records. Depending on the number of questionnaire forms this matching can be done manually or using a program such as SAS which will carry out the matching electronically.

The suggested format for reporting the results is:

Aboriginal and/or Torres Strait Islander in interview	
Number of Aboriginal and/or Torres Strait Islander people in hospital record	a
Number of non-Indigenous people in hospital record	b
Number of not stated in hospital record	c
Non-Indigenous in interview	
Number of Aboriginal and/or Torres Strait Islander people in hospital record	d
Number of non-Indigenous people in hospital record	e
Number of not stated in hospital record	f

A crude correction factor for adjusting hospital record statistics to account for under reporting of Aboriginal and/or Torres Strait Islander people be calculated as $(a+b+c)/(a+d)$. This is the total number of Aboriginal and/or Torres Strait Islander people in interview divided by the total number of Aboriginal and/or Torres Strait Islander people in the hospital records. A standard error and confidence interval can be calculated for this correction factor.

An example of the calculation of the correction factor and it's standard error follows:

Aboriginal and/or Torres Strait Islander in interview	
Number of Aboriginal and/or Torres Strait Islander people in hospital record	a = 35
Number of non-Indigenous people in hospital record	b = 30
Number of not stated in hospital record	c = 2
Non-Indigenous in interview	
Number of Aboriginal and/or Torres Strait Islander people in hospital record	d = 3
Number of non-Indigenous people in hospital record	e = 1402
Number of not stated in hospital record	f = 20

DATA ANALYSIS AND
REPORTING RESULTS
continued

$$\begin{aligned} \text{Correction factor (cf)} &= (a + b + c) / (a + d) \\ &= (35 + 30 + 2) / (35 + 3) \\ &= 67 / 38 \\ &= 1.76 \end{aligned}$$

$$\begin{aligned} \text{Standard error (se)} &= \sqrt{(cf - 1) * cf / (p * z)} \\ &= \sqrt{(1.76 - 1) * 1.76 * / (.04 * 1492)} \\ &= \sqrt{2.35 / 59.68} \\ &= \sqrt{0.03} \\ &= 0.19 \end{aligned}$$

$$\text{Correction factor} = cf = 1.76$$

Proportion Aboriginal and/or Torres Strait

$$\begin{aligned} \text{Islander people} &= p = (a + b + c) / (d + e + f) \\ &= 0.04 \end{aligned}$$

$$\text{Sample size} = z = a + b + c + d + e + f = 1492$$

In order to ascertain if the completeness of recording of Indigenous status varied for different admission types similar tables can be prepared and broken down by the variable of interest (e.g. emergency vs booked admission). This information is usually available on the existing hospital records and may be useful to identify areas where improvements can be made.

In order to ascertain if the quality of recording Indigenous status varied between particular groups similar tables can be prepared and broken down by sex, age group, whether born in Australia and usual residence. These breakdowns may be less important than making comparisons of overall data quality for successive recordings or annual comparisons.

To assess the completeness of recording in the other demographic variables similar tables can be prepared. For example, in order to assess the accuracy of the recording of sex in hospitals records, the following format could be used.

Male in interview	
Number of males in hospital record	a
Number of females in hospital record	b
Not stated in hospital record	c
Female in interview	
Number of males in hospital record	d
Number of females in hospital record	e
Not stated in hospital record	f

DATA ANALYSIS AND
REPORTING RESULTS
continued

If during the course of undertaking the study, errors are found in the hospital records, these should be corrected. Changes should be made after the analysis of accuracy is carried out to ensure that this analysis is a true representation of the likely quality of hospital records.

Results of the accuracy of recording Indigenous status and other demographic data can then be used to provide feedback to both hospital operational staff and hospital management and used to inform training programs or operational changes that lead to improvements in data quality.

REFERENCES

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ATSIHWIU	Aboriginal and Torres Strait Islander Health and Welfare Information Unit

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APPENDIX 1.1

SAMPLE SIZE CALCULATIONS

SAMPLE SIZE CALCULATIONS

Sample size formula $z = 1 / (y * y(1-s) * p)$	Proportion of Aboriginal and/or Torres Strait Islander people correctly recorded(s) %	Proportion of total sample who are Aboriginal and/or Torres Strait Islander people(p) %	Standard error(y) %	Sample size(z) %
Vary the proportion correctly recorded. Keep proportion in sample and standard error constant	10		25	7 111
	20	2.5	25	4 000
	30	2.5	25	3 048
	40	2.5	25	2 667
	50	2.5	25	2 560
	60	2.5	25	2 667
	70	2.5	25	3 048
	80	2.5	25	4 000
	90	2.5	25	7 111
Vary the proportion correctly recorded. Keep proportion in sample and standard error constant.	10		25	3 556
	20	5	25	2 000
	30	5	25	1 524
	40	5	25	1 333
	50	5	25	1 280
	60	5	25	1 333
	70	5	25	1 524
	80	5	25	2 000
	90	5	25	3 556
Vary the proportion of Indigenous people in the sample. Keep the proportion correctly recorded and the standard error constant.	50	0.625	25	10 240
	50	1.25	25	5 120
	50	2.5	25	2 560
	50	5	25	1 280
	50	10	25	640
	50	20	25	320
	50	50	25	128

...continued

SAMPLE SIZE CALCULATIONS—continued

Sample size formula $z = 1 / (y \cdot y(1-s) \cdot s \cdot p)$	Proportion of Aboriginal and/or Torres Strait Islander people correctly recorded(s) %	Proportion of total sample who are Aboriginal and/or Torres Strait Islander people(p) %	Standard error(y) %	Sample size(z) %
Vary the standard error. Keep the proportion in the sample and the proportion correctly recorded constant.	50	2.5	10	16 000
	50	2.5	15	7 111
	50	2.5	20	4 000
	50	2.5	25	2 560
	50	2.5	30	1 778
	50	2.5	40	1 000
Increase both the proportion correct and the proportion in the sample.	30	0.625	25	12 190
	40	1.25	25	5 333
	50	2.5	25	2 560
	60	5	25	1 333
	70	20	25	381
	80	50	25	200
Decrease the proportion correct and increase the population.	80	0.625	25	16 000
	70	1.25	25	6 095
	60	2.5	25	2 667
	50	5	25	1 280
	40	20	25	333
	30	50	25	152

Hospital Letterhead

Hospital Data Quality Study

1. Consent given

Yes 1

No 2

Interviewer..if no do not proceed

2. Hospital record number

Interviewer..record from patient's arm bracelet

3. Are you

Male 1

or

Female? 2

4. Are you of Aboriginal or Torres Strait Islander origin?

Interviewer..if both Aboriginal and Torres Strait Islander, tick both 'yes' boxes

No 1

Yes, Aboriginal 2

Yes, Torres Strait Islander 3

Coder..if 2 and 3 code 4

4

5. Were you born in Australia?

Yes 1

No 2

If no, specify country

6. What is your date of birth?

_____ day/month/year

Interviewer..indicative if this is an estimate 1

7. Where do you usually live?

_____ number/street

_____ suburb or town/postcode/State or Territory

Interviewer..thank the person for participating in the study

Interviewer no. _____

Date _____

Ward no. _____

Time taken for interview _____

Minutes

Interviewer..note any changes to be made to hospital records at the conclusion of the study

Interviewer..any other comments

APPENDIX 1.3

DETAILED RESULTS

HOSPITAL ONE

1.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	18	12	3	33	54.5
Non-indigenous	2	1 442	41	1 485	97.1
Not recorded	—	—	—	—	—
Total	20	1 454	44	1 518	—

1.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	812	9	—	821	98.9
Female	7	689	—	696	99.0
Not recorded	—	1	—	1	—
Total	819	699	—	1 518	98.9

1.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	942	66	—	1 008	93.5
Not born in Australia	20	490	—	510	96.1
Total	962	556	—	1 518	94.3

1.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
	<i>no.</i>	<i>%</i>
Date of birth(a)	1 445	95.2
Address(b)	1 225	82.5

(a) Includes estimates.
(b) Matched to postcode.

HOSPITAL TWO

2.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	44	22	5	71	62.0
Non-indigenous	1	1 312	6	1 319	99.5
Not recorded	—	—	—	—	—
Total	45	1 334	11	1 390	—

2.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	643	1	—	644	99.8
Female	—	746	—	746	100.0
Not recorded	—	—	—	—	—
Total	643	747	—	1 390	99.9

2.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	1 323	6	—	1 329	99.6
Not born in Australia	5	56	—	61	91.8
Total	1 328	62	—	1 390	99.2

2.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
	<i>no.</i>	<i>%</i>
Date of birth(a)	1 377	99.06
Address(b)	1 302	93.67

(a) Includes estimates.
(a) Matched to SLA.

HOSPITAL THREE

3.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	37	7	—	—	—
Non-indigenous	—	1 418	—	1 418	100
Not recorded	—	—	—	—	—
Total	37	1 425	—	1 462	—

3.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	653	1	—	654	99.9
Female	—	808	—	808	100.0
Not recorded	—	—	—	—	—
Total	653	809	—	1 462	99.9

3.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	886	38	—	924	95.9
Not born in Australia	72	466	—	538	86.6
Total	958	504	—	1 462	92.5

3.4 DATE OF BIRTH AND ADDRESS

<i>At interview</i>	<i>Interview records which match hospital records</i>	
	<i>no.</i>	<i>%</i>
Date of birth(a)	1 442	98.6
Address(b)	1 380	94.4

(a) Includes estimates.
(b) Matched to suburb.

HOSPITAL FOUR

4.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	13	—	—	13	100.0
Non-indigenous	—	890	21	911	97.7
Not recorded	—	—	—	—	—
Total	13	890	21	924	—

4.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	486	—	—	486	100.0
Female	—	438	—	438	100.0
Not recorded	—	—	—	—	—
Total	486	438	—	924	100.0

4.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	588	5	—	593	99.2
Not born in Australia	9	322	—	331	97.3
Total	597	327	—	924	98.5

4.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	896	97.0
Address(b)	905	97.9

(a) Includes estimates.

(b) Matched to postcode.

HOSPITAL FIVE

5.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	95	7	1	103	92.2
Non-indigenous	1	185	—	186	99.5
Not recorded	—	1	—	1	—
Total	96	193	1	290	—

5.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	130	1	—	131	99.2
Female	2	157	—	159	98.7
Not recorded	—	—	—	—	—
Total	132	158	—	290	99.0

5.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	259	2	—	261	99.2
Not born in Australia	2	27	—	29	93.1
Total	261	29	—	290	98.6

5.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	273	94.1
Address(b)	258	89.0

(a) Does not include estimates.
(b) Matched to SLA.

HOSPITAL SIX

6.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	125	8	3	136	91.9
Non-indigenous	1	205	12	218	94
Not recorded	—	—	1	1	—
Total	126	213	16	355	—

6.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	135	2	1	138	97.8
Female	3	211	3	217	97.2
Not recorded	—	—	—	—	—
Total	138	213	4	355	97.5

6.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	301	1	1	303	99.3
Not born in Australia	2	46	4	52	88.5
Total	303	47	5	355	97.8

6.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
	<i>no.</i>	<i>%</i>
Date of birth(a)	323	91.0
Address(b)	210	59.2

(a) Does not include estimates.
(b) Matched to community or suburb.

HOSPITAL SEVEN

7.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	166	1	—	167	99.4
Non-indigenous	—	83	—	83	100
Not recorded	—	—	1	1	—
Total	166	84	—	250	—

7.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	155	—	—	115	100.0
Female	—	135	—	135	100.0
Not recorded	—	—	—	—	—
Total	115	135	—	250	100.0

7.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	228	1	—	229	99.6
Not born in Australia	—	21	—	21	100.0
Total	228	22	—	250	99.6

7.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	206	82.4
Address(b)	219	87.6

(a) Includes estimates. In 37 cases no date of birth was recorded at interview.

(b) Matched to community or suburb.

HOSPITAL EIGHT

8.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	21	17	—	38	55.3
Non-indigenous	3	552	15	570	96.8
Not recorded	—	1	—	1	—
Total	24	570	15	609	—

8.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	267	—	—	267	100.0
Female	—	340	—	340	100.0
Not recorded	—	—	1	1	—
Total	267	340	1	608	99.8

8.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	535	3	13	551	97.1
Not born in Australia	7	48	3	58	82.8
Total	542	51	16	609	95.7

8.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	578	95.1
Address(b)	603	94.8

(a) Includes estimates.

(b) Matched to community or postcode.

HOSPITAL NINE

9.1 INDIGENOUS STATUS(A)

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	4	—	—	4	100.0
Non-indigenous	7	384	—	391	98.2
Not recorded	—	—	—	—	—
Total	11	384	—	395	—

(a) This unusual result showing more Indigenous people in the hospital record than at the interview can be attributed to the codes for Indigenous status changing in the middle of the study period. This resulted in seven non-Indigenous people being given the old/wrong code.

9.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	127	3	—	130	97.7
Female	3	262	—	265	98.9
Not recorded	—	—	—	—	—
Total	130	265	—	395	98.5

9.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	329	—	—	329	100.0
Not born in Australia	—	66	—	66	100.0
Total	329	66	—	395	100.0

9.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	395	100.0
Address(b)	395	100.0

(a) Includes estimates.

(b) Matched to postcode.

HOSPITAL TEN

10.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	11	9	—	20	55.0
Non-indigenous	—	999	—	999	100
Not recorded	—	—	—	—	—
Total	11	1 008	—	1 019	—

10.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	507	4	—	511	99.2
Female	5	503	—	508	99.0
Not recorded	—	—	—	—	—
Total	512	507	—	1 019	99.1

10.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	778	11	—	789	98.6
Not born in Australia	24	206	—	230	89.6
Total	802	217	—	1 019	96.6

10.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	959	94.1
Address(b)	914	89.7

(a) Includes estimates.
(b) Matched to postcode

HOSPITAL ELEVEN

11.1 INDIGENOUS STATUS

	<i>Indigenous in hospital record</i>	<i>Non-Indigenous in hospital</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Indigenous	15	3	1	19	78.9
Non-indigenous	—	37	—	37	100.0
Not recorded	—	—	—	—	—
Total	15	40	1	56	—

11.2 SEX

	<i>Male in hospital record</i>	<i>Female in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>In interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Male	27	2	—	29	93.1
Female	—	27	—	27	100.0
Not recorded	—	—	—	—	—
Total	27	29	—	56	96.4

11.3 BORN IN AUSTRALIA

	<i>Born in Australia in hospital record</i>	<i>Not born in Australia in hospital record</i>	<i>Unknown in hospital record</i>	<i>Total</i>	<i>Correctly recorded</i>
<i>At interview</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>%</i>
Born in Australia	38	1	—	39	97.4
Not born in Australia	1	16	—	17	94.1
Total	39	17	—	56	96.4

11.4 DATE OF BIRTH AND ADDRESS

	<i>Interview records which match hospital records</i>	
<i>At interview</i>	<i>no.</i>	<i>%</i>
Date of birth(a)	47	83.9
Address(b)	50	89.3

(a) does not include estimates.

(b) Matched to SLA.

APPENDIX 2.1

ABORIGINAL AND TORRES STRAIT ISLANDER POPULATION

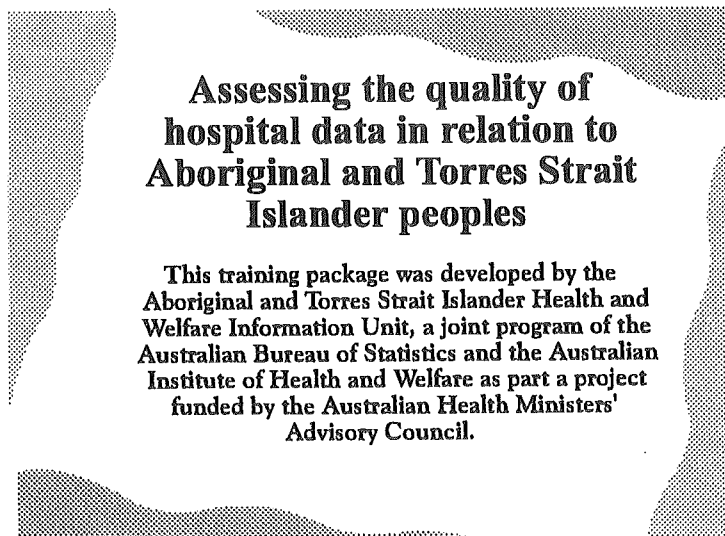
CENSUS COUNTS, PLACE OF ENUMERATION(a), ATSI REGION

	Indigenous no.	Non-Indigenous no.	Not stated no.	Total no.	Percentage Indigenous %
ATSI REGION					
Queanbeyan	9 123	559 302	15 282	583 707	1.56
Bourke	7 344	47 178	2 047	56 569	12.98
Coffs Harbour	25 058	1 179 220	31 967	1 236 245	2.03
Sydney	34 286	3 545 262	114 641	3 694 189	0.93
Tamworth	10 711	184 924	5 310	200 945	5.33
Wagga Wagga	18 047	489 388	14 387	521 822	3.46
Wangaratta	10 395	2 435 019	71 307	2 516 721	0.41
Ballarat	11 079	1 768 245	58 081	1 837 405	0.6
Brisbane	27 635	2 016 874	62 904	2 107 413	1.31
Cairns	14 712	168 380	8 728	191 820	7.67
Mount Isa	6 658	26 113	1 465	34 236	19.45
Cooktown	5 635	7 076	773	13 484	41.79
Rockhampton	11 332	351 508	11 340	374 180	3.03
Roma	8 804	262 198	8 437	279 439	3.15
Torres Strait Area	6 064	1 297	254	7 615	79.63
Townsville	14 678	286 025	10 296	310 999	4.72
Adelaide	12 689	1 259 849	32 784	1 305 322	0.97
Ceduna	1 867	34 218	1 066	37 151	5.03
Port Augusta	5 888	71 802	2 359	80 049	7.36
Perth	17 998	1 238 991	29 749	1 286 738	1.4
Broome	3 423	8 988	1 047	13 458	25.43
Kununurra	4 088	6 217	1 474	11 779	34.71
Warburton	2 688	8 091	1 078	11 857	22.67
Narrogin	6 204	219 883	6 068	232 155	2.67
South Hedland	4 298	31 045	2 565	37 908	11.34
Derby	3 958	2 968	245	7 171	55.19
Kalgoorlie	3 152	47 504	2 529	53 185	5.93
Geraldton	5 006	53 720	2 582	61 308	8.17
Hobart	13 873	429 748	14 973	458 594	3.03
Alice Springs	4 449	20 911	1 221	26 581	16.74
Jabiru	7 746	3 767	533	12 046	64.3
Katherine	7 122	10 923	1 144	19 189	37.12
Aputula	7 518	3 881	682	12 081	62.23
Nhulunbuy	7 001	4 796	318	12 115	57.79
Tennant Creek	3 449	3 198	363	7 010	49.2
Darwin	8 992	85 947	5 404	100 343	8.96
Aust.	352 970	16 874 456	525 403	17 752 829	1.99

(a) Excludes overseas visitors.

Source: Australian Bureau of Statistics 1997, Population Distribution, Indigenous Australians—Cat no. 4705, ABS, Canberra.

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& WELFARE LIBRARY



**TRAINERS PREPARATION
FOR DELIVERY**

Equipment - overhead
projector or powerpoint
projector

Participants should be supplied with a copy of the overheads as well as patient information sheet and questionnaire that will be used.

You will need to prepare for the training by making sure that you have read and understood the contents of the training package and/or have been trained in the delivery of this material. If you have any questions about the contents of the materials you should phone: NCATSIS on Freecall 1800 633 216.

Trainers dialogue

Welcome the participants and thank them for taking the time to attend.

This session will take approximately 60 minutes and is one of participant involvement.

Training objectives

- ☒ Explain the importance of good quality information about Aboriginal and Torres Strait Islander health
- ☒ Explain how the completeness of the hospital data will be assessed
- ☒ Go through how to conduct the patient interviews that are a component of this assessment

Trainers dialogue Read through the training objectives and ask the group if there are any questions.

National Centre for Aboriginal and Torres Strait Islander Statistics (NCATSIS), ABS, Darwin

- ☒ NCATSIS has responsibility for Australian Bureau of Statistics (ABS) Indigenous Statistics. To achieve this goal NCATSIS works in collaboration with State/Territory health departments and other service providers and acknowledges that these partnerships are paramount to achieve national data quality objectives
- ☒ Promotion of the use of standard and high quality methods of identifying Aboriginal and Torres Strait Islander people in statistical collections
- ☒ Reporting on findings from the first National Aboriginal and Torres Strait Islander Survey (NATSIS)
- ☒ Aboriginal and Torres Strait Islander census issues: enumeration, geography, output
- ☒ The Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU) a joint project between ABS and the Australian Institute of Health and Welfare (AIHW): analysis and reporting of health and welfare statistics

Trainers dialogue Read through and expand on each point.

In many areas administrative statistics are collected as a by product of government registration processes or the delivery of services (such as in hospitals).

The primary reason for promoting the use of the ABS standard Indigenous origin question across all administrative data collections is to ensure similar (or the same) methodologies are used in data collection leading to reliable information derived from the data.

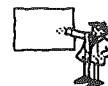
These training materials have been developed in response to the national need for better quality information.

Trainers dialogue *continued*

The resource materials and critical comment provided during the course of the development of this package have been supplied by range of organisations from around Australia. NCATSIS would like to acknowledge the input of a range of organisations and individuals in the development of this training package. Without this assistance the development of this package would not have been possible.

Why is information about the health of Aboriginal and Torres Strait Islander people important ?

- ☒ most of us enjoy a good standard of living and a good level of health, unfortunately this is not true for all Australians
- ☒ Aboriginal and/or Torres Strait Islander peoples have serious health problems, and by far, the worst of all Australians



Did you know?

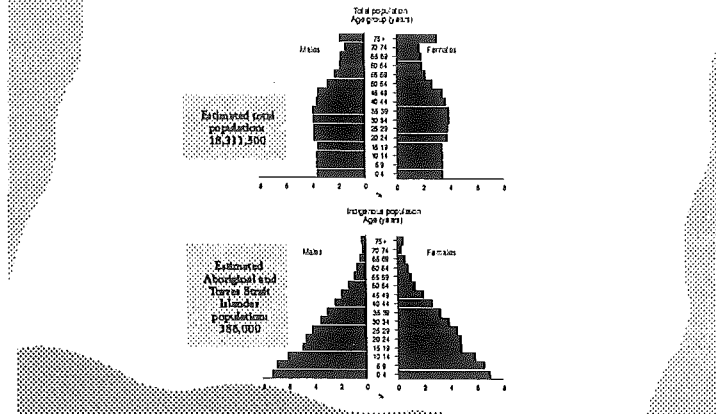
- ☒ Life expectancy at birth is 15-20 years lower for Aboriginal and Torres Strait Islander people than for non-Indigenous population
- ☒ In 1993 Aboriginal and Torres Strait Islander life expectancy was lower than those for most countries of the world with the exception of some central African countries & India
- ☒ There has been little improvement over the last 10 years

Trainers dialogue These statistics are poignant and relate to a specific group of people.

Whatever your personal views, politics or beliefs, it is vital that each individual makes a personal commitment to collect correct information.

This will enable informed improvements to be made in the area of the health of Aboriginal & Torres Strait Islander peoples.

Estimated Resident Populations 1996



Trainers dialogue Some characteristics of populations can be seen in pictures of populations known as age pyramids.

The shape of the age pyramids reflects the age structure i.e. how many young, old, middle-aged people there are.

The top and bottom pictures are different. Why? There are many more Aboriginal & Torres Strait Islander people in the younger age groups. This reflects that Aboriginal & Torres Strait Islander women have on average more babies.

Look at the older age groups (45 onwards). Here there are less Aboriginal & Torres Strait Islander people and the graph tapers off sharply towards the top.

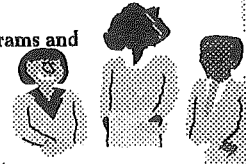
The reason for the sharp decline is higher death rates.

The health disadvantage in Aboriginal & Torres Strait Islander people is reflected in the age pyramid. The decline is evident from about middle age—we are not talking about old people at all.

What happens to the data collected ??

☒ The data is organised and evaluated and becomes information that is used for:

- ⌘ planning for future needs
- ⌘ decisions about spending
- ⌘ lobbying governments or other organisations to act on a problem
- ⌘ tracking over time to see whether programs and services are having the desired effect



Trainers dialogue More than ever before governments, industry and the wider community need information to help them to make decisions to tackle a variety of issues; amongst these is the health and welfare of Aboriginal and Torres Strait Islander peoples.

The information is vital to governments to:-

1. assist in determining policy in relation to Indigenous social issues
2. allocate resources
3. monitor the effectiveness of programs over time
4. plan for future needs

The information is also vital to Aboriginal and/or Torres Strait Islander organisations and some government agencies to:-

1. determine local level of needs for services
2. make a case for funding allocations
3. determine level of local services provided and the quality of these services
4. plan for future local needs

As we can see information derived from data collected in administrative collections is a base for the determination for the development of much of our social infrastructure.

**Why is the Identification of
Aboriginal and Torres Strait Islanders such an
Important Issue?**

- ☒ The capacity of Commonwealth, State and Territory governments to report on issues such as the health status, service delivery and access to services by Aboriginal and/or Torres Strait Islander peoples is totally reliant on -
 - ☒ being able to accurately identify Aboriginal and/or Torres Strait Islander clients in data collections such as hospital separations
- ☒ Without good quality information, decision makers are unable to evaluate access to services and the responsiveness of health services to addressing health care needs

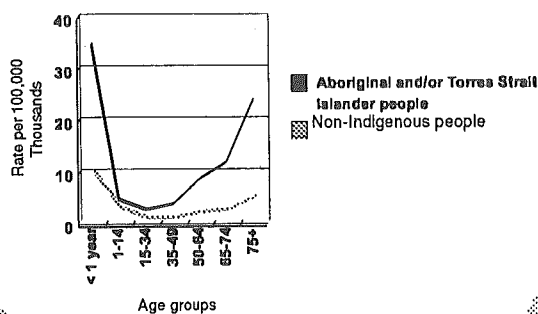
Trainers dialogue In 1994 the Australian Health Ministers' Advisory Council (AHMAC) endorsed the recommendation of national body (NHIMG) responsible for national health information, that the highest national priority was to:

"Work with Aboriginal & Torres Strait Islander peoples to develop a plan to improve all aspects of information about their health and services".

The Aboriginal & Torres Strait Islander Health Information Plan describes the shortcomings in the current data collection, processing and the use of Aboriginal and Torres Strait Islander health information. The major deficiency is the poor quality of Indigenous identification in administrative collections.

What happens to hospital data?

• Hospital separations, respiratory disease, males



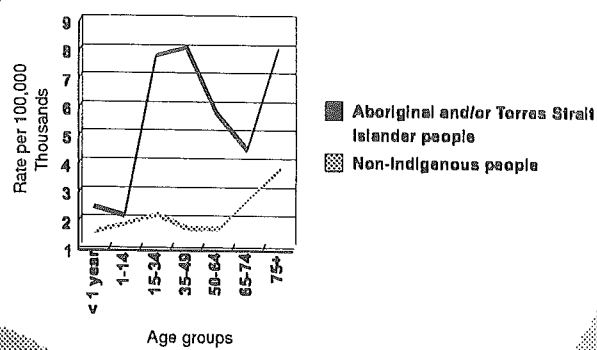
Trainers dialogue Once any information able to identify individuals is removed the information collected while people are in hospital is sent onto the State/Territory health department and then onto the AIHW.

The data are referred to as hospital separations data. A separation (can be regarded as a hospitalisation) occurs when a patient is discharged, is transferred or dies.

The data contains information such as what the person was in hospital for and what treatment they received.

The graph shows that rates of hospital separation for Aboriginal and/or Torres Strait Islander people were higher than for non-Aboriginal and/or Torres Strait Islander people, in all age groups. They were highest by far for children under one, the rates increased again after about age 50.

Hospital separations, injury and poisoning, females



Trainers dialogue This graph show hospitalisation for injury and poisoning for females. As with hospitalisation for respiratory disease the rates are higher in every age group for Aboriginal and Torres Strait Islander people than for non-Indigenous people.

Rates of hospital separations for injury peak at 15-34 and 35-49, after which they remain high.

Previous studies have shown that the numbers of Aboriginal and/or Torres Strait Islander people recorded in hospital data are less than the actual numbers in hospital

	Indigenous in hospital record	Non-Indigenous in hospital record	Unknown in hospital record	Total	% correctly recorded
Indigenous in interview	18	12	3	33	54.5%
Non-Indigenous in interview	2	1424	41	1467	97.0%
Total	20	1436	44	1500	

This is an example of the sort of results hospitals find

Sex correctly recorded 98%
 Date of birth correctly recorded 95%
 Address correctly recorded 82%

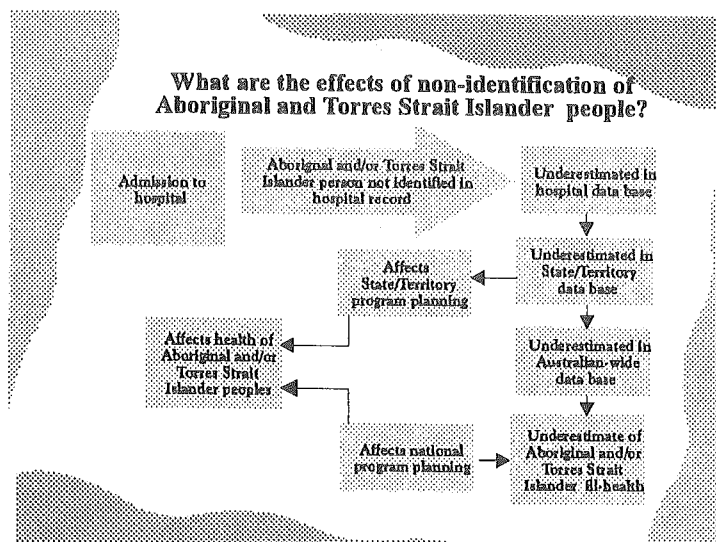
Trainers dialogue

Previous studies have shown that the numbers of Aboriginal and Torres Strait Islander people recorded in hospital data are less than the actual numbers of Aboriginal and Torres Strait Islander people being treated.

These are an example of the sort of results hospitals get. In this example 1500 patients were interviewed. Only 54.5% of the Indigenous patients were correctly recorded in the hospital records. 97% of non-Indigenous people were correctly recorded.

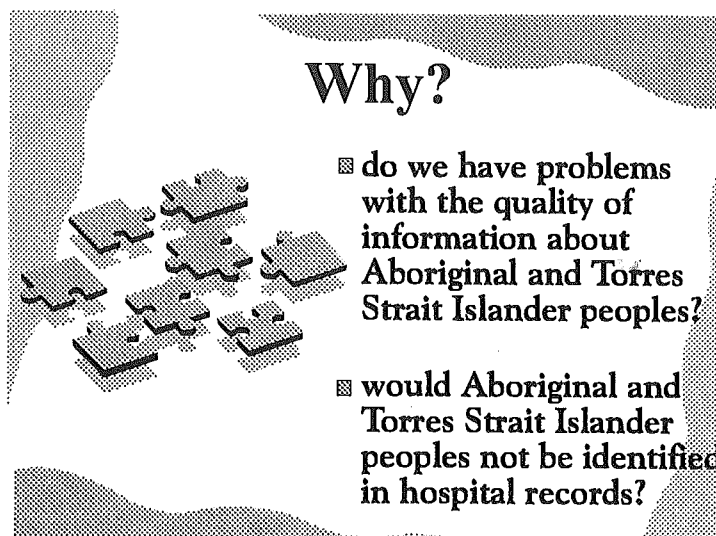
This means that even though the rates of hospitalisation we have seen are very high they are likely to be underestimates of the number of Aboriginal and/or Torres Strait Islander people actually in hospitals.

The study also showed that it was not only a person's Indigenous status that was wrongly recorded in the hospital records.



Trainers dialogue This diagram shows where information from the hospital goes and what affect not recording a persons Indigenous status might have on planning for health services.

Trainer Go through the diagram.



Trainers dialogue Current research indicates that health service personnel are reluctant to ask the Indigenous origin question. Service personnel have also indicated that they do not know why the information collected is important and if queried by clients, are not able to adequately explain why it is collected.

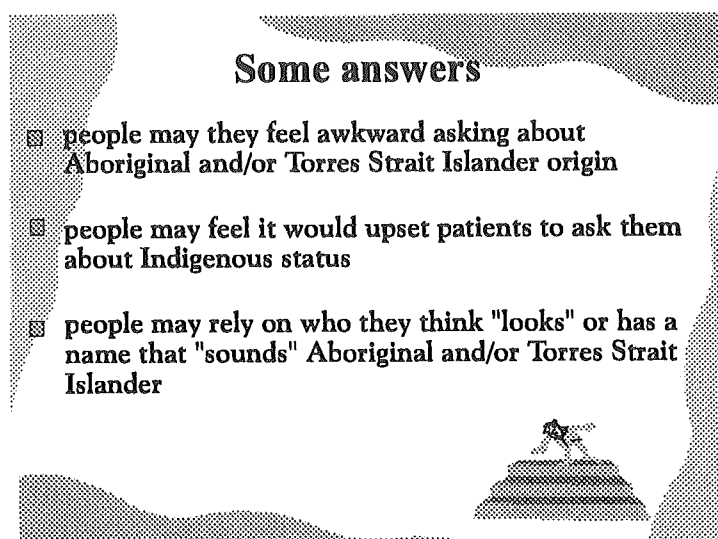
Trainers dialogue *continued*

In contrast, the origin question respondents indicate that they do not mind being asked the Indigenous origin question and that they understand the question but not why it is asked.

Service personnel need to receive appropriate training in asking the Indigenous origin question of their clients and to value the importance of the data they collect.

All people need to understand the importance of answering the question and fears need to be allayed as to negative implications of service delivery and treatment.

General public awareness of the importance of asking and responding to the Indigenous origin question would lead to consistency in data capture.



Trainers Work through the examples on this slide with the group. Use direct questioning techniques to find out if these situations have been experienced by some of them.

What is the definition of an Aboriginal and/or Torres Strait Islander Australian?

- An Aboriginal or Torres Strait Islander person is defined under a Commonwealth Government definition which was accepted by the High Court of Australia in *Commonwealth v Tasmania* (1983)
- This definition states that 'An Aboriginal or Torres Strait Islander is a person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander and is accepted as such by the community in which he or she lives'

Trainers dialogue There are the three components to the definition:

- descent
- self identification
- community acceptance

All three components of the above-mentioned definition should be satisfied for a person to be an Aboriginal or Torres Strait Islander however, it is not possible to collect proof of descent or community acceptance.

It is recognised that community acceptance and descent are assessed in some special government collections however in our collections we are collecting self identification only. If the person chooses to identify as being of Aboriginal or Torres Strait Islander origin, ascertain if they mean Aboriginal or Torres Strait Islander or both and note this down. If the person does not identify as an Aboriginal and/or Torres Strait Islander, then note not of Aboriginal and/or Torres Strait Islander origin.

The origin question

Are you of Aboriginal or Torres Strait Islander origin?

For persons of both Aboriginal and Torres Strait Islander origin, mark both 'Yes' boxes.

- No
- Yes, Aboriginal
- Yes, Torres Strait Islander

Trainers dialogue

This is the question that is used by the Australian Bureau of Statistics on the Census form. The Census is where our estimates of the size of the population including the Aboriginal and Torres Strait Islander population comes from. If the information collected by hospitals is going to be useful it needs to be compared to the population information collected from Census data. For this reason the same question needs to be asked by the health service as is on the Census form.

The proposed operational standard for capturing Aboriginal and/or Torres Strait Islander identification is to question respondents directly wherever possible.

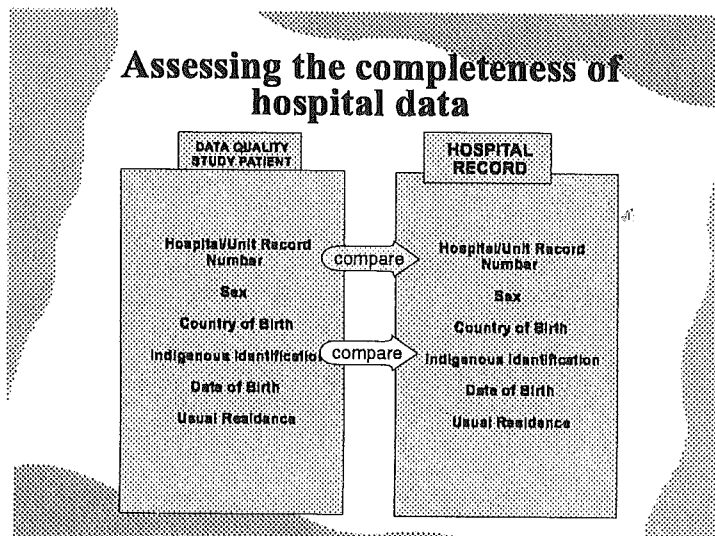
If the person identifies as both Aboriginal & Torres Strait Islander, tick both boxes marked YES.

Assessing the completeness of the information collected by hospitals

- ☑ This method was developed with the assistance of hospitals which participated in the national pilot project conducted in 1998.
- ☑ ATSIHWIU wishes to acknowledge the important role played in this project by:
 - Royal Adelaide Hospital, SA
 - Women's and Children's Hospital, SA
 - Queen Elizabeth Hospital, SA
 - Port Augusta Hospital, SA
 - Coober Pedy Hospital, SA
 - The Canberra Hospital, ACT
 - Calvary Hospital, ACT
 - Royal Darwin Hospital, NT
 - Alice Springs Hospital, NT
 - Gove District Hospital, NT
 - St. Vincent's Hospital, VIC
 - Townsville Hospital, QLD

Trainers dialogue In 1998 twelve hospitals across Australia participated in a pilot project in which the methods used in this study were developed.

These ranged from large city hospitals to small country hospitals, hospitals with a lot of Aboriginal and Torres Strait Islander people and hospitals with very few.



Trainers dialogue Data in the hospital record is compared with the same data collected using a person-to-person interview. This method is based on the assumption that the information collected in the person-to-person interview is correct.

Hospital record numbers (not a person's name) is used to match the two sources of data. Once the HRN or URN is matched, the other items are examined to see how they match.

It is very important to write the HRN/URN down correctly, otherwise there will be no match at all.

Data quality study issues of privacy

Information Privacy Principles as set out in the Privacy Act 1988

- ∴ informing people why information is collected
- ∴ preventing the disclosure of personal information

Trainers dialogue

The notes you have list the Information Privacy Principles. Please read through them and see if you have any questions.

The most important points can be summarised as:

Informing people why the information is being collected—which is done using the patient information sheet keeping personal information confidential and not disclosing any information that may allow a person to be identified.

Patient information sheet

- ☑ It is important that patients understand the purpose of the study
- ☑ Read through the patient information sheet with each patient
- ☑ Answer any questions he or she has
- ☑ Leave the patient information with the patient
- ☑ Ask if they are willing to participate in the study
- ☑ Do not proceed with the questionnaire unless consent has been given

Trainers

Make sure participants have a copy of the patient information sheet to be used by the hospital.

Trainers dialogue

It is very important that the patient understand what the study is about before you ask them if they are willing to participate. You should not proceed if they do not understand what the study is about.

Remember the study is primarily about checking the accuracy of the information that the hospital collects. It is not about checking up on the patient.

The questionnaire

- ❑ Questions should be asked exactly as worded
- ❑ If necessary repeat the question
- ❑ If probes are necessary, it is important that they are neutral
- ❑ Do not guess if the answer is not heard or understood
- ❑ Do not force answers
- ❑ Record the answers accurately

Trainers Make sure participants have a copy of the questionnaire to be used.

Trainers dialogue The reason you are requested to ask the questions as they are worded, is to ensure that everyone carrying out this study does it the same way, and so no guesses or assumptions are made during the interview.

Trainer—go through the questionnaire in detail. Ask participants to suggest possible answers that patients may give, particularly answers that may be difficult.

Beginning the task

- ❑ Obtain lists of patients to be contacted
- ❑ Introduce yourself to the person in charge of the ward, explain you are doing the data quality study and ask permission to conduct interviews
- ❑ Ask if they would identify which patients are well enough, competent enough and available to be asked about participating in the study
- ❑ In the case of a minor (less than 18 years) it will be necessary to seek the consent of the parent or guardian. In the case of an older teenager speak to both the teenager and their parent or guardian



Trainers dialogue The person coordinating the study in the hospital will assist with letting you know which wards you should go to.

It is important to ask permission from the person in charge of the ward, and seek information from them about which patients are available and suitable to be interviewed.



Any further questions?

Thank you for your attendance

Trainers Let the interviewers know who they should contact with any queries.

INFORMATION PRIVACY PROVISIONS

The Privacy Act 1988 sets out eleven Information Principles (IPPs).

- Principle 1 Restricting collection of information to lawful purposes and by fair means.
- Principle 2 Informing people why information is collected.
- Principle 3 Ensuring personal information collected is of good quality and not too intrusive.
- Principle 4 Ensuring proper security of personal information.
- Principle 5 Allowing people to know what personal information is collected and why.
- Principle 6 Allowing people access to their own records.
- Principle 7 Ensuring that personal information stored is of good quality, including allowing people to obtain corrections where it is not.
- Principle 8 Ensuring that personal information is of good quality before using it.
- Principle 9 Ensuring that personal information is relevant before using it.
- Principle 10 Limiting the use of personal information to the purposes for which it was collected.
- Principle 11 Preventing the disclosure of personal information outside the agency.

..... HOSPITAL

DATA QUALITY STUDY—PATIENT INFORMATION

..... Hospital is conducting a study of how accurate the information we collect from patients is.

Information about all the patients in a hospital is important. Information about how old people are, whether people are male or female, where people live and whether people are Aboriginal and/or Torres Strait Islander is needed to plan health services and to monitor the health of the community.

This is **not** a research project on any personal or sensitive issue. If you choose to let us ask you these six questions, **nothing will be asked of you that we should not already have on our records as we do for every patient in this hospital. It is only to CHECK THE ACCURACY OF OUR RECORDS and has nothing to do with the type or quality of care you receive.** Information already collected by the hospitals and information collected for this study, but not your name or patient number, will also be used by the Australian Institute of Health and Welfare for a national report on hospital data quality.

The questions will take about 2 minutes. We would also like to look at your hospital arm bracelet and write down your patient number. We will check this against the records we already have. We don't need to ask your name. This information will not be used to identify any person.

The care you receive while in hospital will not change if you agree to participate in the study.

You can say no. There will be no difference to the care you receive if you say no.

This project has been approved by the Ethics Committee of

For further information about this project contact



.....HOSPITAL

DATA QUALITY STUDY

.....Hospital would like to know that the information that is collected on admission to the hospital is the right information. To do this, we would like to ask you some short questions.

If you agree to be part of this, we do not need to know, nor will we use your name.

Thank you

This project has been approved by the Ethic Committee of
Information already collected by the hospital and information collected for this study, but not your name or patient number, will also be used by the Australian Institute of Health and Welfare for a national report on hospital data quality.

For more information about this project, contact