

Quality of Victorian Home and Community Care Aboriginal Client Data

An analysis of the quality of Victorian HACC Aboriginal client data and a strategy for data quality improvement

January 2008



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Executive summary

This report examines the quality of Aboriginal client data in Victoria's Home and Community Care (HACC) program in 2005-06, and presents a strategy for data quality improvement in the HACC minimum data set (MDS). Accurate identification of Aboriginal people as clients of the HACC Program is important because it enables measurement of the effectiveness of the program in meeting the needs of the Aboriginal population.

Findings

Although the HACC MDS has become a robust data collection in Victoria, there is a significant level of poor quality data on Aboriginal status. Analysis of the data for 2005-06 and earlier years has shown that some Aboriginal clients were not identified as Aboriginal (an under-count), while some non-Aboriginal clients were identified as Aboriginal (an over-count).

Patterns of incorrect identification suggest that the over-count of Aboriginal clients was higher than the under-count, and that generic agencies were mostly responsible.

Missing data

Some 8 per cent of records from generic HACC agencies had missing data for the Aboriginal status item. These records pertained to nearly 18,000 clients. A group of 48 agencies accounted for some 63 per cent of all records with missing data on this item.

The service types with the highest proportion of missing data were nursing at centre (18.2 per cent), allied health (14.8 per cent), volunteer social support (14.3 per cent) and planned activity group (12.0 per cent). The lowest rates of missing data were for assessment (2.7 per cent) and home care (3.2 per cent).

The over-count

Generic HACC agencies mis-coded a small proportion of their total clients as Aboriginal, mainly because of data entry errors. In this analysis,

suspect records were identified in three ways:

- ▶ inconsistent Aboriginal identification on records pertaining to the same client submitted by different agencies
- ▶ clients recorded as Aboriginal but born overseas and/or speaking a language other than English
- ▶ clients aged 75 years or more (that is, agencies reporting an aggregate number of Aboriginal clients aged 75-plus that is significantly larger than the Census would suggest).

Almost 400 clients were inconsistently recorded as Aboriginal or not Aboriginal by different agencies. Analysis showed that the majority of these were unlikely to be Aboriginal.

At least 550 clients were miscoded as Aboriginal, which was 21 per cent of all 2624 clients recorded as Aboriginal in 2005-06.

Victoria had a total of around 229,000 HACC clients in 2005-06. Since the proportion of such miscoded records is generally very small for any single agency (much less than 1 per cent of clients), the error tends to remain undetected. However, when summed at the state-wide level, the number of these records is quite high compared to the number of Aboriginal clients reported by Aboriginal community controlled organisations (ACCOs). These organisations reported around 900 Aboriginal clients in 2005-06.

The under-count

About 350 Aboriginal clients were missing from the total count. They included:

- ▶ an estimated 157 Aboriginal clients attending generic agencies who were consistently miscoded as non-Aboriginal in 2005-06 (according to patterns in the data)
- ▶ about 100 Aboriginal clients attending Aboriginal organisations that did not submit complete data to the HACC MDS; these organisations failed to transmit files in one or more quarters during 2005-06.

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It is likely that some generic agencies do not routinely ask the Aboriginal status question and use computers that default to non-Aboriginal or 'not stated'. Also, some Aboriginal clients may prefer not to identify as Aboriginal when asked by some agencies.

Adjusted count: proposed method

The previous method recognised clients as Aboriginal if identified as such on at least one occasion. This method produced a count of 2,624 clients in 2005-06.

It is proposed that a new method be adopted. It would apply the following steps:

- ▶ Clean the data by excluding anonymous unlinked client records.
- ▶ Re-classify records as Aboriginal status 'unknown' if they were submitted by generic agencies with status as 'Aboriginal' and country of birth as 'overseas'.
- ▶ In the case of Australian-born clients, treat records as 'Aboriginal' if the client was consistently recorded as Aboriginal by an Aboriginal agency (878) or a generic provider (1,069) or both (120) in quarterly transmissions.
- ▶ Treat records as 'Aboriginal' if the client was identified as Aboriginal by an Aboriginal organisation but as non-Aboriginal by a generic agency that dealt with the same client (25 clients).

This method produces an adjusted count of 2,092 Aboriginal HACC clients for 2005-06. (The numbers in brackets show the effect of the adjustments.)

It should be noted that there were another 158 suspect records in which the client was aged 75-plus and recorded as 'Aboriginal' by a generic agency. Since there are many actual Aboriginal

clients aged 75-plus, it would not be legitimate to re-classify individual records as non-Aboriginal merely on the basis that the total number of such records is unreasonably high. Instead, it is recommended that these records be queried with the relevant agency as part of the data quality improvement strategy.

Aboriginal data quality improvement strategy

The quality of Aboriginal client data was stable between 2003-04 and 2005-06. To reduce the level of poor quality data, a set of targeted actions are recommended:

1. The Department of Human Services should provide feedback to specific agencies on their Aboriginal client data quality problems, via regional staff.
2. Warning flags should be added to the automated process in Victoria's HACC data repository to inform agencies of records they submit for apparent Aboriginal clients who were born overseas.
3. Individual generic agencies should be asked to confirm the Aboriginal status of apparently Aboriginal clients aged 70 years or more.
4. Agencies should be asked to check records that are inconsistently identified as Aboriginal in transmissions from another agency.
5. Departmental regional staff should continue to support Aboriginal agencies to maintain full participation in the HACC MDS.
6. Agency MDS training should include material on how to ask the Aboriginal status question. Training should be offered in the first place to agencies that have a high rate of missing data on this item.

Introduction

This report is about the quality of Aboriginal client data in the HACC MDS. It presents an analysis of data quality and a strategy for data quality improvement.

Accurate identification of Aboriginal clients is important because it enables measurement of the effectiveness of the HACC program in meeting the needs of the Aboriginal population. The quality of data on Aboriginal clients collected by most health and welfare data sets has been considered problematic since the 1980s.

Two recent publications by the Australian Institute of Health and Welfare (AIHW 2004 and 2007) have assessed the quality of Indigenous identification in the national HACC MDS. They dealt with three main data quality issues:

- missing Indigenous identification
- inconsistency of Indigenous identification reported for linked client records
- very high and apparently anomalous usage rates by Indigenous people in specific age groups.

The AIHW 2004 report recommended that jurisdictions assist in improving data quality by:

- addressing the factors leading to missing data, particularly for certain service types
- introducing real-time monitoring of the rate of identification at each quarterly data submission
- developing and implementing a key performance indicator relating to Indigenous peoples' access to HACC, which will focus attention on data quality in this area
- investigating and addressing any remaining area of very high usage rates for specific age groups for Indigenous people in the HACC data.

The HACC MDS

The HACC MDS is a national data collection of information about individual HACC clients, their circumstances and the types and level of assistance they receive. The HACC MDS contains a statistical

linkage key (SLK), which enables the analyst to link all records pertaining to the same individual client. The SLK allows a count of the number of individual HACC clients.

Previous analyses of the Victorian HACC MDS by the department used two different methods of recognising Aboriginal clients. In 2002-03, if a matched client record showed that a person had been identified as Aboriginal on one occasion and non-Aboriginal on another, the item on Indigenous status was treated as missing data. Due to concern that this rule was overly conservative, the rule was changed. In the department's analyses of the 2003-04 dataset, clients were classified as Aboriginal if identified as such on at least one occasion. This had the side effect of increasing the overall count of Aboriginal clients. However, other data quality problems have since become apparent. In particular, analysis shows very high and apparently impossible usage rates by Aboriginal people aged 75 years or more.

Method of analysis

The analysis seeks to measure the quality of Aboriginal client data and identify patterns of over-counting and undercounting of Aboriginal clients. The analysis focuses on discrepancies between Aboriginal identification and country of birth, missing Aboriginal identification, inconsistency of Aboriginal identification on multiple unlinked client records, and age-specific HACC usage rates for Aboriginal clients. Agency non-participation in the HACC MDS is also measured.

Terms used

For the purposes of this document 'Aboriginal' refers to people who identify as Aboriginal, Torres Strait Islander, or both Aboriginal and Torres Strait Islander. Aboriginal organisations are those that receive HACC funding to provide services to the Aboriginal community; they are also called Aboriginal

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community controlled organisations, and there were about 27 in 2005-06. 'Generic' organisations refer to those that are funded to provide services to a diverse cultural population including culturally and linguistically diverse (CALD) and Aboriginal people. On this definition, most of the 470 HACC providers are generic. A few generic organisations receive HACC funding which is specifically targeted on Aboriginal people.

The terms 'linked' and 'matched' records refer to the fact that data analysts can link together two or more de-identified records that have the same SLK the assumption is that these records probably refer to the same person. The records may have been submitted by the same agency in successive quarters or by different agencies.

Analysis of data quality

This section assesses the quality and completeness of Victorian HACC Aboriginal client data for 2005-06, 2004-05 and 2003-04. It exposes patterns of wrong identification and missing identification of Aboriginal and non-Aboriginal clients. The extent of agency non-participation in the HACC MDS is also measured.

Exclusion of anonymous records

The HACC MDS contains an SLK which enables linkage of two or more client records that probably pertain to the same person. 'Anonymous' records in Victoria are defined as records that substitute non-alphabetic characters for some of the required letters of name. These anonymous records cannot be linked across quarters or linked to records generated by other agencies, and have therefore been excluded from all analysis in this report. In 2005-06, 4.1 per cent (29,860) of HACC MDS unlinked records were anonymous. This represents a slight drop since 2004-05 (4.9 per cent, 34,669).

Number of clients assisted by Aboriginal organisations

In the MDS, quarterly data is collected from all funded agencies (or their outlets) on all clients who received a HACC service during the quarter. In a statewide dataset spanning 12 months, a single client will thus normally be represented by several records submitted by one or more agencies. When records are matched via the SLK, an *unduplicated count* of individual clients can be obtained.

As shown by Table 1, a total of 6,314 records were submitted by Aboriginal organisations over the three-year period of analysis. Matching of these records using the SLK identified 1,677 individual clients.

Table 1. Clients of Aboriginal agencies by year, Victoria (2003-04, 2004-05 & 2005-06)

Year	Clients	Records
2003-04	788	1,746
2004-05	823	1,999
2005-06	1,020	2,569
2003-04, 2004-05 & 2005-06	1,677	6,314

Source: HACC MDS 2003-04, 2004-05 & 2005-06

Quality of the Statistical Linkage Key

The quality of SLK data on records submitted by Aboriginal agencies was better than records from generic agencies. As shown by Table 2, the proportion of records from Aboriginal agencies (0.2 per cent) that were anonymous due to missing SLK data was less than generic agencies (3.4 per cent).

Table 2. HACC unlinked client records: Validity of SLK by Aboriginal and generic agencies, Victoria (2005-06)

Agency type	Valid		Anonymous		Total	
	Number of Records	Per cent	Number of Records	Per cent	Number of Records	Per cent
Generic	1,983,863	96.6	69,777	3.4	2,053,640	100.0
Aboriginal	7,147	99.8	11	0.2	7,158	100.0

Source: HACC MDS 2003-04, 2004-05, 2005-06

Agency non-participation in the HACC MDS

During the period of analysis, a number of HACC agencies did not participate in the HACC MDS. Two of the 27 agencies did not submit any records in 2005-06. Intermittent participation was common among Aboriginal agencies. Fifty-three per cent of participating Aboriginal agencies submitted few or no records for a funded service type during one or more quarters in 2005-06. Records for home care, personal care and respite were most commonly not submitted.

Under-count due to agency non-reporting: about 100

The number of Aboriginal clients not included in the HACC MDS due to agency non-participation is estimated to be no more than 100. This is four per cent of clients recorded as Aboriginal on one or more occasion.

Staff turnover appears to be a cause of loss of continuity in data collection. It is recommended that work supporting Aboriginal agencies to increase participation in the HACC MDS be continued by responsible DHS staff.

Missing SLK: date of birth

A valid SLK requires three data items: certain letters of name, date of birth, and sex. Analysis of Aboriginal records showed good quality data for sex, but poorer quality for date of birth. Records submitted by Aboriginal organisations were particularly poor. Six per cent of Aboriginal and three per cent of non-Aboriginal records submitted by ACCOs had an invalid date of birth. One agency accounted for 126 of the 160 records missing date of birth. Seventy-seven per cent of records submitted by this organisation did not provide valid information about the age of the client. The age was usually invalid because the year of birth was listed as 1900.

It is recommended that regional staff look into options with this organisation to improve data quality. If a client does not know their date of birth, the procedure recommended in the HACC MDS Guidelines is to estimate it and indicate that this has been done, using the date of birth estimate flag.

Discrepancies between Aboriginal identification & country of birth

This analysis assumes that Aboriginal status is closely associated with Australia as the country of birth. In 2005-06, generic HACC agencies submitted some apparently anomalous data: 6 per cent of records of clients whose Aboriginal status was recorded as Aboriginal (361 records) were described as born overseas. By comparison, Aboriginal agencies had almost no records of people listed as Aboriginal and born overseas (0.1 per cent, 2 records only). As shown by Table 3, this pattern was consistent in 2004-05 and 2003-04 data.

Table 3. HACC Aboriginal unlinked client records: provider type by country of birth, Victoria (2005-06, 2004-05 & 2003-04)

Year	Country of Birth	Aboriginal HACC Agencies		Generic HACC Agencies	
		Number of Records where Indigenous status = Aboriginal	Per cent	Number of Records where Indigenous status = Aboriginal	Per cent
2003-04	Australia	1,738	100.0	2,827	85.3
	Overseas	0	0.0	389	11.7
	Not Stated	0	0.0	98	3.0
	Total	1,738	100.0	3,314	100.0
2004-05	Australia	1997	99.9	3,562	88.6
	Overseas	**2	0.1	411	10.2
	Not Stated		0.0	49	1.2
	Total	1999	100.0	4,022	100.0
2005-06	Australia	2,557	99.9	5,947	92.2
	Overseas	*2	0.1	361	5.6
	Not Stated	0	0	137	2.1
	Total	2,559	100.0	6,447	100.0

Source: Victorian HACC MDS 2005-06, 2004-05 & 2003-04.

*Austria, **Papua New Guinea

Taking the 363 records with apparent discrepancies between Aboriginal status and country of birth, a cross check was undertaken of country of birth and language spoken. This revealed that, in general, preferred language was consistent with country of birth (see Table 4). Sixty-seven per cent of records appeared to show consistency between the non-Australian country of birth and preferred language. For example, 28 records showed Greece as the country of birth and 26 showed Greek as the preferred language.

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This pattern strongly suggests that unlinked client records describing the client as Aboriginal and born overseas were wrongly coded on Aboriginal status.

Table 4. HACC unlinked client records with apparent discrepancies between Aboriginal identification and country of birth: country of birth by preferred language, Victoria (2005-06)

Number of Records	Country of Birth as Stated	Preferred Language as Stated	Number of Records
7	China	Mandarin, Cantonese	8
6	Croatia	Croatian	2
3	Denmark	Danish	2
106	England, USA, NZ, Ireland, Scotland	English	195
3	Fiji	Fijian	3
18	Germany	German	4
28	Greece	Greek	26
6	Hungary	Slovene	2
68	Italy	Italian	41
5	Laos	Lao	5
14	Lebanon, Egypt, Iraq	Arabic including Lebanese	6
11	Malta	Maltese	4
9	Poland	Polish	9
2	Portugal	Portuguese	2
5	Russian Federation	Russian	11
4	Spain	Spanish	4
8	Tonga	Tongan	8
2	Turkey	Turkish	1
6	Viet Nam	Vietnamese	3
4	Yugoslavia Federal Republic of	Serbian	8
48	Other	Other	19
363	Total	Total	363

Source: Victorian HACC MDS 2005-06

Age profile of anomalous records

An age check was undertaken on 363 unlinked client records with apparent discrepancies between Aboriginal status and country of birth. As shown by Table 5, 57 per cent of these records listed the client as aged 75 years or more. This is consistent with the age profile shown by non-Aboriginal unlinked client records. It is further evidence that the clients were not Aboriginal.

Table 5. HACC unlinked client records with apparent discrepancies between Aboriginal identification and country of birth: age group, Victoria (2005-06)

Age Group	Number of Records	Per cent
25-34	8	2
35-45	10	3
45-54	17	5
55-64	33	9
65-74	88	24
75-100	207	57
Total	363	100

Source: HACC MDS 2005-06

Agency type of anomalous records

Table 6 shows the agency type of 363 unlinked client records with apparent discrepancies between Aboriginal identification and country of birth. The two records belonging to an Aboriginal agency described the client as born in 'Austria', clearly an error for Australia. As shown, local government and the Royal District Nursing Service submitted half of these records.

Table 6. HACC unlinked client records with apparent discrepancies between Aboriginal identification and country of birth: agency type, Victoria (2005-06)

Agency type	Number of Records	Per cent
Local government	98	27
Community Health	60	17
Hospital	34	9
Bush Nursing	4	1
Aboriginal specific	2	1
Ethno-specific	49	13
Other Non-government	26	7
RDNS	90	25
Total	363	100

Source: Victorian HACC MDS 2005-06

Discrepancy with Aboriginal language

In the case of one particular community health service, a high proportion of records (80 per cent, or 5,537 records) listed an Aboriginal language as the preferred language. However, just 1 per cent (54) of unlinked client records from this agency identified the client as Aboriginal. It is recommended that the department ask the agency to check these records.

Conclusion: discrepancies involving country of birth

There are apparent discrepancies between the listed country of birth, preferred language and Aboriginal status on a significant number of records submitted by generic agencies.

Aboriginal agencies showed few or no such discrepancies, compared to generic agencies. Between 2003-04 and 2005-06, all but four records that listed the client as Aboriginal were for people born in Australia. The exceptions were Austria (2 records, certainly an error for Australia) and Papua New Guinea (2 records).

In 2005-06, generic agencies submitted 361 records (172 clients) claiming to describe Aboriginal clients born overseas. Of these records 67 per cent showed consistency between the non-Australian country of birth and the preferred language (e.g. born in Greece, speaks Greek). The age profile of this group showed that the majority (57 per cent) of records described clients aged 75 years or more.

These patterns strongly suggest that unlinked records that list the client as Aboriginal and born overseas were coding errors, and that the Aboriginal status on these records should be altered. It is recognised that some Aboriginal and/or Torres Strait Islander persons are born overseas. However, the large number of client records in this category suggests that they should not be categorised as Aboriginal clients, unless confirmed by an Aboriginal organisation.

The recommended method of dealing with discrepancies between Aboriginal status and country of birth is to change the Aboriginal status of these records to 'Unknown', unless the client is also identified as Aboriginal by an Aboriginal organisation (one client in 2005-06).

Meanwhile it is recommended that these records be referred back to the individual agencies for checking.

Missing data on Indigenous status

Missing data on Aboriginal status is an indication of the proportion of clients who are not being asked the required question on Aboriginal status, and is therefore an indicator of data quality. As shown by Table 7, between 2003-04 and 2005-06 the rate of missing responses to the Aboriginal identification question was stable, at 8 per cent.

Victoria recorded a lower proportion of missing responses (8.1 per cent) than the national average (10.4 per cent). The Victorian response rate was poorer than the Northern Territory (3.9 per cent), New South Wales (5.5 per cent), Western Australia (6.1 per cent) and ACT (6.6 per cent), but better than Tasmania (9.1 per cent), South Australia (14.3 per cent), and Queensland (20.6 per cent) (AIHW 2007, Table 3.3).

Table 7. HACC unlinked client records: Aboriginal identification, Victoria (2003-04, 2004-05, 2005-06)

Aboriginal identification	2003-04		2004-05		2005-06	
	Number of Records	Per cent	Number of Records	Per cent	Number of Records	Per cent
Aboriginal	5,052	0.8	6,021	0.9	6,447	0.9
Non-Aboriginal	566,177	91.0	608,950	91.2	637,109	90.9
Missing	51,262	8.2	52,932	7.9	57,060	8.1
Total	622,491	100.0	667,903	100.0	700,616	100.0

Source: Victorian HACC MDS 2005-06, 2004-05 & 2003-04.

Missing data by service type

The level of missing data on Aboriginal status varied by the type of service provided. As shown by Table 8, the service types with the highest proportion of missing data were: nursing at centre (18.2 per cent), allied health (14.8 per cent), volunteer social support (14.3 per cent) and planned activity group (12.0 per cent). The lowest rates of missing data were for assessment (2.7 per cent), home care (3.2 per cent) and property maintenance (3.5 per cent). A similar pattern was recorded in the 2004-05 Victorian data and nationally (AIHW 2007, Table 3.6).

The rate of missing data may reflect the nature of the service type. For example, assessment providers would be expected to regard the Aboriginal status of the client as highly relevant information. On the other hand, providers of planned activity groups may perceive Aboriginal status as having little importance for the support provided.

Table 8. HACC unlinked client records, Aboriginal identification by service type, Victoria (2005-06)

Service type	Aboriginal identification				Per cent Missing
	Aboriginal	Non-Aboriginal	Missing	Total	
Assessment	792	92,851	2,554	96,197	2.7
Home care	1,482	233,130	7,760	242,372	3.2
Property maintenance	1,284	61,759	2,260	65,303	3.5
Case management	327	11,236	514	12,077	4.3
Home meals	634	64,010	2,895	67,539	4.3
Respite care	154	25,693	1,365	27,212	5.0
Personal care	377	51,001	3,389	54,767	6.2
Home nursing	1,094	90,051	6,815	97,960	7.0
Centre meals	74	8,904	907	9,885	9.2
Planned activity group	1,705	74,774	10,435	86,914	12.0
Volunteer social support	407	29,519	5,005	34,931	14.3
Allied health	1,068	99,924	17,491	118,483	14.8
Nursing at centre	373	22,884	5,159	28,416	18.2
All records	6,447	637,109	57,060	700,616	8.1

Source: Victorian HACC MDS 2005-06

Missing data by agency type

Aboriginal agencies submitted the most complete data on Aboriginal status. Only 3 per cent of unlinked client records from Aboriginal agencies were missing Aboriginal status data, compared to 8 per cent from generic HACC agencies.

Closer examination identified a small proportion (8 per cent, 48) of generic HACC agencies that accounted for the bulk of the missing data. In 2005-06, these 48 agencies submitted 26 per cent of all client records, but 63 per cent of records with missing Aboriginal status data. On average, 20 per cent of records from these 48 agencies had missing Aboriginal status data, compared to 4 per cent for all other agencies. This pattern suggests that some generic agencies are not routinely asking the Aboriginal status question and have an electronic default to 'Not Stated'.

Some 40 agencies submitted data files in which 50 per cent or more of records had missing data on Aboriginal status. In the case of five of these agencies, 100 per cent of records were missing this item. It can be surmised that these agencies did not ask the Aboriginal status question.

It is recommended that feedback be given to agencies that submit either a high number (greater than 350) or proportion (less than 50 per cent) of records missing Aboriginal status data. Staff may need training in how to ask the Aboriginal status question appropriately, in order to improve response rates to the question.

Table 11. HACC unlinked client records: Agencies with 50 per cent or more records with missing Aboriginal status data, Victoria (2005-06)

	No. records missing Aboriginal status	Per cent of records missing Aboriginal status	Total records submitted
40 agencies with 50 per cent or more missing data on Aboriginal status	17,116	73	23,306
Other agencies with missing data	39,943	6	677,309
Total agencies with missing data	57,059	8	700,615

Source: Victorian HACC MDS 2005-06

Conclusion: missing data

Three per cent of unlinked client records from Aboriginal agencies were missing Aboriginal status data, compared to 8 per cent from generic HACC agencies. Forty-eight generic agencies were responsible for the majority of records (63 per cent) missing Aboriginal status data. The rate of missing data for these HACC agencies was 20 per cent, compared to 4 per cent for other HACC agencies. These 48 agencies were responsible for the high level of missing data for allied health (76 per cent of records), nursing at centre (86 per cent), home care (78 per cent) and home nursing (58 per cent). Clearly, if these agencies addressed their data recording problems the quality of the HACC MDS Aboriginal status data would significantly improve.

Consistency of Aboriginal identification

For the purpose of this analysis, clients were categorised by the consistency of Aboriginal identification on their unlinked records. Clients were categorised into one of four groups:

- ▶ consistent *Aboriginal* identification
- ▶ consistent *non-Aboriginal* identification
- ▶ consistently *missing* identification
- ▶ *inconsistent* identification.

A client with a *consistent Aboriginal identification* was defined as a client recorded as Aboriginal on all occasions (that is, on all records with the same SLK). Also defined as consistently Aboriginal were clients identified as Aboriginal on some records but with this item missing on other records.

An *inconsistent* identification was defined as a client identified as Aboriginal and non-Aboriginal on multiple unlinked client records.

A client with *consistently missing* identification had the item missing on all unlinked records.

Table 12 presents clients by consistency of Aboriginal identification for 2003-04, 2004-05 and 2005-06. In 2005-06, around 400 clients had an *inconsistent* record (0.2 per cent). The number was fairly stable at around 400 clients over the three-year period. If recognised as Aboriginal, this would add 15 per cent to the total number of clients recorded as Aboriginal.

In 2005-06, *no information* was recorded on the Aboriginal status of nearly 18,000 clients (7.8 per cent). It can be assumed that this group were not asked the Aboriginal status question, and therefore it is likely to include some Aboriginal clients.

Table 12. HACC clients: consistency of Aboriginal identification, Victoria (2003-04, 2004-05 & 2005-06)

Consistency of Aboriginal Identification	2005-06		2004-05		2003-04	
	Number of Clients	Per cent	Number of Clients	Per cent	Number of Clients	Per cent
Consistent Aboriginal identification	2,067	0.9	1,904	0.9	1,743	0.8
Consistent non-Aboriginal identification	208,690	91.1	203,294	91.4	196,875	91.0
Consistent missing identification	17,968	7.8	16,793	7.6	17,282	8.0
Inconsistent identification	403	0.2	402	0.2	357	0.2
Total	229,128	100.0	222,393	100.0	216,257	100.0

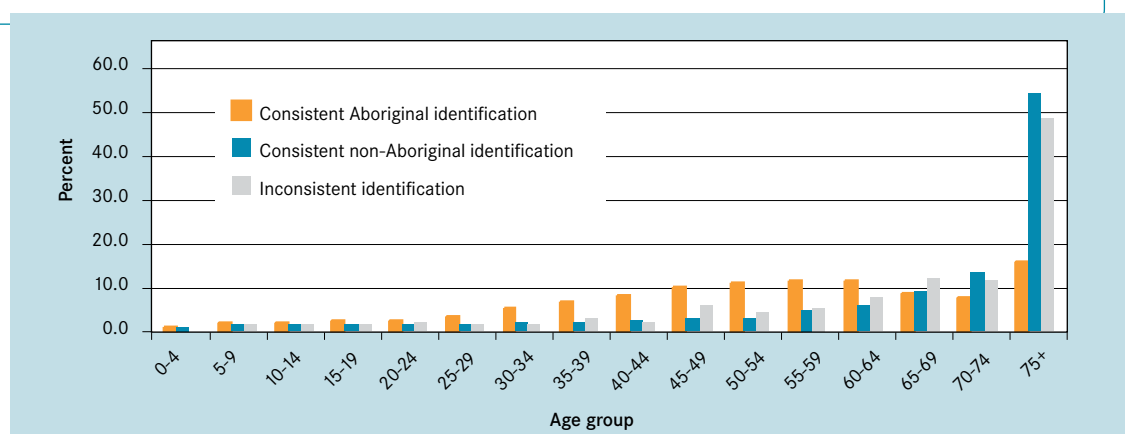
Source: HACC MDS 2005-06, 2004-05 & 2003-04

Note: 1. Records with Aboriginal identification and overseas country of birth were classified as Aboriginal identification unknown (2005-06: no. 330, 2004-05: no. 357, 2003-04: no. 338).

Comparison of client profiles

A profile of clients by consistency of Aboriginal identification is presented by figures 1 to 4. As shown, the age, income and accommodation profiles of clients with an inconsistent identification were similar to clients with consistent non-Aboriginal identification. On the other hand, the majority (60 per cent) of clients with an inconsistent identification lived in rural and regional Victoria, a similar pattern to clients with a consistent Aboriginal identification (65 per cent). The place of residence of clients with an inconsistent identification will generally relate to the location of the agency entering the data. Sixty-one per cent of these agencies were located in rural and regional Victoria. Overall, the comparison of profiles suggests that *most clients with an inconsistent identification were actually non-Aboriginal clients*.

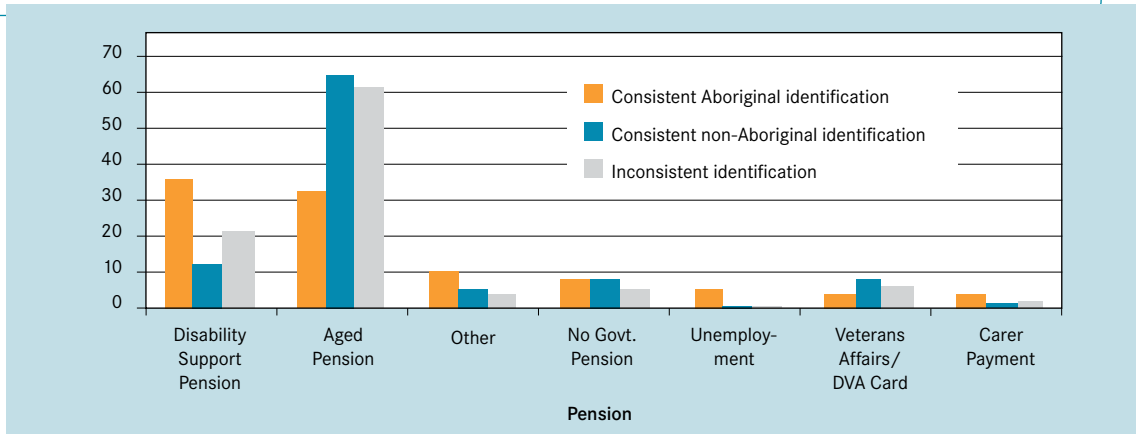
Figure 1. HACC clients: consistency of Aboriginal identification by age group, per cent, Victoria (2005-06)



Source: Victorian HACC MDS 2005-06

Note: 1. Clients with no responses for date of birth were excluded. 2. Per centagess add to 100.

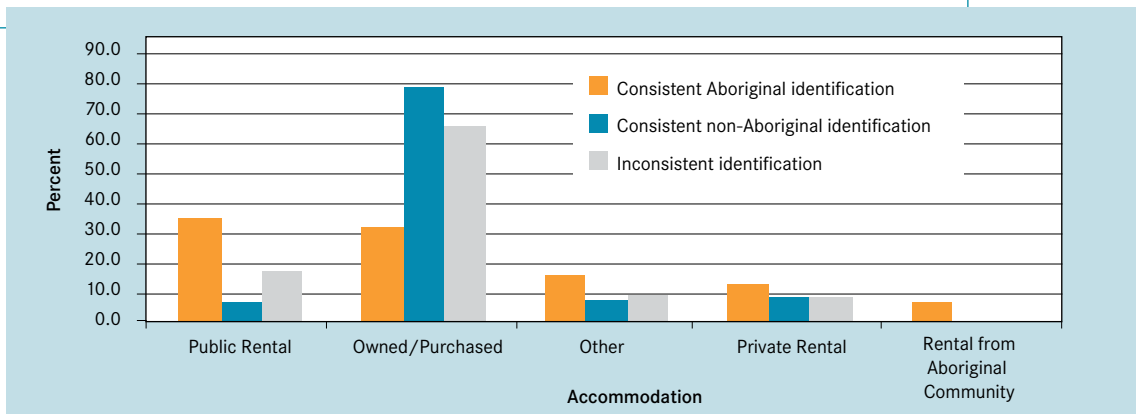
Figure 2. HACC clients: consistency of Aboriginal identification by pension, per cent, Victoria (2005-06)



Source: Victorian HACC MDS 2005-06

Note: 1. Clients with no responses to pension type were excluded. 2. Per centages add to 100.

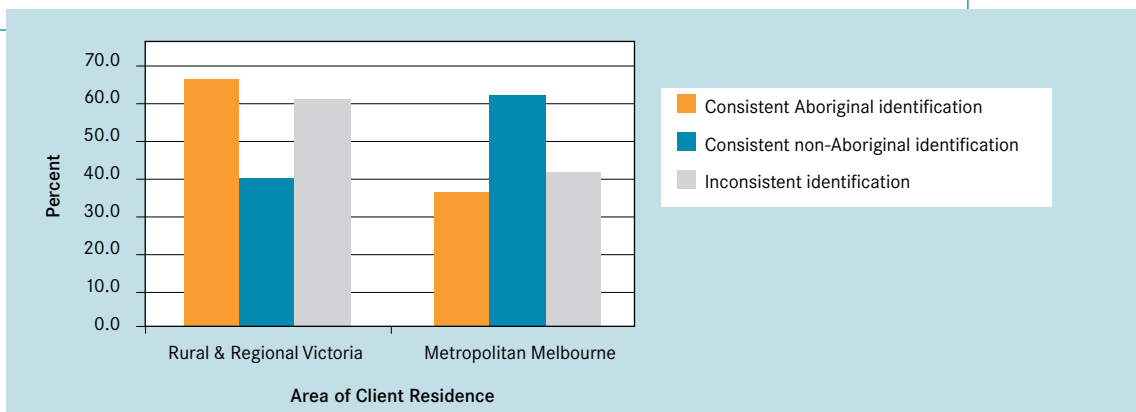
Figure 3. HACC clients: consistency of Aboriginal identification by accommodation type, per cent, Victoria (2005-06)



Source: Victorian HACC MDS 2005-06

Note: 1. Clients with no responses to accommodation type were excluded. 2. Per centages add to 100.

Figure 4. HACC clients: consistency of Aboriginal identification by area of client residence, per cent, Victoria (2005-06)



Source: Victorian HACC MDS 2005-06

Note: 1. Clients with no responses to LGA of residence were excluded. 2. Per centages add to 100.

Consistency of Aboriginal identification by agency

Almost all clients (398) with an inconsistent identification were recorded differently *by different HACC agencies*. Just five clients were recorded differently by the same organisation.

Table 13 presents consistency of Aboriginal identification by provider type. Clients were categorised by the types of organisation they received a HACC service from:

- aboriginal providers only
- both Aboriginal and generic providers
- generic providers only.

As shown, most clients with a consistent Aboriginal identification were assisted by generic HACC providers only (1069 people or 52 per cent). Forty-two per cent were assisted by Aboriginal HACC providers only, and the remaining 120 people (6 per cent) were assisted by both Aboriginal and generic HACC providers.

The majority (92 per cent) of clients with inconsistent records were assisted by generic HACC providers only. Only one record pertained to a client with an inconsistent identification who had received services from Aboriginal agencies only. This pattern indicates that the quality of Aboriginal status data recorded by generic agencies is poorer than that of Aboriginal agencies. Note that this is only an indication of the quality of submitted records and does not refer to HACC MDS participation by Aboriginal agencies.

Table 13. HACC clients: consistency of Aboriginal identification by Aboriginal and generic HACC providers, Victoria (2005-06)

HACC Provider Type	Consistent Aboriginal identification		Consistent non-Aboriginal identification		Consistent missing identification		Inconsistent identification		Total	
	Number of Clients	per cent	Number of Clients	per cent	Number of Clients	per cent	Number of Clients	per cent	Number of Clients	per cent
Aboriginal provider only	878	42	85	0	32	0	1	0	995	1
Both	120	6	10	0	0	0	31	8	162	0
Generic provider only	1,069	52	208,595	100	17,936	100	371	92	227,971	99
Total	2,067	100	208,690	100	17,968	100	403	100	229,128	100

Source: HACC MDS 2005-06

Aboriginal status of clients with inconsistent identification

Analysis suggests that the majority of clients with an inconsistent identification were actually *non-Aboriginal*. By contrast, clients identified as Aboriginal by an Aboriginal organisation were very likely to have been correctly identified. It is understood that most HACC-funded Aboriginal organisations require clients to formally establish their Aboriginality, or that of a family member, in order to access services. Generic HACC providers do not use such protocols to identify Aboriginal clients. It can therefore be assumed that clients with an inconsistent identification were non-Aboriginal, unless identified as Aboriginal by an Aboriginal organisation.

In 2005-06, 378 of the 403 clients with an inconsistent identification were not identified as Aboriginal by an Aboriginal agency. The remaining 25 clients with an inconsistent identification were identified as Aboriginal by an Aboriginal agency.

Four clients with an inconsistent identification were recorded as non-Aboriginal by an Aboriginal agency but as Aboriginal by generic agencies.

Taking the 25 clients who were confirmed as Aboriginal by an Aboriginal agency, 63 unlinked records listed these clients as non-Aboriginal. These records were submitted by generic agencies. It is assumed that the non-Aboriginal identification of these clients was wrong. As shown by Table 14, eighty-three per cent of the unlinked client records with an incorrect non-Aboriginal identification were submitted by hospitals, local governments and community health centres. This may be due to an electronic default to non-Aboriginal or may be evidence that some Aboriginal clients prefer not to identify as Aboriginal to some generic providers.

Table 14. HACC unlinked records that mis-identified the client as non-Aboriginal: by agency type, Victoria (2005-06)

Agency type	Number of Records	Per cent
Local Government	13	21
Community Health Centres	12	19
Hospital	27	43
Royal District Nursing Service	2	3
Other	9	14
Total	63	100

Source: HACC MDS 2005-06

Note: The client was identified as non-Aboriginal on the above records and had an inconsistent identification, but was confirmed as Aboriginal by an Aboriginal agency.

Table 15 presents 760 unlinked records that identified the client as Aboriginal, where the clients had an inconsistent identification and were *NOT* confirmed as Aboriginal by an Aboriginal agency. It is assumed that the Aboriginal identification of these clients was incorrect. As shown by Table 15, local government, community health and hospital agencies submitted most (69 per cent) records that identified these clients as Aboriginal. The Aboriginal status recording error may be due to an electronic default to Aboriginal for the Aboriginal status question or an administrative error.

Table 15. HACC unlinked client records that mis-identified the client as Aboriginal: by agency type, Victoria (2005-06)

Agency type	Number of Records	Per cent
Local government	219	29
Community health centres	157	21
Hospital	148	19
Bush nursing	21	3
Other non-government	78	10
Royal District Nursing Service	105	14
Other	32	4
Total	760	100

Source: HACC MDS 2005-06

Note: The client was identified as non-Aboriginal on the above records and had an inconsistent identification, but was confirmed as Aboriginal by an Aboriginal agency.

Aboriginal status of clients with consistently missing identification

The pattern of missing Aboriginal status data indicates that a number of HACC agencies do not ask the Aboriginal status question and use an electronic default response for Aboriginal status to 'Not Stated'. Assuming that this pattern prevents responses to Aboriginal status for Aboriginal and non-Aboriginal clients equally, the estimated the number of Aboriginal clients not identified was 84 (see Table 16). This is 0.5 per cent of the 17,936 clients of generic agencies with a consistent missing Aboriginal identification. Aboriginal clients make up 0.5 per cent of all clients of generic agencies.

Table 16. Overview of estimated number of Aboriginal clients with a consistently missing identification who were assisted by generic HACC providers only, Victoria (2005-06)

Aboriginal status	Clients of generic HACC providers only		Estimated breakdown of Aboriginal status of clients of generic agencies with consistent missing identification	
	Number	Per cent	Number	Per cent
Aboriginal	1,069	0.5	84	1
Non-Aboriginal	208,595	91.5	16,441	91
Not stated	18,307	8.1	1,411	8
Total	227,971	100	17,936	100

Source: HACC MDS 2005-06

Consistent mis-identification of Aboriginal and non-Aboriginal clients

It is likely that a number of Aboriginal clients were consistently mis-identified as non-Aboriginal and vice versa. Comparison of HACC Aboriginal client data by age to ABS census data highlighted the likelihood that 158 clients were consistently mis-identified as Aboriginal clients by generic agencies (see details in 'Age Specific Usage Rates' section). The number of Aboriginal clients consistently mis-identified by generic agencies can be estimated using the breakdown of correct and incorrect identification of Aboriginal clients assisted by both Aboriginal and generic HACC providers. The method involves applying the per centage of clients who were assisted by both kinds of provider and were mis-identified by generic agencies (17 per cent) to the number of Aboriginal clients¹ who were only assisted by a generic provider (see Table 17). Due to the small number of people making up this group, the reliability of this method for estimating the total number of Aboriginal clients mis-identified could be questioned. However, in this instance the view is taken that it is better to estimate using the best available data, than not at all.

In 2005-06, an estimated 157 Aboriginal clients assisted by generic agencies only were consistently mis-identified as non-Aboriginal (see Table 17). An estimate of the total number of Aboriginal clients mis-identified as non-Aboriginal, irrespective of the provider type, can be found by adding the recorded (25) and estimated (157) numbers of clients. This gives 182 or 7 per cent of all clients recorded as Aboriginal on one or more occasions.

Table 17. HACC Clients: Overview of Aboriginal clients mis-identified by generic agencies as non-Aboriginal clients, Victoria (2005-06)

Identification	HACC Provider Type							
	Both Aboriginal and generic agencies		Generic agencies only		Aboriginal agencies only		Total	
	Number of Clients	Per cent	Number of Clients*	Per cent	Number of Clients	Per cent	Number of Clients	Per cent
Mis-identification	25	17	157	17	0	0	182	9
Correct identification	120	83	909	83	879	100	1908	91
Total	145	100	1066	100	879	100	2090	100

Source: HACC MDS 2005-06

*Note: The number of correct Aboriginal identifications of clients who were only assisted by generic agencies has been adjusted for age.

1 Note that this number of Aboriginal clients was calculated from an adjusted number of Aboriginal clients only assisted by generic agencies. The adjustment was for consistent mis-identification of non-Aboriginal clients as Aboriginal clients. This analysis is presented in the following section about age-specific usage rates. It concludes that a group of clients who were consistently recorded as Aboriginal were very likely to have been mis-identified non-Aboriginal clients.

Age-specific usage rates

The number of records apparently describing Aboriginal HACC clients aged 75 years or more is too high to be plausible. Most of these doubtful records have been submitted by generic providers.

Table 18 presents HACC usage rates per 1000 population for Aboriginal people aged 75 years or more. In this table, the method of recognising Aboriginal status was to accept clients who were:

- Consistently identified as Aboriginal by generic agencies or Aboriginal agencies, or
- Inconsistently identified but confirmed as Aboriginal by an Aboriginal agency.

ABS population projections offer more than one figure, depending on different assumptions, such as the birth rate in future years. In Table 18, high and low population projections from the 2001 Census were used to compute two series of HACC usage rates. The usage rate is defined here as the number of HACC clients per 1000 people in the relevant population.

It can be seen that the usage rate based on high population projections was 1083 per 1000 people in 2003-04 and fell to 974 in 2005-06. Based on low population projections, the rate stayed stable and was 1,184 per thousand in 2005-06.

This implies that there were more HACC clients than people in this age group, which is not possible (the maximum usage rate is 1000 per 1000.) The numbers can be explained by an over-count of clients by the HACC MDS, or an under-count of Aboriginal people by the Census, or both.

Table 18. HACC Aboriginal clients and population aged 75 years or more: HACC usage rates per 1000 population, Victoria (2003-04, 2004-05 & 2005-06)

Year	No. of Aboriginal people aged 75 years or more		No. of Aboriginal HACC clients aged 75 years or more	HACC usage rates per 1000 population for Aboriginal clients (as stated) aged 75 years or more	
	Low population projections	High population projections		Based on low population projections	Based on high population projections
2005-06	250	304	303	1,184	974
2004-05	251	292	330	1,315	1,130
2003-04	248	278	301	1,214	1,083

Source: Victorian HACC MDS 2005-06, 2004-05 & 2003-04 and ABS Cat. no. 3238.0.55.002 Experimental Projections of Aboriginal and Torres Strait Islander Australians, ATSI Regions, 2001-2009.

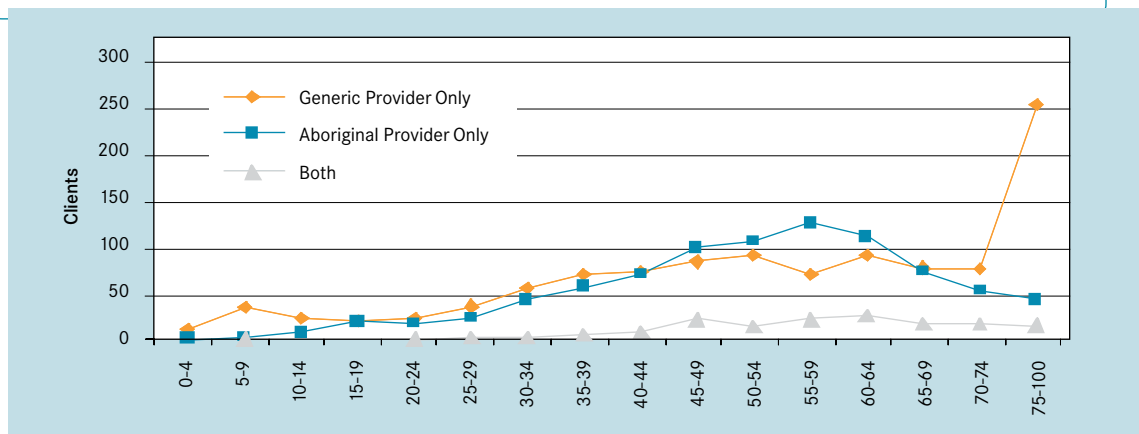
HACC usage rates by age by provider type

Figure 5 presents the age profile of Aboriginal clients by agency type. Of the 879 Aboriginal clients assisted only by Aboriginal providers, the majority (52 per cent) were aged 45-64 years. The curve has a fairly gentle peak at age 55-59.

By contrast, of 1,067 clients stated to be Aboriginal and assisted by generic providers only, 50 per cent were aged 60 years or more. The curve dips at age 55-59 and rises very sharply at age 70-plus.

In fact, eighty-two per cent of clients recorded as Aboriginal and aged 75 years or more were assisted by generic providers only. This group was distinct from those Aboriginal clients aged 75 years or more who were assisted only by Aboriginal providers; more of the ‘generic’ group received nursing at home (31 per cent compared to 2 per cent). However, this difference in services used cannot explain the high distribution of Aboriginal clients aged 75 years or more. This suggests that the Aboriginal status is an error.

Figure 5. HACC Aboriginal clients: HACC provider type by age, Victoria (2005-06)



Source: HACC MDS 2005-06

Consistent mis-identification of non-Aboriginal clients

Comparison of HACC client data to ABS 2001 census data suggests that a number of non-Aboriginal clients were consistently mis-identified as Aboriginal clients by generic providers. This error can easily happen if the agency creates an initial client record and continues to use it to report services in subsequent quarters without checking the demographic details. As shown by Table 19, generic providers assisted a very high number of clients with a consistent Aboriginal identification aged 75 years or more. Among Aboriginal clients assisted only by Aboriginal providers, a mere five per cent were aged 75 years or more, compared to 24 per cent of the group assisted by generic providers only.

Eight per cent of those Aboriginal clients assisted by a mix of Aboriginal and generic agencies were aged 75-plus. If it is assumed that this figure is correct, it is possible to estimate the number of people aged 75-plus who were consistently but wrongly identified as Aboriginal by generic providers; the number is 158.

22 HACC ABORIGINAL DATA QUALITY

It is recommended that the relevant providers should be asked to check these records, before any decision is made to reclassify them as non-Aboriginal.

Table 19. HACC clients with consistent Aboriginal identification (excluding clients with a country of birth overseas) by age group and HACC provider type, Victoria (2005-06)

Age Group	HACC Provider Type			
	Generic	Aboriginal	Both	Total
0-4	11	1	0	12
5-9	32	2	0	34
10-14	23	7	0	30
15-19	19	18	0	37
20-24	23	16	0	39
25-29	34	22	2	58
30-34	52	40	3	95
35-39	68	54	3	125
40-44	71	68	8	147
45-49	81	95	20	196
50-54	87	103	11	201
55-59	69	122	19	210
60-64	85	107	20	212
65-69	74	70	10	154
70-74	73	50	13	136
75-100	246	41	10	297
Total	1,048	816	119	19,83

Source: HACC MDS 2005-06

Note: Missing data for 78 clients.

Summary

Analysis shows that the quality of Aboriginal client data has been stable between 2003-04 and 2005-06. Some key indicators include:

- the level of missing Aboriginal status data (8 per cent)
- the proportion of clients with an inconsistent identification (around 400, 0.2 per cent)
- the large number of clients aged 75 years or more recorded as Aboriginal people
- the number of records listed by generic agencies as Aboriginal and born overseas (around 400)
- non-participation or intermittent participation in the HACC MDS by some Aboriginal agencies.

Poor quality data on Aboriginal status was mainly submitted by generic agencies. Generic agencies submitted:

- 99 per cent of records of apparently Aboriginal clients born overseas
- 99 per cent of records with missing Aboriginal status
- 83 per cent of records of Aboriginal clients aged 75 years or more, which appear implausible compared to the Census
- 92 per cent of records of clients with an inconsistent Aboriginal identification.

There are a number of probable causes of client mis-identification:

1. The Aboriginal status question was not asked and an electronic default recorded:
 - Aboriginal clients as non-Aboriginal or not stated
 - non-Aboriginal clients as Aboriginal.
2. The Aboriginal status question was asked, but the client preferred not to identify.
3. Data recording error.

The type of service provided also seemed to impact on how relevant staff perceived the Aboriginal status question to be.

Over-count greater than under-count

The patterns of mis-identification and agency non-participation suggest that the over count of Aboriginal clients was higher than the undercount. In 2005-06, some 2,624 (1 per cent) of HACC clients were recorded as Aboriginal on one or more records. Analysis suggests that in 2005-06 at least 550 of these clients (21 per cent) were NOT likely to be Aboriginal. This included:

- 172 clients recorded as Aboriginal and born overseas by generic HACC agencies
- 365 clients with an inconsistent identification on multiple records who were NOT confirmed as Aboriginal by an Aboriginal agency.

Analysis of age-specific HACC usage rates suggests that an additional group of up to 158 clients were likely to have been mis-identified. These clients were consistently identified as Aboriginal, aged 75 years or more and only assisted by a generic agency. All records in this category should be checked by service providers.

In 2005-06, it is estimated that no more than 350 clients who were Aboriginal were mis-identified or not included in the HACC MDS due to agency non-participation. This represents 13 per cent of clients who were recorded as Aboriginal on one or more occasions. The estimated 350 clients include:

- an estimated 84 Aboriginal clients attending generic agencies (out of 17,936 clients of generic agencies with a consistently missing item on Aboriginal status)
- an estimated 100 Aboriginal clients of particular Aboriginal organisations that failed to report to the HACC MDS in all four quarters or that failed to report at all in 2005-06 (that is, agency non-participation)
- an estimated 157 Aboriginal clients attending generic agencies who were consistently mis-identified as non-Aboriginal in 2005-06.

All these estimates should be used cautiously, because of the underlying assumptions. It was assumed that the state-wide proportion of Aboriginal clients attending generic agencies would also apply to those generic agencies that supplied 17,936 records with missing data on Aboriginal status. The estimate of 157 clients in the third dot point is based on 145 cases.

Data quality improvement strategy

The Aboriginal client data quality improvement strategy includes a set of actions targeted to specific data quality issues. In summary, the strategy involves monitoring HACC Aboriginal client data quality, providing feedback to HACC agencies, and using client classification and data cleaning rules to recognise Aboriginality. The strategy makes three assumptions based on the data quality assessment. Firstly, that some generic agencies miscoded a low proportion of non-Aboriginal clients as Aboriginal clients. Secondly, that a number of Aboriginal clients were not asked to identify or preferred not to identify when asked and were incorrectly identified as non-Aboriginal or ‘not stated’. Lastly, that the quality of data from Aboriginal agencies on this item was better than the data from generic agencies.

Method of recognising Aboriginal clients

The recommended method of counting HACC Aboriginal clients is presented in two phases: data cleaning of unlinked client records, and classification of clients as Aboriginal or non-Aboriginal. A schematic overview of the method is presented by figure 6.

Data Cleaning Rules

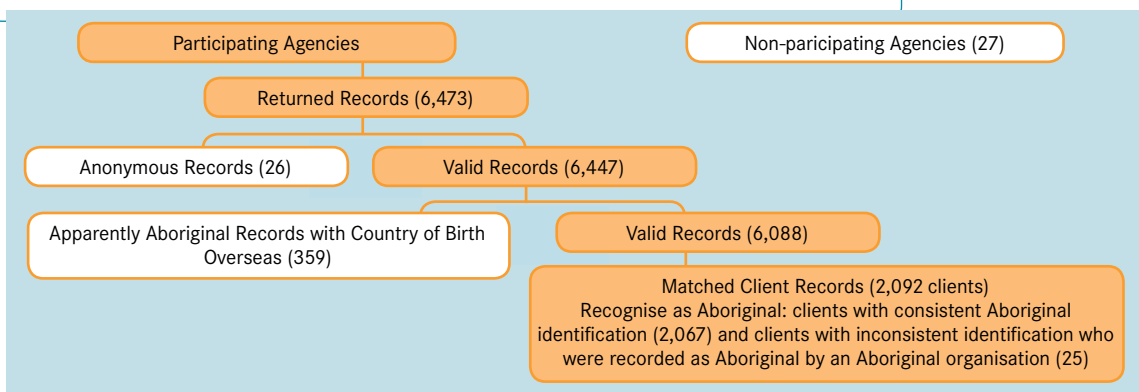
1. Exclude anonymous unlinked client records.
2. Re-classify to Aboriginal identification ‘unknown’ any records submitted by generic agencies of apparently Aboriginal clients with country of birth overseas.

Client Classification Rules

Recognise clients as Aboriginal if:

- ▶ The client was consistently recorded as Aboriginal – whether by an Aboriginal provider [878] or a generic provider [1,069] or both [120], or
- ▶ The client had an inconsistent identification but was identified as Aboriginal by an Aboriginal agency [25 clients].

Figure 6. Method of Recognising Aboriginal status, Victoria (2005-06)



Source: HACC MDS 2005-06

Improving Aboriginal client data recorded by HACC agencies

Analysis of the Victorian HACC MDS has identified a number of data quality problems, including:

- ▶ missing response to Aboriginal identification question
- ▶ missing statistical linkage key information, specifically age
- ▶ missing responses to Aboriginal identification and preferred language
- ▶ discrepant responses to Aboriginal identification and country of birth
- ▶ inconsistency of Aboriginal identification on unlinked client records
- ▶ agency non-participation in HACC MDS and failure to return records for one service type in one quarter.

A small group of agencies were responsible for each of the data quality problems. To address these data quality problems a number of strategies are recommended, including monitoring HACC Aboriginal client data quality, providing feedback to HACC agencies, and investigation of suspect Aboriginal status data by HACC agencies.

Data quality monitoring

It is recommended that managers of the Victorian HACC MDS undertake quarterly and annual reviews of Aboriginal client data. The following fields should be monitored:

1. number of clients recorded as Aboriginal on one or more occasions
2. number of clients with inconsistent Aboriginal status recorded on multiple unlinked client records
3. number of clients recorded as Aboriginal and aged 75 years or more, compared to ABS census data
4. number of unlinked client records with discrepant Aboriginal status and country of birth data
5. number of unlinked client records with discrepant Aboriginal status and preferred language data
6. number of unlinked client records missing Aboriginal status
7. the level of participation in the HACC MDS by Aboriginal agencies.

Location of problem data in these areas should be analysed further and appropriate action taken, such as provision of feedback to the responsible agency.

Feedback to agencies via regions

It is recommended that the Program and Service Advisors and Aboriginal Development Workers provide feedback to agencies responsible for poor quality Aboriginal client data. The following section presents an overview of data quality issues for specific agencies.

Agency participation rate and rate of returned records

During the period of analysis, a number of HACC agencies did not participate in the HACC MDS. Two of the twenty-seven agencies that did not submit any records in 2005-06 were Aboriginal agencies.

A significant proportion (53 per cent) of Aboriginal agencies participated intermittently in the HACC MDS for particular funded service types. It is recommended that regional staff continue to support Aboriginal agencies to fully participate in the HACC MDS.

Missing SLK information, specifically age

Review of information used to create the SLK of Aboriginal clients shows good quality data for sex, but poorer quality data for date of birth. Records submitted by Aboriginal organisations were particularly poor. Six per cent of Aboriginal records and three per cent of non-Aboriginal records from Aboriginal organisations had an invalid date of birth. Two Aboriginal agencies accounted for 126 of the 160 invalid responses. Seventy-seven per cent of records submitted by one organisation did not provide valid information about the age of the client. The recommended action is for regional staff to follow-up with this organisation about this issue.

Discrepant responses to Aboriginal identification & preferred language

A high proportion of records (80 per cent) submitted by one community health service listed an Aboriginal language as the preferred language. However, just 1 per cent (54) of records identified clients as Aboriginal. The recommended action is for regional staff to follow this up with the organisation.

Discrepant responses to Aboriginal identification & country of birth

A major district nursing service and a community health centre together submitted 100 records of apparently Aboriginal clients who were born overseas. The remaining 228 discrepant records were submitted by 61 different agencies. The recommended action is for regional staff to follow up the agencies that submitted the greatest number of problematic records.

Records missing Aboriginal identification

In 2005-06, the rate of missing data for the required Aboriginal status question was higher for generic HACC providers (8 per cent) compared to Aboriginal organisations (3 per cent). The recommended action is for generic agencies that submitted a high number of records missing Aboriginal status data to be informed of their poor quality data by regional staff (48 agencies). Staff in these agencies may need training in how to ask the Aboriginal status question. It is recommended that regional staff follow up any agencies with more than 50 per cent missing data on Aboriginal status (40 agencies).

Inconsistency of Aboriginal identification on unlinked client records

Analysis of clients with inconsistent Aboriginal identification shows that local government, community health and hospital agencies were the most likely agencies to mis-identify non-Aboriginal clients as Aboriginal clients and vice versa. Three such agencies submitted a total of 217 of the inconsistent records. It is recommended that these agencies are followed up by regional staff.

Feedback to agencies via the HACC MDS

It is recommended that the managers of the HACC data repository in the department install warning flags to alert agencies submitting records with discrepant Aboriginal status and country of birth data.

Investigation to confirm the Aboriginal status of clients with suspect records

Investigation of specific client records by generic agencies, with assistance from the HACC data help desk, is needed to confirm the Aboriginal status of clients with suspect records. Clients in this group include apparently Aboriginal clients recorded:

- aged 70 years or more
- described as born overseas
- inconsistently on multiple unlinked records.

Appendix 1: Age specific usage rates

Table 1. Number of Aboriginal HACC clients per 1000 Aboriginal people in Victoria, 2005-06

Age group	Aboriginal Population Projections		No. Aboriginal HACC clients (MDS)	Usage Rates per 1000 Population	
	High	Low	2005-06	High	Low
0-4	4,094	3,631	12	3	3
5-9	3,892	3,438	35	9	10
10-14	4,304	3,811	30	7	8
15-19	3,971	3,513	37	9	11
20-24	3,321	2,943	40	12	14
25-29	2,601	2,304	58	23	25
30-34	2,538	2,244	95	37	42
35-39	2,455	2,173	124	51	57
40-44	2,085	1,846	147	71	80
45-49	1,745	1,544	193	113	125
50-54	1,351	1,203	198	150	165
55-59	1,046	934	210	204	225
60-64	628	552	213	344	386
65-69	398	351	161	397	459
70-74	298	251	137	466	546
75+	304	250	296	997	1,184
All ages	35,031	30,988	1,986		
Missing age			76		
Clients who lived interstate			30		
Total	35,031	30,988	2,092		
Usage Rate per 1000 population aged 45+					
	5,770	5,085	1,408	244	277

Source: Victorian HACC MDS 2005-06 and ABS 2001 Indigenous Population Projections.

Table 2. Number of Aboriginal HACC clients per 1000 Aboriginal people in Victoria, 2004-05

Age group	Aboriginal population projections		No. Aboriginal HACC clients (MDS) 2004-05	Usage rates per 1000 population	
	High	Low		High	Low
0-4	3,902	3,543	14	4	4
5-9	3,883	3,517	30	8	9
10-14	4,231	3,840	30	7	8
15-19	3,726	3,374	35	9	10
20-24	3,033	2,751	31	10	11
25-29	2,469	2,243	67	27	30
30-34	2,542	2,301	80	32	35
35-39	2,285	2,071	110	48	53
40-44	1,987	1,799	122	61	68
45-49	1,622	1,473	146	90	99
50-54	1,300	1,186	168	129	142
55-59	949	865	184	194	213
60-64	599	538	199	332	370
65-69	355	321	147	414	458
70-74	294	256	152	517	594
75+	292	251	330	1130	1315
All ages	33,469	30,329	1,845		
Missing age			64		
Clients who lived interstate			21		
Total	33,469	30,329	1,930	58	64
Usage rate per 1000 population aged 45+					
	5,411	4,890	1,326	245	271

Source: Victorian HACC MDS 2005-06 and ABS 2001 Indigenous Population Projections.

Table 3. Number of Aboriginal HACC clients per 1000 Aboriginal people in Victoria, 2003-04

Age group	Aboriginal population projections		HACC MDS	Usage rates per 1000 population	
	High	Low	2003-04	High	Low
0-4	3,745	3,477	12	3	4
5-9	3,926	3,644	25	6	7
10-14	4,071	3,781	27	7	7
15-19	3,459	3,213	23	7	7
20-24	2,760	2,566	39	14	15
25-29	2,398	2,230	52	22	23
30-34	2,531	2,346	83	33	35
35-39	2,131	1,977	96	45	49
40-44	1,866	1,738	117	63	67
45-49	1,505	1,397	137	91	98
50-54	1,269	1,180	159	125	135
55-59	842	789	155	184	197
60-64	564	526	184	326	350
65-69	339	314	131	386	417
70-74	285	257	142	498	553
75+	278	248	301	1083	1214
All ages	31,969	29,683	1,683		
Missing age			64		
Clients who lived interstate			20		
Total	31,969	29,683	1,767	55	60
Usage Rate per 1000 population aged 45+					
	5,082	4,711	1,209	238	257

Source: Victorian HACC MDS 2005-06 and ABS 2001 Indigenous Population Projections.

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List of Abbreviations

AIHW	Australian Institute of Health and Welfare
DHS	Department of Human Services, Victoria
HACC	Home and Community Care Program
HACC MDS	Home and Community Care Minimum Data Set
LGA	Local government area
SLK	Statistical linkage key

