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# **‘Potential population’**

**Updating the Indigenous factor in disability services  
performance indicator denominators**

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Australian Institute of Health and Welfare  
Canberra

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## Introduction

For the first time, information on the prevalence of disability in the Aboriginal and Torres Strait Islander population is available, from the 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS). The NATSISS includes a short set of questions relating to disability that provide data comparable with that obtained from the 2002 General Social Survey (GSS) for the Australian population. A recent comparison of the disability status of Indigenous and non-Indigenous people based on prevalence estimates from these two national surveys confirmed long-held beliefs that severe or profound disability rates are more than twice as high among Indigenous people (AIHW & ABS, 2005). The purpose of this paper is to propose an update of the Indigenous factor used in Commonwealth State/Territory Disability Agreement (CSTDA) performance indicators.

National Disability Administrators have accepted the paper's recommendation that the existing weight of 2.0 that is currently applied to the number of Indigenous people in 'potential population' calculations be updated to a weight of 2.4 based on the new prevalence estimates.

## Background

The 'potential population' is an estimate of the number of people who may at some time require access to specialist disability services and is used as the denominator of national performance indicators for disability services. The estimate is based on the premise that the presence of 'severe or profound core activity limitation'<sup>1</sup> (meaning that a person sometimes or always needs assistance with activities of self-care, mobility or communication) is an important population indicator of the need for CSTDA services.

The 'potential population' is calculated for each state and territory using national age-sex-standardised prevalence estimates from the Australian Bureau of Statistics Survey of Disability, Ageing and Carers. A variety of 'potential population' estimates are currently in use, each calculated slightly differently depending on the type of service provided – employment, respite, or all other services. The recent AIHW report on the CSTDA National Minimum Data Set (NMDS) (AIHW 2005) provides a description of the current 'potential population' estimates and how they are calculated.

Nearly ten years ago the AIHW proposed an Indigenous factor for use in the calculation of the 'potential population' (AIHW 1997). At this time, there were no extensive data on disability among Aboriginal and Torres Strait Islander people. There were, however, data indicating higher rates of disabling conditions, such as injury, and respiratory and circulatory disease. With higher rates of disabling conditions, it could be expected that the rate of severe or profound core activity

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<sup>1</sup> For an outline of relevant Australian disability survey terms see Appendix 2.

limitation would also be higher. In this case, jurisdictions with a larger proportion of Indigenous people would have a greater potential need for services. The size of the Indigenous population can, then, be seen as an additional indicator of the potential need for services within a jurisdiction and should be considered when calculating the 'potential population'. It was on this basis that the AIHW recommended adjusting 'potential population' estimates with an Indigenous factor, calculated by weighting the Indigenous population in each jurisdiction.

Without extensive data on disability rates within the Indigenous population, it was difficult to determine the appropriate size of an Indigenous factor or weight. Disability support services data from the CSDA MDS<sup>2</sup> provided an alternative data source. These data indicated that the proportion of Indigenous people in the Northern Territory using CSDA services was approximately twice as high as the proportion of non-Indigenous people. On the basis of this finding and other data, the AIHW proposed that a weighting of 2 be applied to the number of Indigenous people in each jurisdiction when calculating the 'potential population' (AIHW 1997).

The proposal to include an Indigenous factor with a weighting of 2 in 'potential population' calculations was adopted by the Disability Services Working Group advising on the construction of the Report on Government Services. The adjusted 'potential population' has since been used in AIHW reports on the CSDA/CSTDA NMDS. It is also used in CSTDA annual public reports (published by National Disability Administrators) and annually in the Report on Government Services (SCRCSSP 2005). In broad terms, the inclusion of an Indigenous factor in 'potential population' calculations means that state and territory estimates are adjusted up or down to reflect the relative size of the Indigenous population in that jurisdiction.

## **National Aboriginal and Torres Strait Islander Social Survey 2002**

With the release of the 2002 NATSISS, it is now possible to estimate the prevalence of severe or profound core activity limitation among the Indigenous population (see Table 1). This provides the opportunity to update the Indigenous factor to be based on differences in rates of severe or profound core activity limitation between the Indigenous and non-Indigenous populations.

First, there are some features of this new data source that need to be understood. The 2002 NATSISS includes people aged 15 years and over. There are a number of 'screening' questions used to establish disability status and disability type. A person was regarded as having a disability or long-term health condition if they had one of a number of conditions, which had lasted, or was likely to last, for six months or more and which limited or restricted a person's ability to perform everyday activities. People identified as having a disability or long-term health condition were then asked further questions to establish their level of limitations in one or more 'core activities' of daily living (self-care, mobility, communication).

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<sup>2</sup> The Commonwealth-State Disability Agreement Minimum Data Set (CSDA MDS) was the predecessor to the CSTDA NMDS. The collection was redeveloped and was renamed the CSTDA NMDS in 2002.

**Table 1: Age-specific rates of severe or profound core activity limitation among Indigenous people, age and sex by remoteness (common criteria<sup>(a)</sup>), Australia, 2002**

	Males			Females			Persons		
	Non-remote	Remote	Total	Non-remote	Remote	Total	Non-remote	Remote	Total
15 to 19	3.4	3.0	3.3	2.8	1.6	2.5	3.1	2.3	2.9
20 to 24	4.8	5.0	4.9	2.6	11.0	5.0	3.7	8.0	4.9
25 to 29	4.8	2.4	4.1	3.8	6.6	4.6	4.3	4.6	4.4
30 to 34	12.2	3.7	9.8	5.6	4.9	5.4	8.7	4.3	7.5
35 to 39	3.4	4.0	3.5	6.1	5.5	6.0	4.9	4.8	4.8
40 to 44	6.2	9.6	7.1	12.9	11.4	12.5	9.7	10.5	9.9
45 to 49	5.6	13.8	7.8	11.6	5.8	10.1	8.6	9.9	9.0
50 to 54	15.1	9.7	13.6	15.8	26.1	18.4	15.5	18.1	16.2
55 to 59	14.2	11.0	13.3	5.4	20.6	8.7	9.3	15.7	10.8
60 to 64	6.5	16.6	9.5	19.7	20.5	20.0	13.3	18.8	15.2
65 or over	24.2	38.6	28.7	16.8	33.2	22.3	20.2	35.6	25.2
<b>Total number</b>	<b>7,200</b>	<b>2,900</b>	<b>10,000</b>	<b>7,800</b>	<b>4,000</b>	<b>11,800</b>	<b>6,900</b>	<b>14,900</b>	<b>21,800</b>
<b>Total per cent</b>	<b>7.3</b>	<b>7.6</b>	<b>7.4</b>	<b>7.2</b>	<b>10.2</b>	<b>8.0</b>	<b>7.3</b>	<b>8.9</b>	<b>7.7</b>
<b>95% CI</b>	<b>5.6–9.0</b>	<b>5.7–9.5</b>	<b>6.1–8.7</b>	<b>5.8–8.6</b>	<b>7.2–13.1</b>	<b>6.7–9.3</b>	<b>6.1–8.4</b>	<b>7.2–10.6</b>	<b>6.7–8.7</b>

(a) See next section for an explanation of the different criteria used in the NATSISS.

## Differences in the NATSISS between remote and non-remote areas

There were a number of differences in the ‘screening’ questions used to establish disability status and disability type for persons living in remote and non-remote areas. While there was a ‘common’ set of questions asked in both remote and non-remote areas, some additional questions were asked in non-remote areas only.

The expanded set of screening questions asked in non-remote areas is referred to as the ‘broader criteria’. These criteria are comparable with the criteria used to identify people with core activity limitations in other ABS surveys, such as the 2003 Survey of Disability, Ageing and Carers and the 2002 General Social Survey. However, unlike the 2003 Survey of Disability, Ageing and Carers, the criteria used in the NATSISS do not separately identify people with a long-term health condition only (without disability). As we are interested in people with a severe or profound core activity limitation, this does not affect the analyses presented in this paper.

The subset of questions used in remote areas of the NATSISS is referred to as the ‘common criteria’. In remote areas respondents were not asked about disfigurement/deformity; conditions that restrict physical activity or physical work (e.g. back problems, migraines); mental illness requiring help or supervision; or limitation due to a nervous or emotional condition.

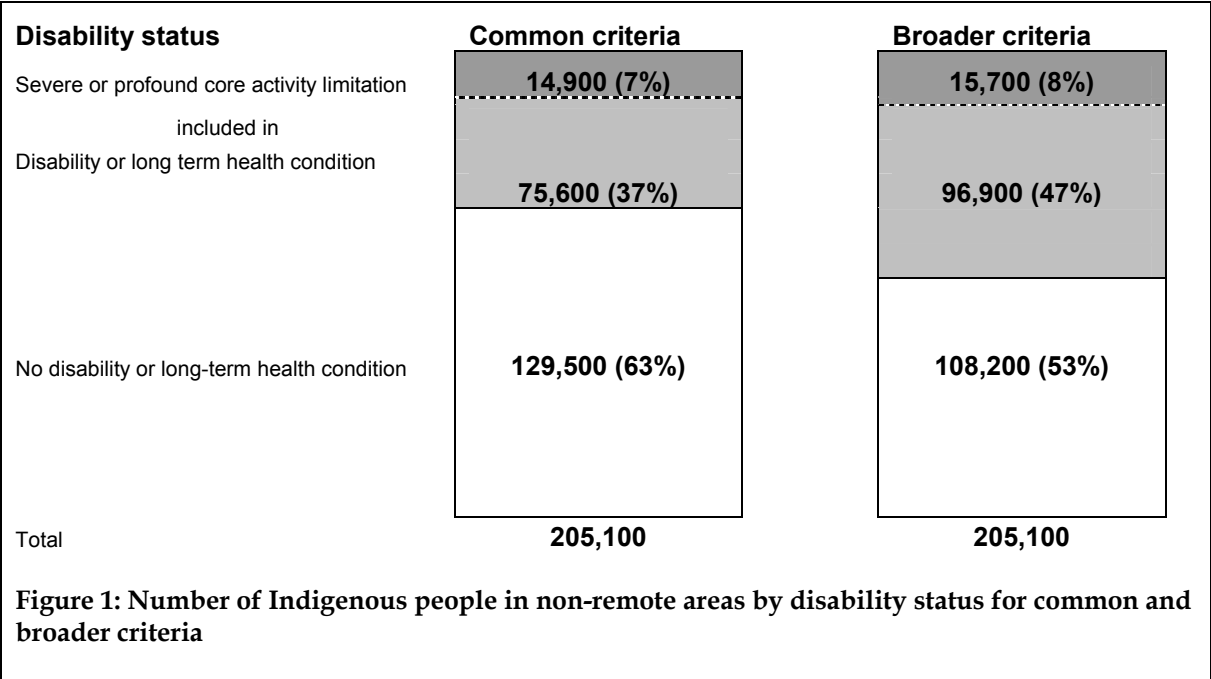
The omission of the first two of these questions may have resulted in an underestimate of Indigenous persons with a physical disability in remote areas. The omission of the latter two questions meant that the NATSISS did not explicitly identify persons in remote areas with what the ABS defines as a ‘psychological disability’ (i.e. those who had either a mental illness requiring help or supervision, or a limitation due to a nervous or emotional condition). Some people with a

psychological disability will have been correctly identified as having a disability (and therefore included in the total of persons with a disability) if they reported that they were receiving medical treatment or taking medication for a restricting health condition, but the type of disability cannot be determined from this information alone (ABS 2004a).

Figure 1 illustrates the statistical effect of using different criteria (common and broader) on the numbers of Indigenous people by disability status in non-remote areas. The number of people who reported a disability or long-term health condition in non-remote areas using the broader criteria was 96,900 compared to 75,600 using the common criteria, a difference of 21,300 or 10% of the total Indigenous population in non-remote areas (Figure 1). The corresponding numbers for people with a severe or profound core activity limitation were 15,700 compared to 14,900, a difference of 800 people, or 0.4% of the population.

Thus some of the people categorised as having no disability or long-term condition under the common criteria, did have a disability or long-term health condition under the broader criteria (and in a small number of cases had a severe or profound core activity limitation).

Figure 1 illustrates that prevalence estimates for both total disability and severe or profound core activity limitations are lower using the common criteria (37% and 7% respectively) than using the broader criteria (47% and 8% respectively).



In non-remote areas, the inclusion of the two questions relating to psychological disability resulted in 18,700 Indigenous people reporting this disability type, 9% of the 205,100 Indigenous population aged 15 years and over living in non-remote areas. The inclusion of the extra two questions relating to physical disability resulted in an additional 20,400 people reporting this disability type than under the common

criteria (Table 2). Since people may have disabilities of more than one type, some of the people in the above two groups may have been captured under the common criteria as having a disability or long-term health condition of another type (or because they were receiving medical treatment or taking medication). This was in fact the case, as the overall increase of 21,300 people with a disability or long-term health condition was much less than the number of people who reported one of these two disability types.

**Table 2: Indigenous persons aged 15 or over, numbers of additional people with a psychological or physical disability or long-term health condition included under broader criteria but not common criteria, by sex, 2002**

Disability type	Males	Females	Total
Psychological	8,400	10,400	18,700
Physical	8,700	11,700	20,400
Number of additional people with a disability or long-term health condition	7,900	13,400	21,300

**Comparison of Indigenous and non-Indigenous disability rates**

The different criteria used to establish disability in the NATSISS for non-remote and remote areas means that a direct comparison of Indigenous and non-Indigenous disability rates is not possible. While the NATSISS used the ‘common criteria’ to establish disability in remote areas and the ‘broader criteria’ in non-remote areas, the 2002 General Social Survey used only the ‘broader criteria’. However, it is possible to adjust for these differences in various ways so as to compare the rate of severe or profound core activity limitation for Indigenous people from the NATSISS with that for non-Indigenous people from the GSS.

Before considering some different methods for comparing Indigenous and non-Indigenous disability rates, two potential limitations of the data sources should be considered.

**Age groups covered**

As previously noted, the 2002 NATSISS included people aged 15 years and over. The 2002 GSS included people aged 18 years and over. Consequently, the following comparisons include only people aged 18 years and over.

Also, as there are no data to compare the rates of severe or profound core activity limitation for Indigenous and non-Indigenous people aged 0 to 17, a further assumption would need to be made for any comparison to be applicable to the whole population – namely, that the calculated age-standardised rate ratios would not change substantially if this age range could be included.

The different age-structures of the Indigenous and non-Indigenous populations mean that a greater proportion (45%) of the Indigenous population is omitted by excluding people aged 0 to 17 than of the non-Indigenous population (24%). So while the disability estimates for the non-Indigenous population represent three-quarters

of that population, the disability estimates for the Indigenous population represent just over half of that population.

### **Scope of the GSS**

The 2002 GSS did not include people living in 'sparsely settled' areas of the Northern Territory. Consequently, the non-Indigenous disability prevalence estimates used in this paper exclude people living in 'sparsely settled' areas of the Northern Territory. However, the exclusion of people living in these areas is not expected to affect national estimates. In the 2001 ABS census, only 0.07% of the non-Indigenous population lived in very remote areas of the Northern Territory.

### **Comparisons and rate ratios**

To assess the best way to overcome some of the methodological problems associated with the use of different 'criteria' in the NATSISS, four comparisons were made using slightly different prevalence estimates. Rate ratios have been calculated for each comparison. A rate ratio is a common way to compare rates for different populations. It is calculated by dividing the rate for the population of interest (prevalence of severe or profound core activity limitation in the Indigenous population) by the rate for the comparison population (prevalence of severe or profound core activity limitation in the non-Indigenous population). A rate ratio of 1 indicates there is no difference between the rates, a ratio less than 1 indicates the rate is lower in the population of interest, and a ratio greater than 1 indicates the rate is higher in the population of interest.

In this paper, the rate ratios have been calculated on age-standardised rates<sup>3</sup>. This removes any differences that are due to the different age-structures of the two populations. For example, an age-standardised rate ratio of 2.4 means that if the Indigenous and non-Indigenous populations had the same age structure as the total Australian population, the number of Indigenous people with a severe or profound core activity limitation would be 2.4 times the number of non-Indigenous people with a severe or profound core activity limitation.

Four different comparative analyses are now presented. (See appendix tables A1 to A4 for details and Table 3 for a summary of methods for the four comparisons.)

1. A direct comparison of severe or profound core activity limitation rates based on the broader criteria was made for non-remote areas (*Resulting age-standardised rate ratios: 2.1 persons, 2.5 males, 1.8 females, Table A1*).

The results of this comparison, including rate ratios broken down by sex, age group and disability type, were recently presented in a joint report prepared by the AIHW and the ABS on the health and welfare of Indigenous people (AIHW & ABS 2005).

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<sup>3</sup> All of the rate ratios presented in this paper were calculated on rates of 'severe or profound core activity limitation', rather than overall disability rates. Rate ratios calculated on overall disability rates tend to be lower than those based on severe or profound limitation – a rate ratio of 1.4 has been calculated for people with a disability (of any severity level) living in non-remote areas (ABS 2004a).

Limiting the comparison to non-remote areas ensured that people with a severe or profound core activity limitation were identified using the same criteria in the Indigenous and non-Indigenous populations. However, for the rate ratios produced by this comparison to be applicable to the whole population, it is necessary to assume that including remote areas would not substantially alter the result.

The inclusion of remote areas did not alter the age-standardised prevalence rate for non-Indigenous people – the age-standardised rates for non-remote areas and overall were both 5% (see Tables A1 & A2). This is not surprising given less than 2% of the non-Indigenous population live in remote areas.

In contrast to non-Indigenous people, the proportion of Indigenous people living in remote areas is significant (28%). As a result, the prevalence rate for Indigenous people is more likely to be affected by the inclusion of remote areas. If the rate for Indigenous people in remote areas is higher than in non-remote areas, then the rate ratio is likely to be higher than 2.1. Results based on the common criteria suggest the rate in remote areas may be higher, although the difference is not statistically significant. Using the common criteria, the rate for Indigenous people living in remote areas (9%) was 2 percentage points higher than the rate in non-remote areas (7%) (Table 1).

2. The non-remote Indigenous estimate (based on the broader criteria) was summed with the remote Indigenous estimate (based on the common criteria) and compared with the non-Indigenous estimate (based on the broader criteria) (*Resulting age-standardised rate ratios: 2.3 persons, 2.6 males, 2.1 females, Table A2*).

The advantage of this comparison is that it makes use of all the available information by including in the prevalence estimates for all Indigenous people identified from the NATSISS and all non-Indigenous people identified from the GSS. A major limitation of this comparison is that people with a severe or profound core activity limitation were identified using different criteria.

For the rate ratios produced by this comparison to be applicable to the whole population, it is necessary to assume that the ratios would not greatly differ had the NATSISS used the 'broader criteria' in remote areas. As previously noted, use of the broader criteria in non-remote areas resulted in a further 800 Indigenous people being identified with a severe or profound core activity limitation (Figure 1). If, as was the case in non-remotes areas, the prevalence rate for remote areas was found to be higher using the broader criteria then the rate ratio of 2.3 is likely to be an underestimate.

3. The Indigenous estimate based on the common criteria was compared with the non-Indigenous estimate based on the common criteria (*Resulting age-standardised rate ratios: 2.4 persons, 2.7 males, 2.2 females, Table A3*).

This comparison has the same benefit as comparison 1 – the same criteria were used to identify people with a severe or profound core activity limitation in both populations. Restricting the comparison to the common criteria has a further advantage over comparison 1 in that it allows all geographic areas to be included.

For the rate ratios produced by this comparison to be applicable to the whole population it is necessary to assume that use of the 'broader criteria' (rather than the 'common criteria') would not have produced a substantially different result. In other words, this comparison assumes the relative impact of using the 'broader criteria' would be the same in the Indigenous and non-Indigenous populations. This assumption is supported by the fact that the relative impact of the broader criteria was very similar for the non-remote Indigenous estimate (an increase representing 0.4% of the population) and the non-Indigenous estimate (an increase representing 0.3% of the population).

4. The relative impact of the broader criteria on the Indigenous estimate in remote areas was calculated and applied as a weight to the estimate for remote areas. This adjusted Indigenous estimate (the actual non-remote estimate plus the weighted remote estimate) was compared with the non-Indigenous estimate based on the broader criteria

*(Resulting age-standardised rate ratios: 2.4 persons, 2.7 males, 2.2 females, Table A4).*

This comparison provides us with an estimate of the rate ratios that would have been produced if the NATSISS had used the broader criteria in remote areas and the relative impact of these criteria was the same as it was for non-remote areas. Weights were calculated for each sex and five-year age group based on the proportional increase in the number of people identified with a severe or profound core activity limitation as a result of using the broader criteria instead of the common criteria. These weights were applied to the corresponding sex and five-year age groups in remote areas.

For the rate ratios produced by this comparison to be applicable to the whole population it is necessary to assume that the relative impact of the 'broader criteria' would have been the same in remote and non-remote areas. This may be a reasonable assumption given there was no statistically significant difference between the rates for remote and non-remote areas based on the 'common criteria' (Table 1). However, it is worth mentioning that, although the difference in rates based on the 'common criteria' was not statistically significant, the rate for remote areas (9%) was, in fact, higher than the non-remote rate (7%) and significantly higher among women aged 65 years and over (17% in non-remote areas, 33% in remote areas) (Table 1).

## **Updated Indigenous factor**

The exclusion of people aged 0–17 years means that none of the above comparisons are based on fully representative estimates. However, the first comparison described (see 1 above) – a direct comparison for non-remote areas – is probably based on the least representative estimates, particularly for the Indigenous population as more than one quarter of this population live in remote areas. While the other comparisons (2 to 4) were all based on national or 'all areas' estimates, the Indigenous estimate used in the second comparison is almost certainly an underestimate as no adjustments were made to account for the reduced number of screening questions used in remote areas. This prevalence estimate (2) is, however, an indication of the

minimum level of severe or profound core activity limitation in the Indigenous population. Therefore the rate ratio of 2.3 calculated in this comparison is the lowest we would expect if the full set of screening questions had been used.

The two remaining comparisons (3 & 4) both made adjustments for the reduced number of screening questions used in remote areas and included all geographic areas. For this reason, the estimates used in these comparisons can be considered more representative and the resulting rate ratios are probably more accurate. Coupled with the fact that 2.3 is very likely an underestimate (comparison 2), the AIHW therefore proposed that the existing weight of 2.0 that is currently applied to the number of Indigenous people in 'potential population' calculations be updated to a weight of 2.4. This proposal was endorsed by the National Disability Administrators in December 2005. Following this endorsement, all 'potential population' estimates produced by AIHW will be calculated using the updated weight. This weight will be reviewed periodically as new prevalence estimates become available.

**Table 3: Summary of methods**

	<b>Criteria</b>	<b>Scope</b>	<b>Assumptions</b>
Comparison 1	Indigenous = broad Non-Indigenous = broad	Non-remote areas (people aged 18+ years)	Inclusion of remote areas would have the same effect on Indigenous and non-Indigenous rates
Comparison 2	Indigenous = common (remote) and broad (non-remote) Non-Indigenous = broad	All areas (people aged 18+ years)	Use of broad criteria in remote areas would not affect the Indigenous rate
Comparison 3	Indigenous = common Non-Indigenous = common	All areas (people aged 18+ years)	Use of broad criteria would have the same effect on Indigenous and non-Indigenous rates
Comparison 4	Indigenous = weighted common (remote) and broad (non-remote) Non-Indigenous = broad	All areas (people aged 18+ years)	Use of broad criteria would have the same effect on the remote Indigenous rate as it had on the non-remote Indigenous rate

Indigenous factor calculations using a weight of 2.4 and population counts as at 30 June 2004 are presented in Table 4. To illustrate the effect of the Indigenous factor on 'potential population' estimates, Table 5 shows adjusted 'potential population' estimates for all other services other than respite and employment (users aged under 65 years).

**Table 4: Calculation of Indigenous factor, 30 June 2004**

	NSW	Vic	QLD	WA	SA	Tas	ACT	NT	Australia
<b>Population aged under 65</b>									
Indigenous population <sup>(a)</sup>	137,530	28,864	130,475	67,587	26,301	17,598	4,136	57,853	470,572
Non-Indigenous population <sup>(b)</sup>	5,676,011	4,270,933	3,291,877	1,680,327	1,275,773	395,749	289,865	133,176	17,016,033
Weighted population <sup>(c)</sup>	6,006,083	4,340,207	3,605,017	1,842,536	1,338,895	437,984	299,791	272,023	18,145,406
Weighted population per capita <sup>(d)</sup>	1.06	1.02	1.10	1.10	1.05	1.11	1.03	2.04	1.07
Indigenous factor <sup>(e)</sup>	99.23	95.30	102.70	102.83	98.42	103.78	96.99	191.55	100.00
<b>Population aged 15–64</b>									
Indigenous population <sup>(a)</sup>	83,246	17,962	78,449	41,824	16,390	10,766	2,571	37,180	288,540
Non-Indigenous population <sup>(b)</sup>	4,406,162	3,322,775	2,544,229	1,307,409	999,934	305,510	228,214	103,449	13,219,314
Weighted population <sup>(c)</sup>	4,605,952	3,365,884	2,732,507	1,407,787	1,039,270	331,348	234,384	192,681	13,911,810
Weighted population per capita <sup>(d)</sup>	1.05	1.01	1.07	1.08	1.04	1.08	1.03	1.86	1.05
Indigenous factor <sup>(e)</sup>	99.33	96.26	102.05	102.32	98.76	103.06	97.59	176.99	100.00

(a) ABS estimates of Aboriginal and Torres Strait Islander population as at 30 June 2004 (ABS 2004b).

(b) From ABS total population as at 30 June 2004 (ABS 2003) less population from (a).

(c) Aboriginal and Torres Strait Islander population weighted at 2.4, non-Indigenous population weighted at 1.

(d) Weighted population divided by total population ((a)+(b)).

(e) Indigenous factor calculated as weighted population per capita (d) standardised for Australia = 100.00.

**Table 5: Application of Indigenous factor to 'potential population' estimates, 30 June 2004**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
<b>People under 65 years</b>									
Indigenous factor (%) <sup>(a)</sup>	99.23	95.30	102.70	102.83	98.42	103.78	96.99	191.55	100.00
With profound or severe core activity restriction <sup>(b)</sup>	231,851	170,767	136,591	69,458	52,846	16,996	11,443	7,172	697,124
Potential population (Other services) <sup>(c)</sup>	230,064	162,736	140,274	71,423	52,009	17,639	11,098	13,738	697,124

(a) Indigenous factor for people aged under 65 years as calculated in Table 4.

(b) Estimated population of people with profound or severe core activity restriction calculated by applying national age-sex-specific rates from the 2003 SDAC to ABS population estimates as at 30 June 2004 (ABS 2003).

(c) Indigenous factor (divided by 100) is multiplied by the estimated population in (b).

## Appendix 1: Detailed tables

Table A1 (comparison 1): Direct comparison for non-remote areas based on the 'broader criteria'

	Indigenous (NATSISS) - non-remote areas - broad criteria								
	Males			Females			Persons		
	Severe / profound limitation	Total population	% with severe/ profound limitation	Severe / profound limitation	Total population	% with severe/ profound limitation	Severe / profound limitation	Total population	% with severe/ profound limitation
18 to 24	800	19,400	4.3	700	19,900	3.6	1,600	39,300	4.0
25 to 29	600	12,200	4.8	500	13,800	4.0	1,100	25,900	4.4
30 to 34	1,400	11,600	12.3	900	13,700	6.8	2,400	25,300	9.3
35 to 39	400	10,400	3.5	800	12,200	6.7	1,200	22,600	5.2
40 to 44	700	9,500	6.9	1,300	10,200	13.2	2,000	19,800	10.2
45 to 49	400	7,500	5.6	1,000	7,600	12.8	1,400	15,100	9.2
50 to 54	900	5,900	15.1	1,200	7,200	16.7	2,100	13,100	16.0
55 to 59	600	4,100	14.2	300	5,300	5.9	900	9,400	9.5
60 to 64	200	2,200	7.9	500	2,400	19.7	600	4,600	14.0
65 or over	1,000	4,000	24.2	800	4,700	16.8	1,800	8,700	20.2
<b>Total</b>	<b>6,900</b>	<b>87,000</b>	<b>7.9</b>	<b>8,100</b>	<b>96,900</b>	<b>8.4</b>	<b>15,000</b>	<b>183,900</b>	<b>8.2</b>
<b>Age-standardised rate</b>			<b>10.6</b>			<b>10.5</b>			<b>10.5</b>
	Non-Indigenous (GSS) - non-remote areas - broad criteria								
	Males			Females			Persons		
	Severe / profound limitation	Total population	% with severe/ profound limitation	Severe / profound limitation	Total population	% with severe/ profound limitation	Severe / profound limitation	Total population	% with severe/ profound limitation
18 to 24	22400	940,000	2.4	10800	910,500	1.2	33,200	1,850,500	1.8
25 to 29	9200	695,600	1.3	15400	679,400	2.3	24,600	1,375,000	1.8
30 to 34	17,400	710,200	2.4	19700	720,500	2.7	37,100	1,430,600	2.6
35 to 39	16300	703,600	2.3	27100	708,300	3.8	43,400	1,412,000	3.1
40 to 44	38400	723,000	5.3	31,700	729,500	4.3	70,000	1,452,600	4.8
45 to 49	14700	671,500	2.2	29,200	682,300	4.3	43,800	1,353,700	3.2
50 to 54	24400	629,600	3.9	23,400	614,500	3.8	47,900	1,244,100	3.8
55 to 59	26600	528,400	5.0	34600	519,300	6.7	61200	1,047,800	5.8
60 to 64	21100	400,800	5.3	27700	401,700	6.9	48800	802,500	6.1
65 or over	97,900	1,004,600	9.7	180100	1,190,800	15.1	278,100	2,195,400	12.7
<b>Total</b>	<b>288,400</b>	<b>7,007,300</b>	<b>4.1</b>	<b>399,700</b>	<b>7,156,800</b>	<b>5.6</b>	<b>688,000</b>	<b>14,164,100</b>	<b>4.9</b>
<b>Age-standardised rate</b>			<b>4.2</b>			<b>5.7</b>			<b>5.0</b>
<b>Age-standardised rate ratio</b>			<b>2.5</b>			<b>1.8</b>			<b>2.1</b>

**Table A2 (comparison 2): Non-remote Indigenous estimate (based on the broader criteria) was summed with the remote Indigenous estimate (based on the common criteria) and compared with the non-Indigenous estimate (based on the broader criteria)**

<b>Indigenous (NATSISS) - all areas - remote (common criteria) + non-remote (broad criteria)</b>									
	<b>Males</b>			<b>Females</b>			<b>Persons</b>		
	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>
18 to 24	1,200	27,000	4.3	1,300	27,400	4.8	2,500	54,400	4.6
25 to 29	700	17,200	4.1	900	19,000	4.7	1,600	36,300	4.4
30 to 34	1,600	16,200	9.9	1,200	18,600	6.3	2,800	34,800	7.9
35 to 39	500	14,500	3.6	1,100	16,700	6.4	1,600	31,200	5.1
40 to 44	1,000	12,800	7.6	1,800	13,800	12.7	2,700	26,600	10.3
45 to 49	800	10,300	7.8	1,100	10,400	11.0	1,900	20,600	9.4
50 to 54	1,100	8,200	13.6	1,800	9,500	19.0	2,900	17,700	16.6
55 to 59	800	5,700	13.3	600	6,700	9.0	1,400	12,400	11.0
60 to 64	300	3,200	10.5	800	3,800	20.0	1,100	7,000	15.6
65 or over	1,700	5,900	28.7	1,600	7,000	22.3	3,200	12,900	25.2
<b>Total</b>	<b>9,700</b>	<b>121,000</b>	<b>8.0</b>	<b>12,100</b>	<b>132,900</b>	<b>9.1</b>	<b>21,700</b>	<b>253,800</b>	<b>8.6</b>
<b>Age-standardised rate</b>			<b>11.3</b>			<b>11.8</b>			<b>11.5</b>

<b>Non-Indigenous (GSS) - all areas - broad criteria</b>									
	<b>Males</b>			<b>Females</b>			<b>Persons</b>		
	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>
18 to 24	23,300	953,000	2.4	10,800	916,200	1.2	34,200	1,869,200	1.8
25 to 29	9,200	705,900	1.3	15,500	683,800	2.3	24,700	1,389,700	1.8
30 to 34	17,400	728,200	2.4	19,800	730,400	2.7	37,100	1,458,500	2.5
35 to 39	16,800	713,200	2.4	27,100	718,800	3.8	43,900	1,432,000	3.1
40 to 44	38,400	737,200	5.2	31,900	737,700	4.3	70,200	1,475,000	4.8
45 to 49	14,700	678,900	2.2	29,200	687,400	4.2	43,800	1,366,300	3.2
50 to 54	24,400	636,500	3.8	23,500	627,400	3.7	47,900	1,263,900	3.8
55 to 59	28,800	538,000	5.4	34,600	522,700	6.6	63,500	1,060,700	6.0
60 to 64	21,900	410,700	5.3	27,800	405,600	6.9	49,700	816,400	6.1
65 or over	99,200	1,016,100	9.8	184,100	1,206,000	15.3	283,400	2,222,200	12.8
<b>Total</b>	<b>294,200</b>	<b>7,117,800</b>	<b>4.1</b>	<b>404,200</b>	<b>7,236,000</b>	<b>5.6</b>	<b>698,400</b>	<b>14,353,800</b>	<b>4.9</b>
<b>Age-standardised rate</b>			<b>4.3</b>			<b>5.6</b>			<b>5.0</b>
<b>Age-standardised rate ratio</b>			<b>2.6</b>			<b>2.1</b>			<b>2.3</b>

**Table A3 (comparison 3): The Indigenous estimate based on the common criteria was compared with the non-Indigenous estimate based on the common criteria**

<b>Indigenous (NATSISS) - all areas - common criteria</b>									
	<b>Males</b>			<b>Females</b>			<b>Persons</b>		
	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>
18 to 24	1,200	27,000	4.3	1,100	27,400	4.1	2,300	54,400	4.2
25 to 29	700	17,200	4.1	900	19,000	4.6	1,600	36,300	4.4
30 to 34	1,600	16,200	9.8	1,000	18,600	5.4	2,600	34,800	7.5
35 to 39	500	14,500	3.5	1,000	16,700	6.0	1,500	31,200	4.8
40 to 44	900	12,800	7.1	1,700	13,800	12.5	2,600	26,600	9.9
45 to 49	800	10,300	7.8	1,000	10,400	10.1	1,900	20,600	9.0
50 to 54	1,100	8,200	13.6	1,800	9,500	18.4	2,900	17,700	16.2
55 to 59	800	5,700	13.3	600	6,700	8.7	1,300	12,400	10.8
60 to 64	300	3,200	9.5	800	3,800	20.0	1,100	7,000	15.2
65 or over	1,700	5,900	28.7	1,600	7,000	22.3	3,200	12,900	25.2
<b>Total</b>	<b>9,500</b>	<b>121,000</b>	<b>7.9</b>	<b>11,400</b>	<b>132,900</b>	<b>8.6</b>	<b>21,000</b>	<b>253,800</b>	<b>8.3</b>
<b>Age-standardised rate</b>			<b>11.2</b>			<b>11.4</b>			<b>11.3</b>

<b>Non-Indigenous (GSS) - all areas - common criteria</b>									
	<b>Males</b>			<b>Females</b>			<b>Persons</b>		
	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/ profound limitation</b>
18 to 24	22,500	953,000	2.4	10,800	916,200	1.2	33,200	1,869,200	1.8
25 to 29	9,000	705,900	1.3	14,500	683,800	2.1	23,500	1,389,700	1.7
30 to 34	17,400	728,200	2.4	19,000	730,400	2.6	36,400	1,458,500	2.5
35 to 39	13,800	713,200	1.9	25,000	718,800	3.5	38,700	1,432,000	2.7
40 to 44	34,800	737,200	4.7	27,800	737,700	3.8	62,600	1,475,000	4.2
45 to 49	14,600	678,900	2.2	19,600	687,400	2.9	34,300	1,366,300	2.5
50 to 54	24,400	636,500	3.8	20,000	627,400	3.2	44,500	1,263,900	3.5
55 to 59	25,900	538,000	4.8	31,500	522,700	6.0	57,300	1,060,700	5.4
60 to 64	21,600	410,700	5.3	27,600	405,600	6.8	49,200	816,400	6.0
65 or over	98,300	1,016,100	9.7	178,300	1,206,000	14.8	276,600	2,222,200	12.4
<b>Total</b>	<b>282,200</b>	<b>7,117,800</b>	<b>4.0</b>	<b>374,100</b>	<b>7,236,000</b>	<b>5.2</b>	<b>656,300</b>	<b>14,353,800</b>	<b>4.6</b>
<b>Age-standardised rate</b>			<b>4.1</b>			<b>5.2</b>			<b>4.7</b>
<b>Age-standardised rate ratio</b>			<b>2.7</b>			<b>2.2</b>			<b>2.4</b>

**Table A4 (comparison 4): The relative impact of the broader criteria on the Indigenous estimate in non-remote areas was calculated and applied as a weight to the estimate for remote areas; the resulting overall Indigenous estimate was compared with the non-Indigenous estimate based on the broader criteria**

<b>Indigenous (NATSISS) - all areas - remote (common criteria weighted) + non-remote (broad criteria)</b>									
	<b>Males</b>			<b>Females</b>			<b>Persons</b>		
	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/profound limitation</b>
18 to 24	1,200	27,000	4.3	1,600	27,400	6.0	2,800	54,400	5.1
25 to 29	700	17,200	4.1	900	19,000	4.8	1,600	36,300	4.5
30 to 34	1,600	16,200	9.9	1,200	18,600	6.5	2,800	34,800	8.1
35 to 39	500	14,500	3.7	1,100	16,700	6.5	1,600	31,200	5.2
40 to 44	1,000	12,800	7.9	1,800	13,800	12.8	2,800	26,600	10.4
45 to 49	800	10,300	7.8	1,200	10,400	11.1	2,000	20,600	9.5
50 to 54	1,100	8,200	13.6	1,900	9,500	19.4	3,000	17,700	16.8
55 to 59	800	5,700	13.3	600	6,700	9.4	1,400	12,400	11.2
60 to 64	400	3,200	11.6	800	3,800	20.0	1,100	7,000	16.1
65 or over	1,700	5,900	28.7	1,600	7,000	22.3	3,200	12,900	25.2
<b>Total</b>	<b>9,700</b>	<b>121,000</b>	<b>8.1</b>	<b>12,600</b>	<b>132,900</b>	<b>9.4</b>	<b>22,300</b>	<b>253,800</b>	<b>8.8</b>
<b>Age-standardised rate</b>			<b>11.4</b>			<b>12.1</b>			<b>11.7</b>

<b>Non-Indigenous (GSS) - all areas - broad criteria</b>									
	<b>Males</b>			<b>Females</b>			<b>Persons</b>		
	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/profound limitation</b>	<b>Severe / profound limitation</b>	<b>Total population</b>	<b>% with severe/profound limitation</b>
18 to 24	23,300	953,000	2.4	10,800	916,200	1.2	34,200	1,869,200	1.8
25 to 29	9,200	705,900	1.3	15,500	683,800	2.3	24,700	1,389,700	1.8
30 to 34	17,400	728,200	2.4	19,800	730,400	2.7	37,100	1,458,500	2.5
35 to 39	16,800	713,200	2.4	27,100	718,800	3.8	43,900	1,432,000	3.1
40 to 44	38,400	737,200	5.2	31,900	737,700	4.3	70,200	1,475,000	4.8
45 to 49	14,700	678,900	2.2	29,200	687,400	4.2	43,800	1,366,300	3.2
50 to 54	24,400	636,500	3.8	23,500	627,400	3.7	47,900	1,263,900	3.8
55 to 59	28,800	538,000	5.4	34,600	522,700	6.6	63,500	1,060,700	6.0
60 to 64	21,900	410,700	5.3	27,800	405,600	6.9	49,700	816,400	6.1
65 or over	99,200	1,016,100	9.8	184,100	1,206,000	15.3	283,400	2,222,200	12.8
<b>Total</b>	<b>294,200</b>	<b>7,117,800</b>	<b>4.1</b>	<b>404,200</b>	<b>7,236,000</b>	<b>5.6</b>	<b>698,400</b>	<b>14,353,800</b>	<b>4.9</b>
<b>Age-standardised rate</b>			<b>4.3</b>			<b>5.6</b>			<b>5.0</b>
<b>Age-standardised rate ratio</b>			<b>2.7</b>			<b>2.2</b>			<b>2.4</b>

## **Appendix 2: Activity limitations and their severity**

People who were identified as having a disability in the 2002 NATSISS and the 2002 GSS were asked about their need for assistance with core activities: self-care, mobility, communication. Four levels of core activity limitation were determined, based on whether a person needs personal assistance with, has difficulty with, or uses aids or equipment for any of the core activities. A person's overall level of core activity limitation is determined by the highest level of limitation the person experienced in any of the core activity areas. The four levels of core activity limitation are:

- profound – always needing assistance to perform a core activity;
- severe – sometimes needs assistance to perform a core activity;
- moderate – does not need assistance, but has difficulty performing a core activity; and
- mild – has no difficulty performing a core activity but uses aids or equipment because of disability.

Core activities comprise the following tasks contributing to the definition of severe or profound core activity limitation:

- self-care – bathing or showering, dressing, eating, using the toilet, and bladder or bowel control;
- mobility – getting into or out of a bed or chair, moving around at home and going to or getting around a place away from home; and
- communication – understanding and being understood by others: strangers, family and friends.

## References

ABS (Australian Bureau of Statistics) 2003. Australian demographic statistics. Cat. No. 3101.0. Canberra: AGPS.

ABS (Australian Bureau of Statistics) 2004a. National Aboriginal and Torres Strait Islander Social Survey 2002. Cat. no. 4714.0. Canberra: ABS.

ABS (Australian Bureau of Statistics) 2004b. Experimental projections of the Aboriginal and Torres Strait Islander population 30 June 2001 to 30 June 2009. Cat. No. 3238.0 Canberra: AGPS.

AIHW (Australian Institute of Health and Welfare) & ABS (Australian Bureau of Statistics) 2005. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2005. AIHW Cat. no. IHW14 ABS Cat. no. 4704.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 1997. Effectiveness indicators and descriptors: First results for disability services. Canberra: AIHW (Welfare Division Working Paper No. 15).

AIHW (Australian Institute of Health and Welfare) 2005. Disability support services 2003-04: national data on services provided under the Commonwealth State/Territory Disability Agreement. Cat. no. DIS 40. Canberra: AIHW.

SCRCSSP 2005. Report on government services 2005. Volume 2. Melbourne: Commonwealth of Australia.