



Australian Government

Commonwealth Grants Commission

NEXT REVIEW

Relative Indigenous Disadvantage

STAFF DISCUSSION PAPER
CGC 2012-04

AUGUST 2012

Paper issued	1 August 2012
Commission contact officer	Tim Carlton, phone: 02 6229 8893, email ; tim.carlton@cgc.gov.au
Comments sought by	For discussion at Data Working Party meeting on 30 August 2012. Written comments should be emailed in Word format to secretary@cgc.gov.au .
Confidential material	It is the commission's normal practice to make written comments available to other States and to use them in the preparation of advice to the commission. Any confidential material contained in written comments which should not be provided to other States must be clearly identified or included in separate attachment/s, and details provided in the covering email. Identified confidential material will not be published shared with other States.

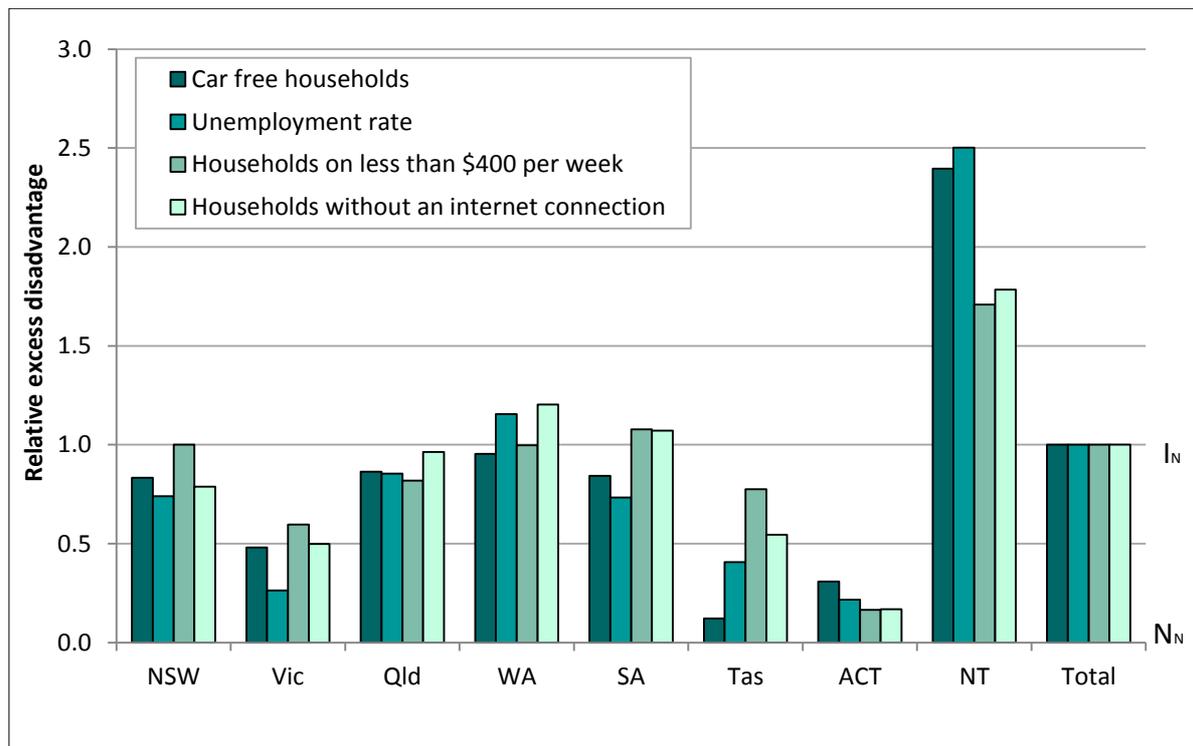
CONTENTS

BACKGROUND	1
WHAT DO WE DO NOW	2
DISAGGREGATION	4
Individual based measures	5
Area based measures	5
CAN WE FIND A PROXY?	6
Implementing the assessment	8
Remoteness	13
SEIFA	14
Indigenous concentration	15
Index of Relative Indigenous Socioeconomic Outcomes (IRISO)	16
Criteria for selecting a proxy for relative excess disadvantage	17
Health — Admitted patient expenditure per capita	18
Health — Mortality	19
Health — Low birthweight babies	20
Health — Indigenous type hospitalisations	21
Education — NAPLAN	22
Education — Year 12 retention rates	23
Law and order — Prisons	24
Welfare — Pension use	25
Census measures	26
ABS National Aboriginal and Torres Strait Islander Social Survey	27

BACKGROUND

- 1 During the 2010 Review, Western Australia said the needs of its Indigenous population were greater than those in comparable (remote or urban) regions of other States. It claimed in its submission and during the State visit that those needs arose from higher rates of community dislocation, the impact of the 'stolen generation' and the greater marginalisation of its urban Indigenous populations. It supported classifying Indigenous people into three groups: those who are assimilated into mainstream society; those who live in or around cities or towns, but who are disconnected from society; and those who live according to traditional culture.
- 2 We recognise that Indigenous people are not homogenous and that States spend much more on providing services to some Indigenous people. Such people are not evenly distributed across States.
- 3 Current assessments disaggregate the Indigenous population to allow for this heterogeneity. In various assessments, the population is disaggregated by remoteness (SARIA), socio-economic status (SEIFA), age and sex. However this may not account for all material differences between the profiles of Indigenous people in different States: that 25-29 year old Indigenous males in low socio-economic suburbs of Perth have materially different life circumstances (and demand for state services) to those of a similar group in Melbourne.
- 4 This paper asks whether there is some material differences between Indigenous people in different States that we are missing and how we should capture it.
- 5 Figure 1 suggests that the extent of disadvantage, measured using selected census indicators, differs remarkably between the States. Based to these indicators, the Northern Territory's Indigenous population experienced levels of disadvantage around twice that of the Australian average Indigenous person, while ACT Indigenous people have levels of disadvantage at around 20% of the national average (see Attachment A for a definition and measurement of Relative Excess Disadvantage).
- 6 Ideally, we would use an indicator related to State government services to measure differences between State's indigenous populations. However such indicators are not readily available by the geographic classifications we currently use or could consider. Therefore, we have assumed that certain measures of disadvantage taken from the census are broadly correlated with State service use.
- 7 It is worth noting that the level of heterogeneity shown in Figure 1 is greater than for most indicators considered in Attachment C. So while the census indicators show a proof of concept, we do not consider that the Northern Territory Indigenous need is likely to be twice what it is currently assessed as.

Figure 1 Relative excess disadvantage

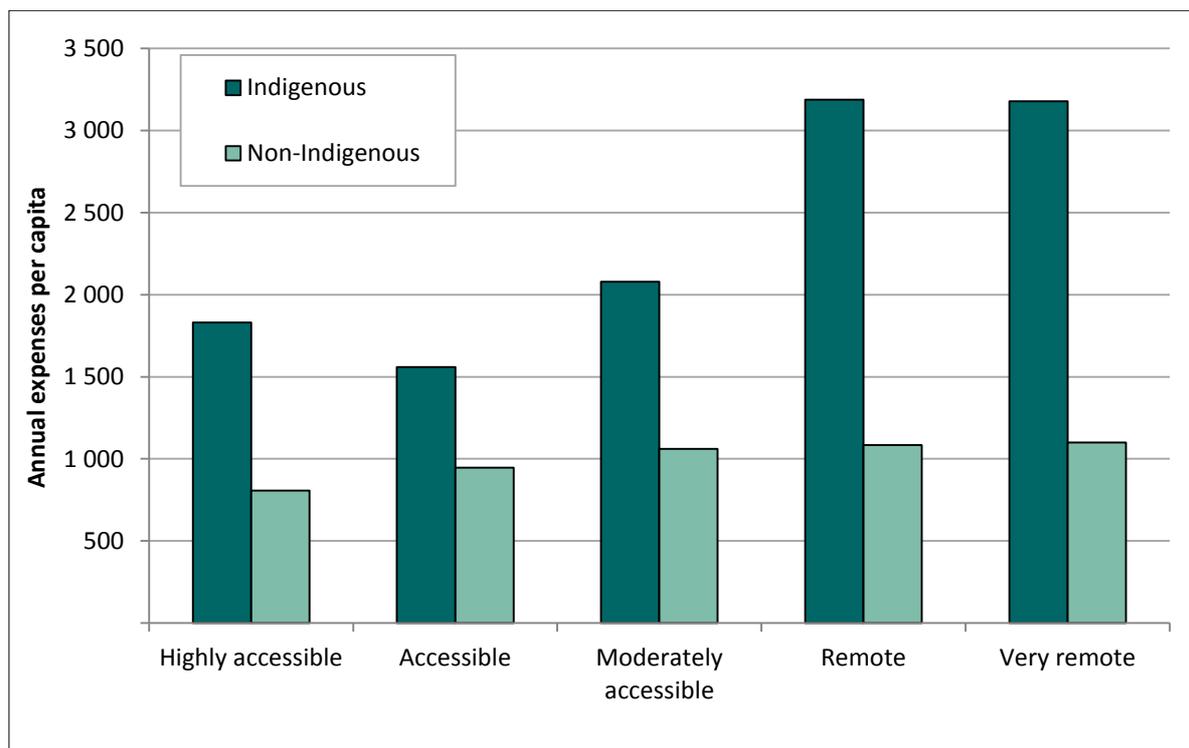


Source: Census.

WHAT DO WE DO NOW

- 8 To measure the impact of socio-demographic differences between States, our general approach is to disaggregate the population, and calculate spending per person in each category, and apply that spending to the number of people in each State in each category.
- 9 We disaggregate the Indigenous population to different extents in different categories using some or all of age, sex, SARIA and SEIFA. This disaggregation is designed to capture the heterogeneity of the Indigenous population. Age and sex capture differences within a community across their life. States, SARIA and SEIFA capture differences between different Indigenous sub-populations.
- 10 Remoteness is strongly correlated with expenses on Indigenous service provision. This is shown in Figure 2 using admitted patients as an example. The impact of remoteness on the non-Indigenous population services costs is very minor, while for the Indigenous population it is large. This suggests that it is not the distance from services per se that is driving the higher costs, but rather that remoteness is a strongly correlated with some other underlying driver, which we will call the Indigenous X factor.

Figure 2 Admitted patient expense per capita



Source: CGC calculations.

- 11 SEIFA, as a measure of disadvantage, captures socio-economic differences between Indigenous populations. Western Australia has expressed concerns that as the Indigenous population represents only a small proportion of the population in many CDs, SEIFA captures the level of general disadvantage in the population, rather than the level of Indigenous disadvantage. These, and other issues with SEIFA, are discussed in a separate paper for the data working party.
- 12 The extent to which SARIA and SEIFA capture the differences between Indigenous populations is considered in Attachment B.
- 13 Table 1 illustrates that the level disaggregation currently employed varies across categories. In some cases, notably the health assessments, we disaggregate the Indigenous population in detail, and therefore capture more of the heterogeneity of the Indigenous population. In other cases, such as schools or law and order, the Indigenous population is not as significantly disaggregated, and therefore any heterogeneity of the Indigenous population is largely ignored.

Table 1 Disaggregation of Indigenous population, current assessments

	SARIA	SEIFA	Age	Other
Schools	—(a)	—(b)	School age	—
Post school education	Yes	—	15-64 year olds	Language spoken
Admitted patients	Yes	Yes	Yes	—
Community and other health	Yes(a)	Yes	Yes	Sex
Welfare and housing	—(a)	Pensions	—	—
Services to communities (c)	Yes(a)	—	—	Discrete Indigenous communities
Law and order	—(a)	Yes	Yes	Sex

- (a) Regional costs are calculated on the impact of remoteness on costs for all people, not for Indigenous and non-Indigenous people separately. Therefore the Indigenous specific impact of remoteness is not captured.
- (b) In Schools, costs for disadvantaged students are calculated for all disadvantaged students, not cross classified by Indigeneity, therefore the Indigenous specific impact of low SES is not captured.
- (c) Services to communities contains multiple components, only the community development factor includes disaggregation by Indigeneity, SARIA and discrete Indigenous communities.

- 14 Our standard approach of disaggregating by SARIA and SEIFA does appear to effectively capture much of the differences between States in the attributes of their Indigenous populations. However:
- it does not appear to capture all material differences
 - our standard approach can only be readily applied to a fraction of State expenses, so in many categories the heterogeneity that can be explained by SARIA and SEIFA is ignored.
- 15 The next section considers whether a form of disaggregation either replacing SARIA and SEIFA, or supplementing them could effectively capture all material differences between States' Indigenous populations.

DISAGGREGATION

- 16 If different identifiable groups of Indigenous people place materially different demands on State services, we could disaggregate this population more than under the current assessments. We could use our usual approach of measuring the use and cost of services by the different groups and the shares of each group in each State, to calculate assessed spending for each State.
- 17 First, it would be necessary to identify the defining variables by which we could further disaggregate the Indigenous population. There are two broad groups of variables with which we could disaggregate the Indigenous population: Individual based measures or area based measures.

Individual based measures

- 18 There are a number of individual or household based measures which we could use to disaggregate the Indigenous population. These measures include disaggregating:
- those who speak an Indigenous language from those who speak only English
 - Aboriginals from Torres Strait Islanders
 - stolen generation from others
 - the level of assimilation into mainstream society.
- 19 These options for disaggregating would be likely to produce groups with quite different patterns of use of State services. However, they all fail from one or more of the following problems:
- they only capture a small proportion of the heterogeneity of the Indigenous population we are attempting to measure
 - data do not exist on the population in these groups
 - data do not exist on the use and costs of services by these groups.

Area based measures

- 20 In Attachment B, we examine which area based measures best explain interstate differences in Indigenous disadvantage. The measures are:
- SARIA
 - SEIFA
 - Indigenous concentration
 - Index of Relative Indigenous Socioeconomic Outcomes (IRISO)
- 21 SARIA and SEIFA both explain a significant amount of the variation between Indigenous people in different States in their disadvantage as measured by census indicators. However, significant variation remains that is not explained by just SARIA and SEIFA. Standardising by additional geographic variables may reduce the differences between States in some cases, but in all cases, considerable and material differences remain.
- 22 Of the area-based measures we have considered, IRISO best addresses the issue of differences in the X factor between States. However, using this geographical classification leads to the prospect of policy contamination . With 68% of the Indigenous population in the bottom IRISO quintile living in the Northern Territory, the Northern Territory policies on expenditure on Indigenous people would have a major influence on the GST allocated to it.
- 23 Rather than finding new geographical classifications, it may be effective to disaggregate further using SARIA and SEIFA. One option would be to use SEIFA deciles rather than quintiles. While this may capture slightly more of the x-factor than is

currently collected, it does mean that we are disaggregating a small population group into very small components, which cannot be done reliably.

CAN WE FIND A PROXY?

- 24 An approach might be to produce a State factor of relative Indigenous disadvantage, as set out in Attachment C.
- 25 We know there are a range of underlying factors that lead to Indigenous people, on average, having different experiences to non-Indigenous people.
- 26 These factors have differential impacts on different services. For example, the average Indigenous person may be 14 times as likely to be imprisoned, but has only twice the hospitalisation expenditure of an average non-Indigenous person. However, we consider that the factors work in a relatively consistent manner.
- 27 For example, let us assume, for a moment, that the prevalence within a population group of low birth-weight babies proxies that group's use of health services and that we can use these differences between groups as indicators of cost difference.
- 28 As Figure 3 shows, Tasmanian Indigenous babies are more likely than non-Indigenous babies to be small, but not as likely as the national average Indigenous baby. We would consider therefore that Tasmanian Indigenous cost would be lower than the national average. Western Australian babies are more likely than average to be of low birth-weight. Therefore, under our assumption that birth-weight proxies use of services, Western Australian Indigenous people would use more services than the national average Indigenous person.

Figure 3 Proportion of babies weighing less than 2500g



Source: COAG reform Council, Indigenous reform agreement report 2008-09 vol1, using data from AIHW Perinatal Statistics.

- 29 In this example, the Tasmanian Indigenous population has small babies at a rate 34% of the distance between the non-Indigenous and national average Indigenous populations. We might expect they would have:
- hospitalisation rates 34% of the distance between those of the average non-Indigenous and Indigenous person
 - arrest rates 34% of the distance between those of the average non-Indigenous and Indigenous person
- 30 Western Australia would have rates 120% of the distance between those of the average non-Indigenous and Indigenous person
- 31 This approach to assessments is quite different to the Commission’s usual approach of applying national average cost and use patterns to State specific demographics. However it is not unique, following the same approach as the interstate wages assessment, which also identifies State specific levels for a variable.
- 32 We will need to consider whether the proxy indicators that we select can be generalised. For example, the prevalence of low birth-weight babies may reflect relative expenditure needs of Indigenous people in different States for:
- neonatal care
 - all health care, or
 - all State government services.

- 33 Consideration of this issue will revolve around both how well we consider an indicator proxies service use, but also whether alternative appropriate indicators are available. For example, it seems unlikely that an appropriate measure will be found which relates directly to justice services. We could, therefore, either extrapolate from health or other services, or not have a differential assessment for relative indigenous disadvantage within Justice services.
- 34 While different services exhibit somewhat different patterns of relative excess disadvantage, there are general patterns which exist across services. The Tasmanian Indigenous population generally has considerably lower levels of excess disadvantage than the national average, while the Western Australian and Northern Territory populations are generally considerably higher than the national average. The data in Attachment C do not currently show the extent to which this pattern remains when we control for SARIA and other socio-demographics. However, in most datasets, it would be possible to do so.

Questions for States

What are the pros and cons of this approach?

Which indicators could we use?

- From the list in Attachment C
- Are there other potential indicators

Where can we extrapolate?

Is there an alternative approach?

Implementing the assessment

- 35 Our assessments currently disaggregate the Indigenous population by age, sex, SARIA and/or SEIFA. This disaggregation will capture most of the differences between States in the Indigenous populations. To also use a simple State wide measure of disadvantage could result in double counting of some elements of Indigenous disadvantage.
- 36 There are two strategies that would avoid this double counting:
- calculate relative interstate disadvantage of comparable people
 - stop disaggregating the Indigenous population and use only the proxy.
- 37 **Calculate the relative interstate disadvantage of comparable people.** It would be possible using some administrative datasets to calculate the relative disadvantage of different States using small groups. This would enable us to calculate the standardised level of disadvantage in each State. The range of variables we could standardise for may be somewhat limited. While some datasets enable us to standardise for age and remoteness, few would enable us to standardise for SEIFA.

- 38 If we were to identify a measure of disadvantage from the Census, depending on the measure, we may be able to standardise fully and avoid double counting.
- 39 **Stop disaggregating** The second strategy to avoiding double counting would be to not disaggregate the Indigenous population. We would continue to disaggregate the non-Indigenous population as appropriate, but the differences in the population structure between States for Indigenous people would be measured by the interstate Indigenous factor, rather than by disaggregating the Indigenous population into small groups.

Questions for States

Which approach is better? Why?

Do States have other views on any other issues presented in or related to this paper?

ATTACHMENT A: RELATIVE INDIGENOUS DISADVANTAGE

1 In this attachment, we show how a measure of relative indigenous disadvantage can be calculated. This has been calculated to quantify the X factor, and enables direct comparison of different indicators on a common scale. For a State’s Indigenous population, it measures the level of disadvantage above that of the national average non-Indigenous population relative to the national average Indigenous disadvantage above that of the non-Indigenous population. This is illustrated in Figure A1.

Figure A1 Proportion of babies weighing less than 2500g



2 Table A1 illustrates how relative excess disadvantage values can be interpreted.

Table A1 **Interpreting relative excess disadvantage**

Relative excess disadvantage value	Implication for Indigenous population
Less than 0%	Less disadvantaged than the national average non-Indigenous population
0%	Just as disadvantaged as the national average non-Indigenous population
0% to 100%	Less disadvantaged than the national average Indigenous population
100%	Just as disadvantaged as the national average Indigenous population
Above 100%	More disadvantaged than the national average Indigenous population

Relative excess disadvantage is calculated as $\frac{I_S - N}{I - N}$, where

I is the Indigenous rate for a variable

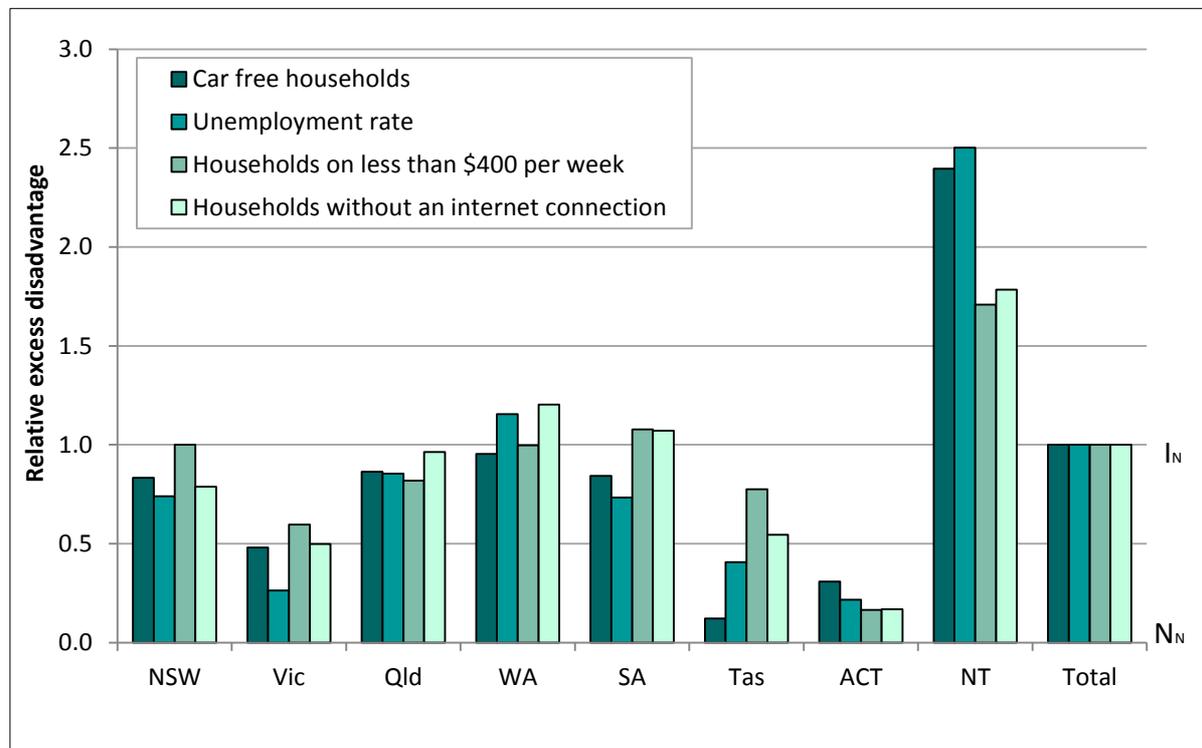
N is the non-Indigenous rate for the indicator

S is the State.

ATTACHMENT B: DISAGGREGATING THE INDIGENOUS POPULATION

3 Figure B1 suggests that the extent of disadvantage, measured using selected census variables, differs markedly between the States. This attachment examines whether disaggregating the Indigenous population by some geographic classifications could explain the material differences that we observe between populations. For example, does the remoteness of Northern Territory’s Indigenous population explain the higher rates of disadvantage observed in Figure B1?

Figure B1 Relative excess disadvantage



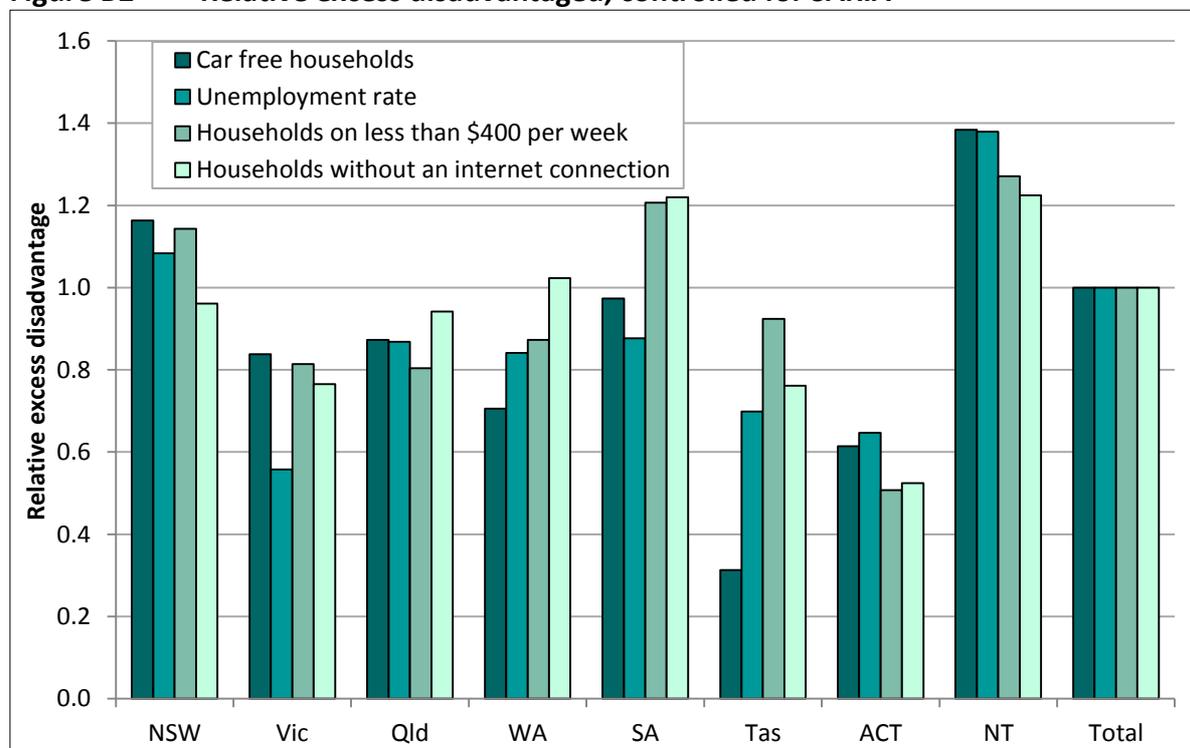
Source: Census.

4 Ideally, we would use an attribute related to State government services to measure whether each area based measure appropriately captures differences between Indigenous people in different States. However, such measures are not readily available by the geographic classifications we are testing. Therefore, we have assumed that certain measures of disadvantage taken from the census are somewhat correlated with our ideal measures of State service use. These four indicators have been selected from the suite used to produce SARIA. The consideration of these indicators is discussed in Attachment D.

Remoteness

- 5 Indigenous people in remote areas tend to have higher levels of disadvantage. For example, Indigenous unemployment rates increase from 13% in highly accessible areas to 58% in very remote areas. This relationship also holds for the other measures of disadvantage shown in Figure B2. Removing the effect of remoteness lowers the relative excess disadvantage for the Northern Territory, and increases it for Victoria, Tasmania and the ACT.
- 6 Based on these measures, an assessment that used SARIA would under-estimate the Northern Territory assessed expenses on Indigenous people by around 20% to 40%, while the ACT assessed expenses on Indigenous population would be around twice their actual need.

Figure B2 Relative excess disadvantaged, controlled for SARIA



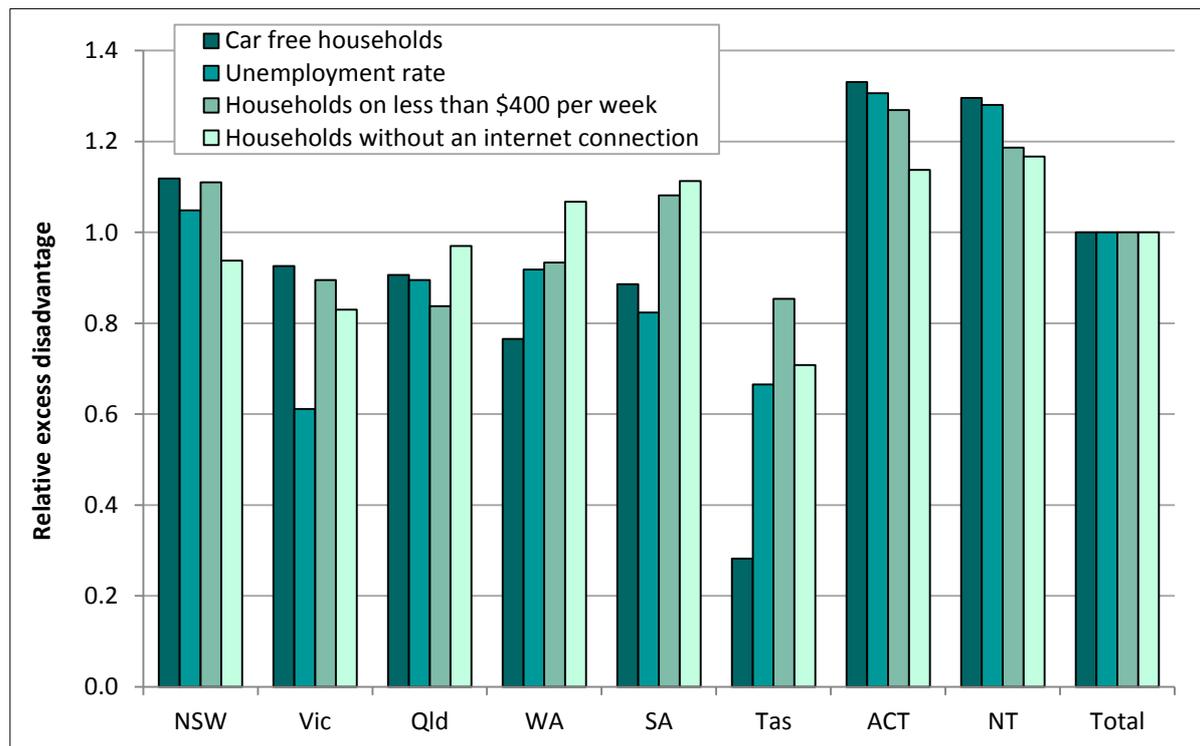
Source: Census.

- 7 While controlling for SARIA alone does not remove all differences between States in their level of disadvantage, it does somewhat change the relative levels of disadvantage between the States. Notably, on these indicators, Western Australia has a less disadvantaged Indigenous population than average.

SEIFA

- 8 Controlling for both SARIA and SEIFA removes more interstate differences in the 4 indicators, as shown in Figure B3. The Northern Territory is then only around 20% above the national average. Victoria and the Tasmania remain below average.
- 9 The ACT Indigenous population appear to be among the most disadvantaged in the country, after controlling for remoteness and SEIFA. This is an unexpected result, and one that requires further investigation.
- 10 Each SEIFA quintile contains 20% of the total population. However, because the Indigenous population is concentrated at the more disadvantaged end of the distribution, the most disadvantaged quintile contains over half the Indigenous population, and the least disadvantaged only 4% of the Indigenous population. Having Indigenous specific quintiles (20% of the Indigenous population in each Quintile) reduces the differences between States slightly more, but large differences remain.
- 11 This indicates that controlling for SEIFA and SARIA does not explain all material differences in the relative Indigenous disadvantage between States.

Figure B3 Relative excess disadvantaged, controlled for SARIA and SEIFA



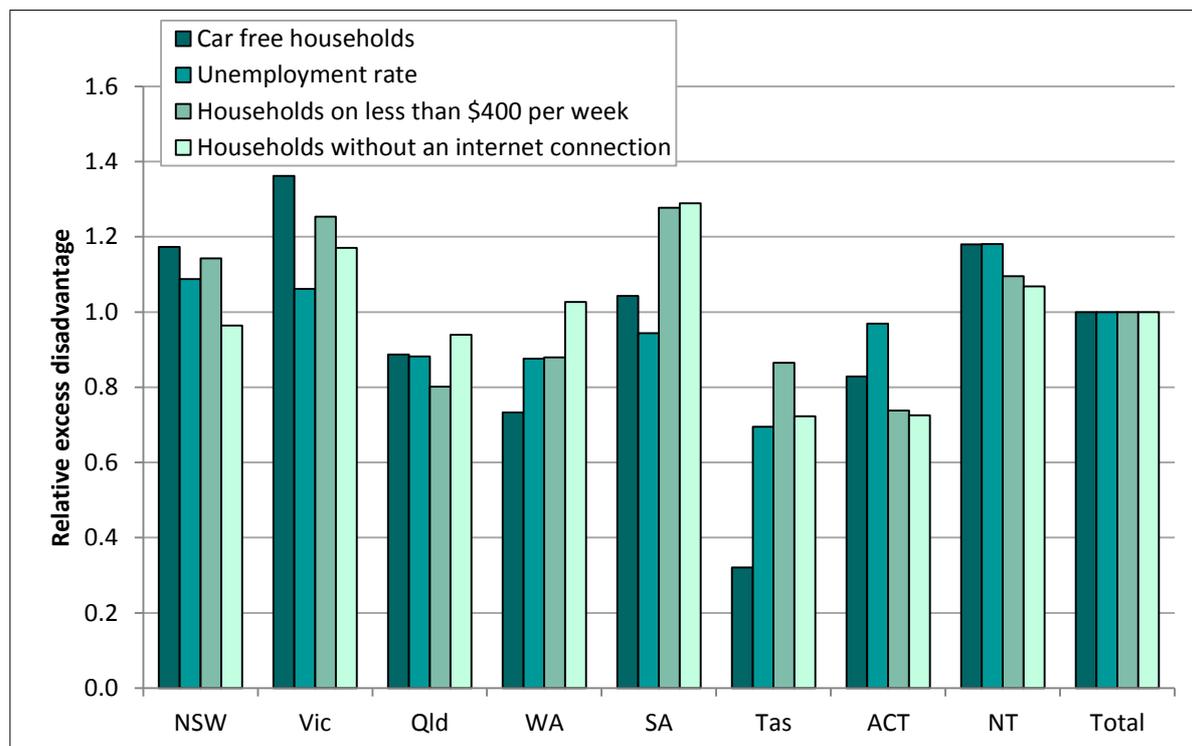
Note: This analysis uses Standard SEIFA quintiles, reflecting current assessments. It does not use Indigenous specific quintiles discussed in paragraph 10.

Source: Census.

Indigenous concentration

- 12 It is possible to measure the proportion of the population that is Indigenous in each area. Indigenous people living in predominantly non-Indigenous areas may be considered more assimilated than those living in predominantly Indigenous areas.
- 13 Figure B4 shows that Indigenous concentration explains a lot of the difference between States in the selected variables, although the impact appears to differ between States. For example, after controlling for SARIA and Indigenous concentration, Queensland and Western Australia have lower than average levels of disadvantage, while Victoria has higher levels.
- 14 This could reflect that with very different sized Indigenous populations, a certain level of concentration represents different things in different States. For example, only 0.4% of Melbourne’s population is Indigenous, and so a CD with more than 2% Indigenous represents a high level of concentration, and presumably disadvantage, while in Darwin such a level would represent a very low concentration, and presumably a low level of disadvantage.
- 15 To capture the differences, for example, between the town camps of Alice Springs and the Alice Springs suburbs; or between La Peruse or Redfern, and the remainder of the surrounding Sydney suburbs, it would be necessary to do this analysis at a very fine level of geography. This would preclude calculating use rates from most administrative datasets which are not usually available at finer levels of geography.

Figure B4 Relative excess disadvantaged, controlled for SARIA and Indigenous concentration

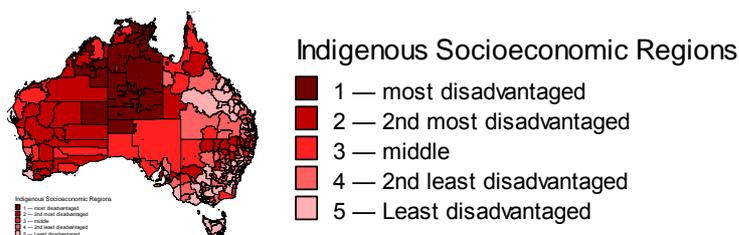


Source: Census.

Index of Relative Indigenous Socioeconomic Outcomes (IRISO)

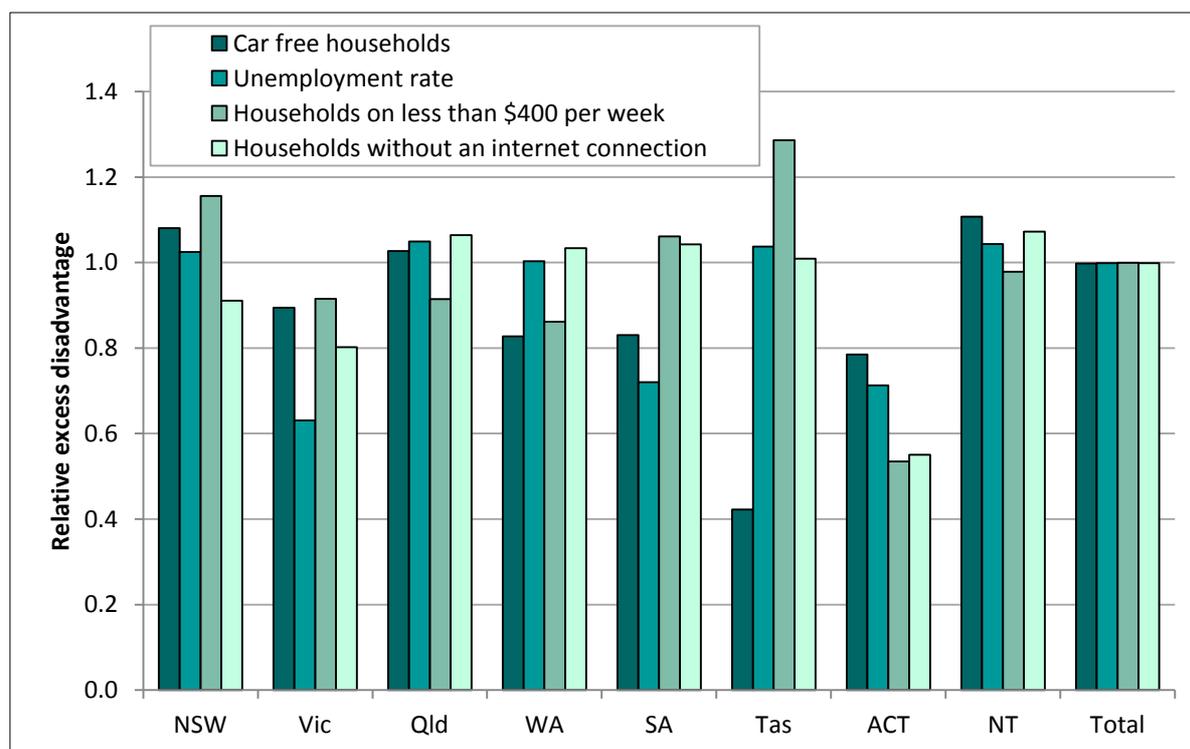
- 16 The Centre for Aboriginal Economic and Population Research (CAEPR) has produced a SEIFA type index for Indigenous people. The IRISO index, in Figure B5, shows that Tasmania’s Indigenous population are among the least disadvantaged in the country, while those across the Northern Territory are among the most disadvantaged.
- 17 Using quintiles from this index gives relative excess disadvantage values of around 100% for all States except Victoria and the ACT. This suggests that IRISO is relatively effective at controlling for the X factor in all States except Victoria and the ACT (Or that IRISO accurately captures the X factor, but that our 4 census indicators do not).
- 18 The key problem with using IRISO is the risk of policy contamination. 68% of Indigenous people living in the most disadvantaged quintile live in the Northern Territory. Therefore, the Northern Territory would largely determine the standard of service provided to Indigenous people living in these areas.

Figure B5 Quintiles of Index of Relative Indigenous Socioeconomic Outcomes



Source: CAEPR Working paper 50/2009.

Figure B6 Relative excess disadvantage, controlled for the IRISO



Source: Census.

ATTACHMENT C: POTENTIAL INDICATORS OF RELATIVE EXCESS DISADVANTAGE

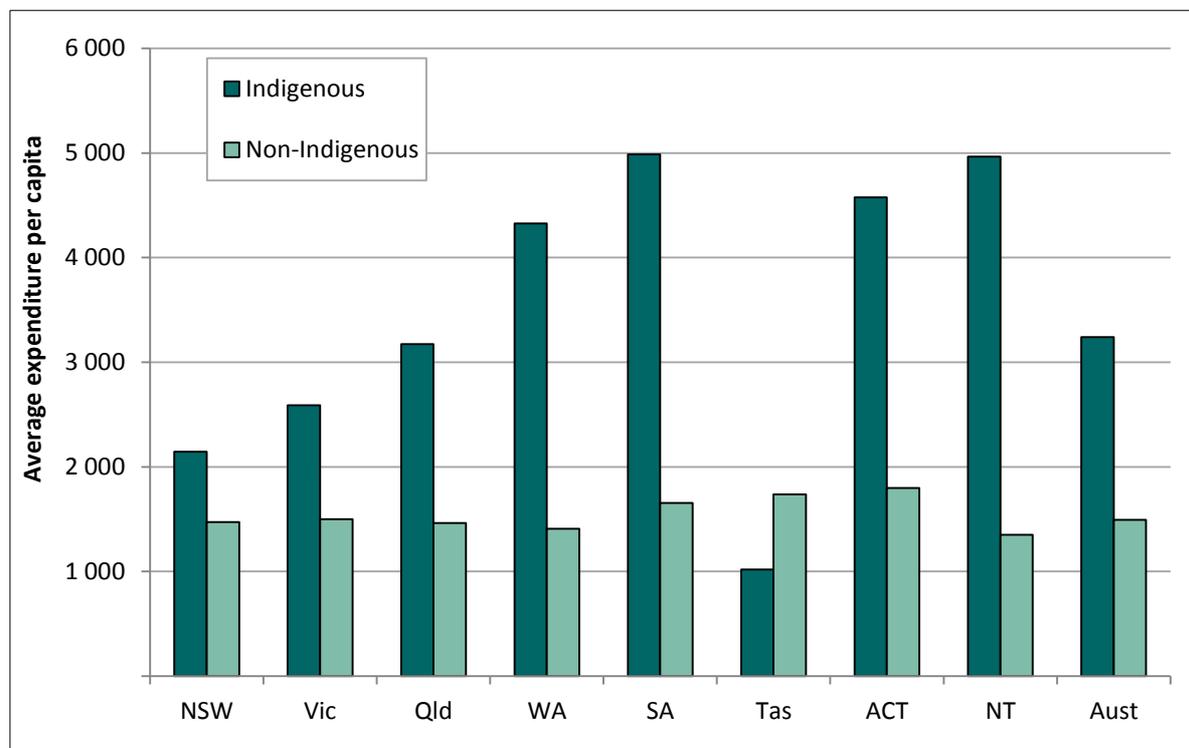
Criteria for selecting a proxy for relative excess disadvantage

- 19 To decide which data set or sets might best be used as a proxy for the relative excess disadvantage faced by Indigenous people in each State, it is important to consider their reliability, relevance, policy neutrality and whether they are affected by other data issues.
- **Reliability.** We consider how reliable and fit for purpose the data are. We consider whether the data are available nationally and on a comparable basis.
 - **Relevance.** We consider the extent to which each indicator could be a proxy for the drivers of State expenditure on Indigenous people. For those indicators that are short listed for a future paper, we will consider this link in a more statistical and rigorous manner. For example, we will need to consider whether for small areas, there is a strong relationship between State spending and each indicator.
 - **Policy neutrality.** If State differences are the product of differences in policy rather than the innate differences between their Indigenous populations that would be a concern, given we are using State specific data to estimate needs in that State.
 - **Data issues.** The ability to disaggregate indicators to sub-state geography is important because:
 - it allows us to retain some socio-demographic disaggregation within assessments without double counting
 - it will assist with detailed analysis of the indicator.

Health — Admitted patient expenditure per capita

20 Figure C1 shows the expenditure on hospital services for Indigenous and non-Indigenous people.

Figure C1 Hospital expenditure per capita, 2008-09



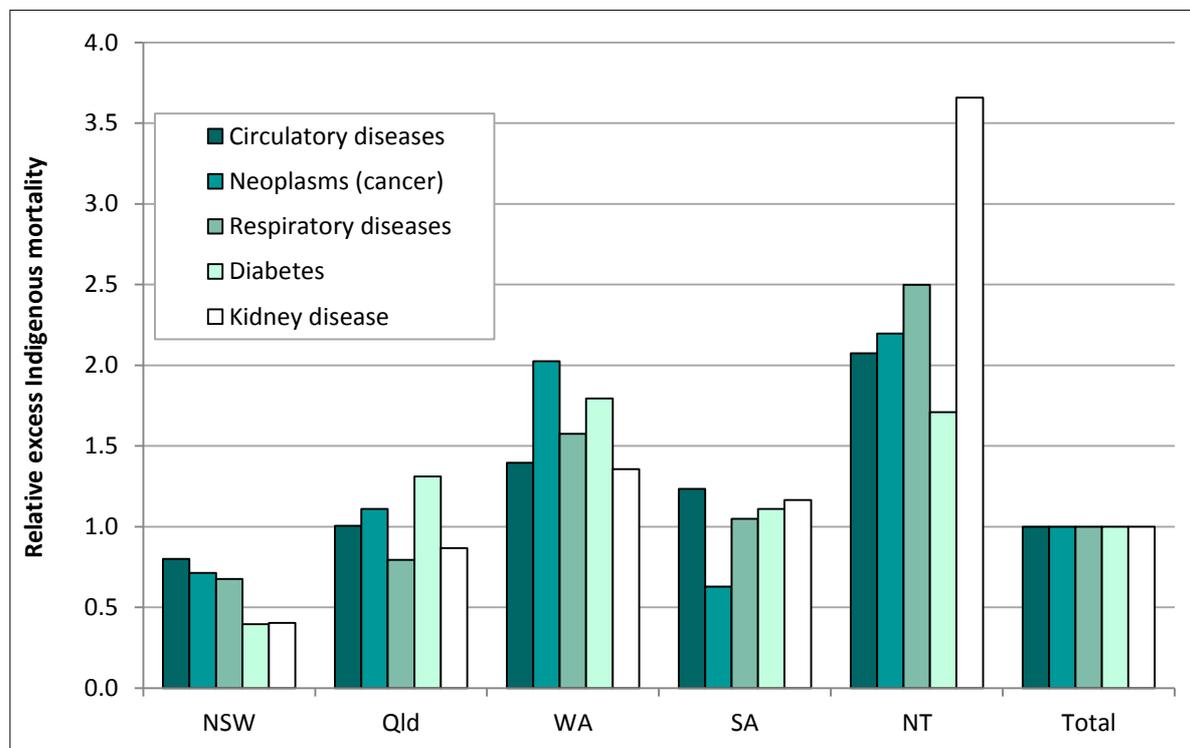
Source: Productivity Commission, Indigenous Expenditure Review, using data from AIHW.

- 21 **Reliability.** The Indigenous identification in the administrative data set and the Census may not be consistent. Some people are identifying as Indigenous in the Census but are not on admission to hospital. While this impact is large for Tasmania, it may also create bias in other States. There are also assumptions made in the allocation of expenditure to individuals.
- 22 **Relevance.** These data are a perfect measure of State spending.
- 23 **Policy neutrality.** Access to hospital is determined on merit, rather than race, so the higher expenditure on Indigenous people would generally reflect underlying health issues. However, if one State tends to build hospitals in areas more accessible to Indigenous people than another State, this could influence the relative use.
- 24 In addition to this, in some locations, the services offered as admitted patients in one State may be offered by either hospital emergency departments, or community health facilities in other States.
- 25 **Data issues.** These data are collected at Statistical Local Area (SLA).
- 26 **Conclusion.** These data do not have the potential to be used without major adjustments or improvements to the data.

Health — Mortality

27 Interstate patterns of relative excess mortality are relatively constant, regardless of whether we look at mortality from cancer where Indigenous death rates are only 30% higher than non-Indigenous, or at diabetes where they are 7 times higher.

Figure C2 Relative excess Indigenous mortality



Note: Total refers to total of States shown, data not available for Victoria, Tasmania or ACT.

Source: COAG reform council.

- 28 **Reliability.** The ABS has produced cause of death statistics for the 5 larger Indigenous States. For these States the data are generally considered to be suitably reliable. However, in Victoria, Tasmania and the ACT, the data are not reliable.
- 29 **Relevance.** While not a direct driver of expenditure, mortality patterns are likely to be a somewhat useful proxy of health experience and health expenditure.
- 30 **Policy neutrality.** This is as policy neutral a measure as any socio-demographic indicator we use.
- 31 **Data issues.** This data could be produced down to SLA level. Data quality would be somewhat lower at sub-state areas, but may still be fit for purpose. We would need to find a method for dealing with the absence of data from Victoria, Tasmania and the ACT.
- 32 **Conclusion.** High quality information on the relative disadvantage for 90% of the Indigenous population may be worthwhile pursuing in conjunction with other measures.

Health — Low birthweight babies

33 There is a significantly higher risk of having a low birth-weight baby in Western Australia, South Australia or the Northern Territory than in the other States. This dataset rates well against most of the criteria.

Figure C3 Relative excess risk of low birthweight babies



Source: AIHW.

34 **Reliability.** This is a very high quality dataset.

35 **Relevance.** Low birth-weight babies do require higher interventions than healthy weight babies, and so represent a direct indicator of a very small proportion of health expenditure, both in the admitted patients, and community and other health assessments. However, they do represent a very small proportion. It would only be worthwhile using this indicator if we believed that this was a general proxy of a broader range of requirements for health and other services.

36 **Policy neutrality.** This is a policy neutral measure of health needs of the population.

37 **Data issues.** This data could be produced down to SLA level.

38 **Conclusion.** This should be a viable dataset.

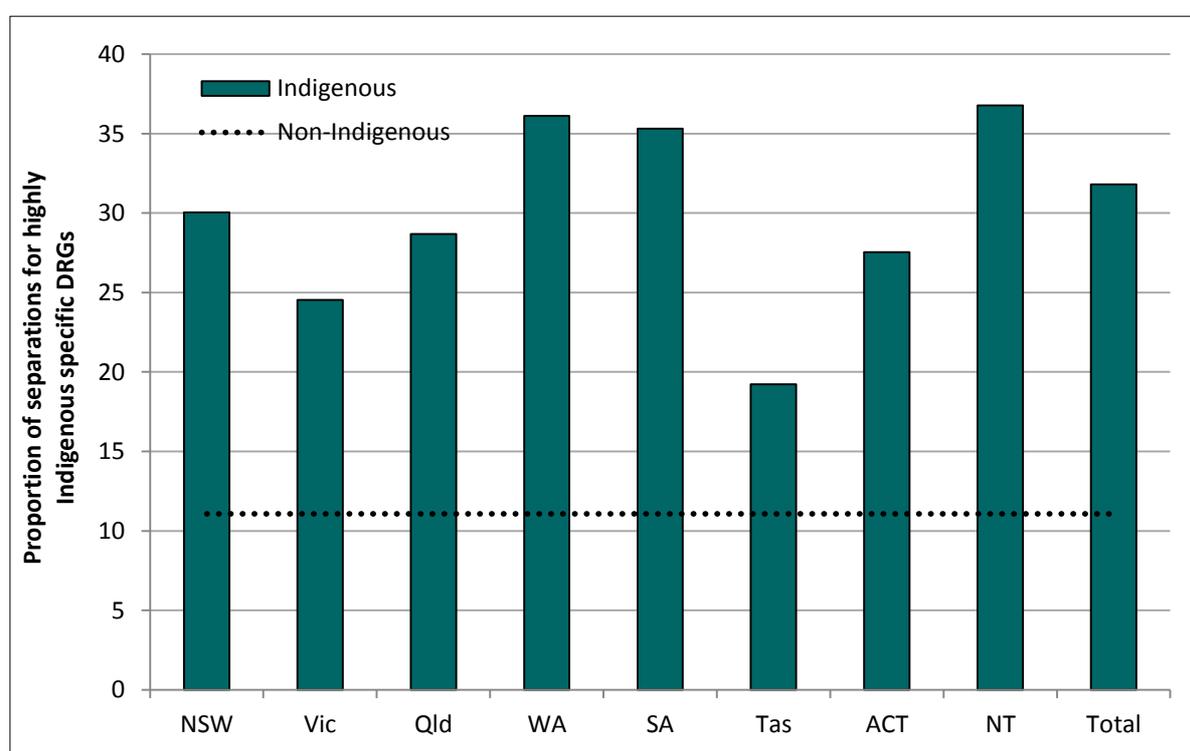
Health — Indigenous type hospitalisations

39 Indigenous people represent 4% of all separations, but more than 8% for a range of treatments for conditions more common among Indigenous people, including:

- severe nutritional disturbance
- a range of alcohol and drug treatments
- burns and injuries.

40 Nationally, 32% of Indigenous and 11% of non-Indigenous separations are for these conditions.

Figure C4 Hospital separations for highly Indigenous specific conditions, 2006-07



Source: AIHW Hospital separations.

41 **Reliability.** This is a very high quality dataset. Even in the ACT it is based on a respectable 621 Indigenous separations.

42 **Relevance.** This seems to be a very relevant indicator of the health status of Indigenous people in each State and it seems quite likely that it would be strongly predictive of the impact on health use rates and on costs.

43 **Policy neutrality.** Differences between States in the range of services offered by community health centres and hospitals in certain locations may have some impact on this indicator.

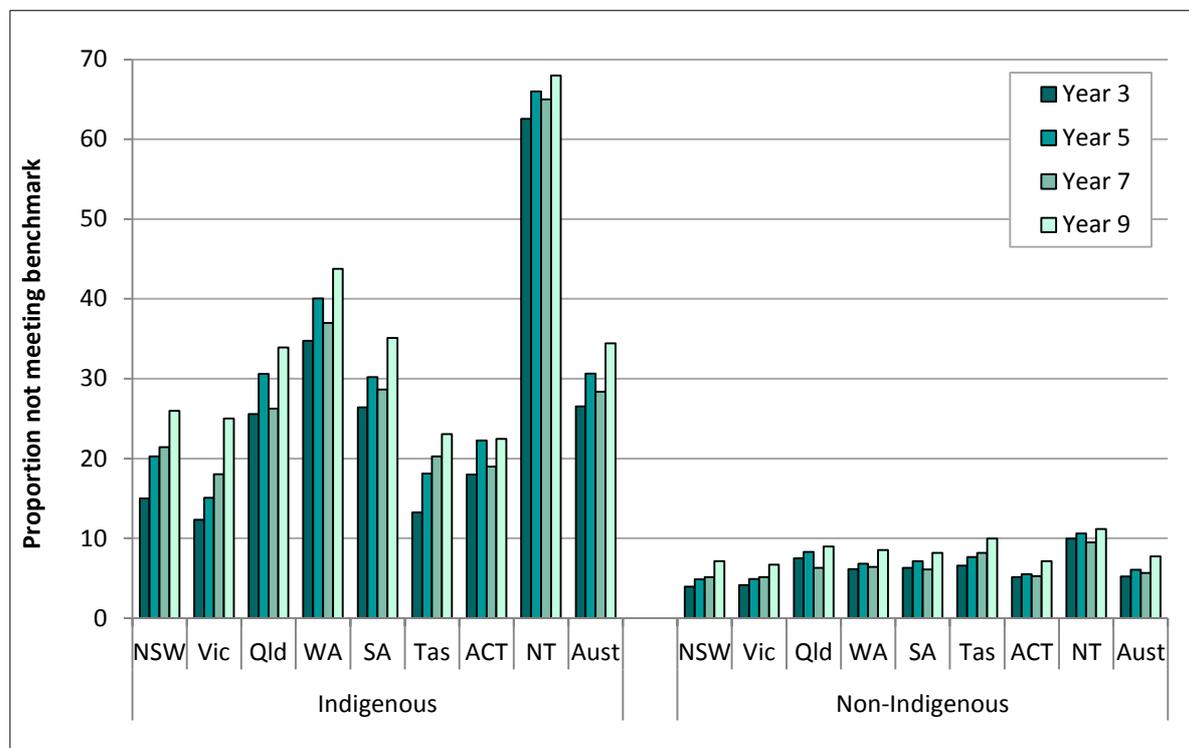
44 **Data issues.** This data could be produced down to SLA level, and aggregated to SARIA on that basis, but not meaningfully available by SEIFA.

45 **Conclusion.** This should be a viable dataset.

Education — NAPLAN

46 Indigenous school students are less likely than non-Indigenous school students to meet the national minimum standards for literacy and numeracy.

Figure C5 Proportion of students not meeting national benchmarks



Note: Simple average of the proportions not meeting benchmarks in each discipline.

Source: ACARA.

47 **Reliability.** NAPLAN data are of very high quality, with no issues of differential identification.

48 **Relevance.** NAPLAN results are a good measure of the students who need support.

49 **Policy neutrality.** As an outcome measure rather than an input measure, differences between States could reflect policy rather than population differences, however:

- the differences are several times greater than the difference between children with University educated parents (2%), and those whose parents finished year 11 or below (12%). It is difficult to imagine that the educational policies differ sufficiently to have an impact of such a magnitude.
- The differences between States are almost entirely evident by year 3, while any policy differences between year 3 and year 9 have very little impact.

50 Staff consider that the policy variations are very small, although not non-existent.

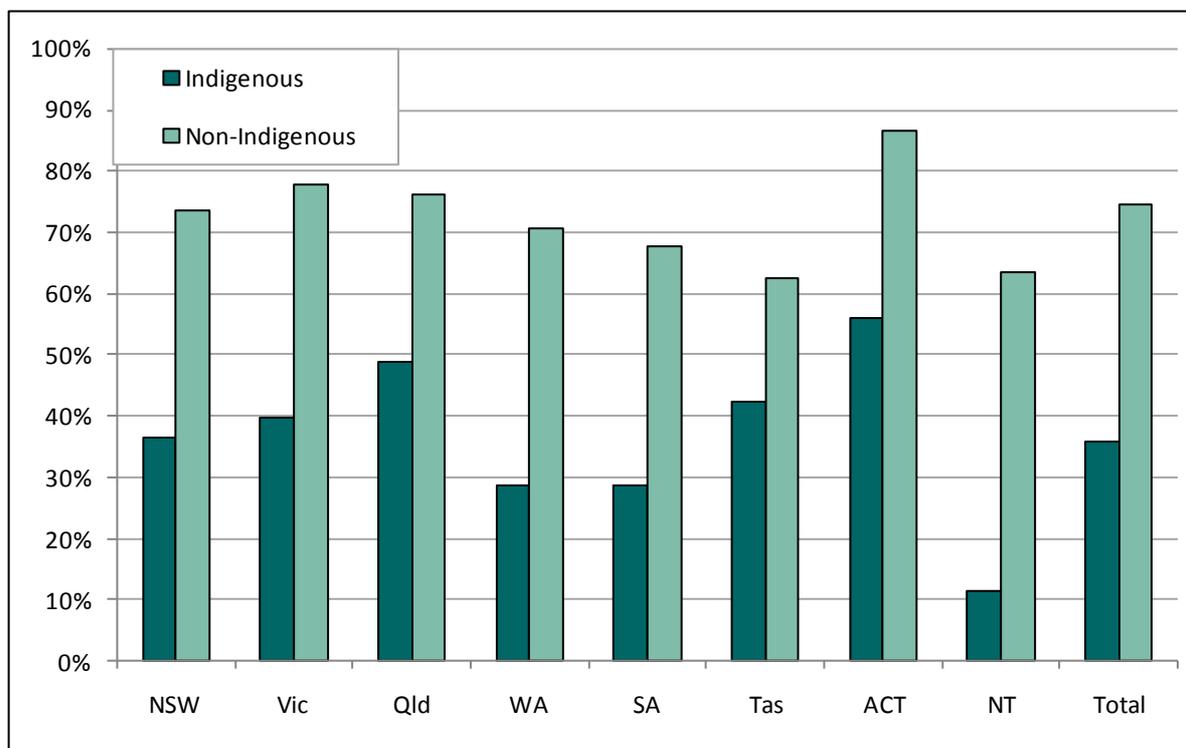
51 **Data issues.** Data are available by the address of the school, and possibly the parents.

52 **Conclusion.** These data have some potential to be used as part of a suite to measure relative excess disadvantage.

Education — Year 12 retention rates

53 Participation in later years of schooling is the one measure we have selected where Indigenous use is lower than that of non-Indigenous people.

Figure C6 Proportion of 20-24 year olds who completed Year 12



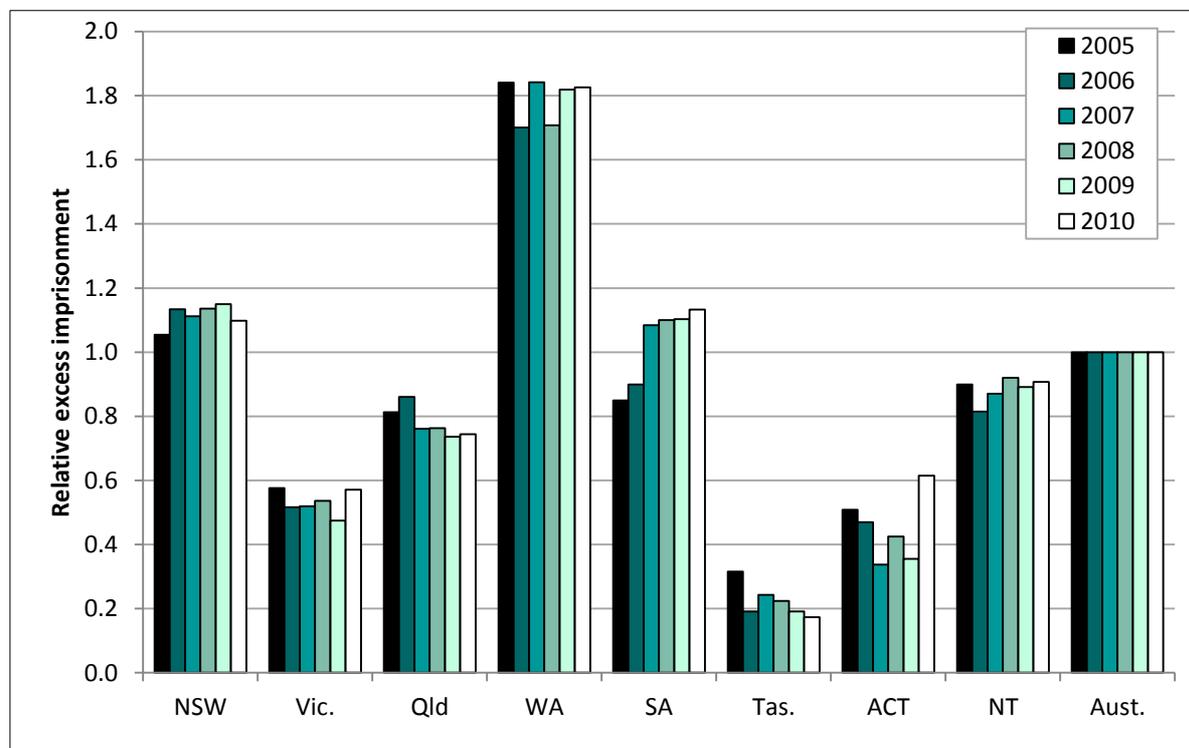
Source: Census.

- 54 **Reliability.** There are a range of different measures of late school participation. This measure is not contaminated by differential identification patterns or migration patterns that some other measures are affected by.
- 55 **Relevance.** The enrolment of students in late high school has a significant and very real impact on the cost of delivering school services.
- 56 **Policy neutrality.** States do have some differences in policies that affect their year 12 participation, most notably the age at which students reach year 12. The college system in Tasmania may also have an impact.
- 57 **Data issues.** Being based on Census data, it is possible to calculate year 12 participation rates for sub-State areas.
- 58 **Conclusion.** These data have the potential to be used to measure Relative Excess Disadvantage.

Law and order — Prisons

59 Indigenous imprisonment data are available for all States. However, the data set has a range of problems.

Figure C7 Relative excess imprisonment



Source: ABS: ERP and Prisons Australia (4517.0)

- 60 **Reliability.** The Indigenous identification is likely to be different between the numerator (prison administrative data) and the denominator (ERP). These data are not comparable.
- 61 **Relevance.** These data are very relevant, and if other issues could be resolved, would be an ideal indicator.
- 62 **Policy neutrality.** States have very different policies relating to incarceration, which lead to very different imprisonment rates for Indigenous and non-Indigenous people. Some of this variation is likely to reflect policies such as three strikes, or approaches to parole violations. Policies such as these vary significantly between States, and appear to affect imprisonment rates of Indigenous people and non-Indigenous people differentially.
- 63 **Data issues.** Data are not available at sub-State levels. Data are only by location of the prison, not the usual address of the prisoner.
- 64 **Conclusion.** A range of issues preclude the use of this dataset as an indicator of relative Indigenous disadvantage.

Welfare — Pension use

65 Our assessment of welfare and housing is based on the use of Commonwealth pensions and benefits. These are weighted to reflect their importance as a proxy of welfare services.

Figure C8 Assessed Welfare spending on Indigenous people per capita



Source: Census.

66 **Reliability.** This assessment, while incorporating a range of assumptions, does reliably measure differences between States in the Indigenous use of pensions, and potentially in the use of welfare services.

67 **Relevance.** These data are relevant, and could represent an indicator of Indigenous disadvantage assuming the link between pension use and welfare use is consistent across the country.

68 **Policy neutrality.** Commonwealth provision of pensions is beyond the control of the States. This assessment is currently used because we consider it to be policy neutral.

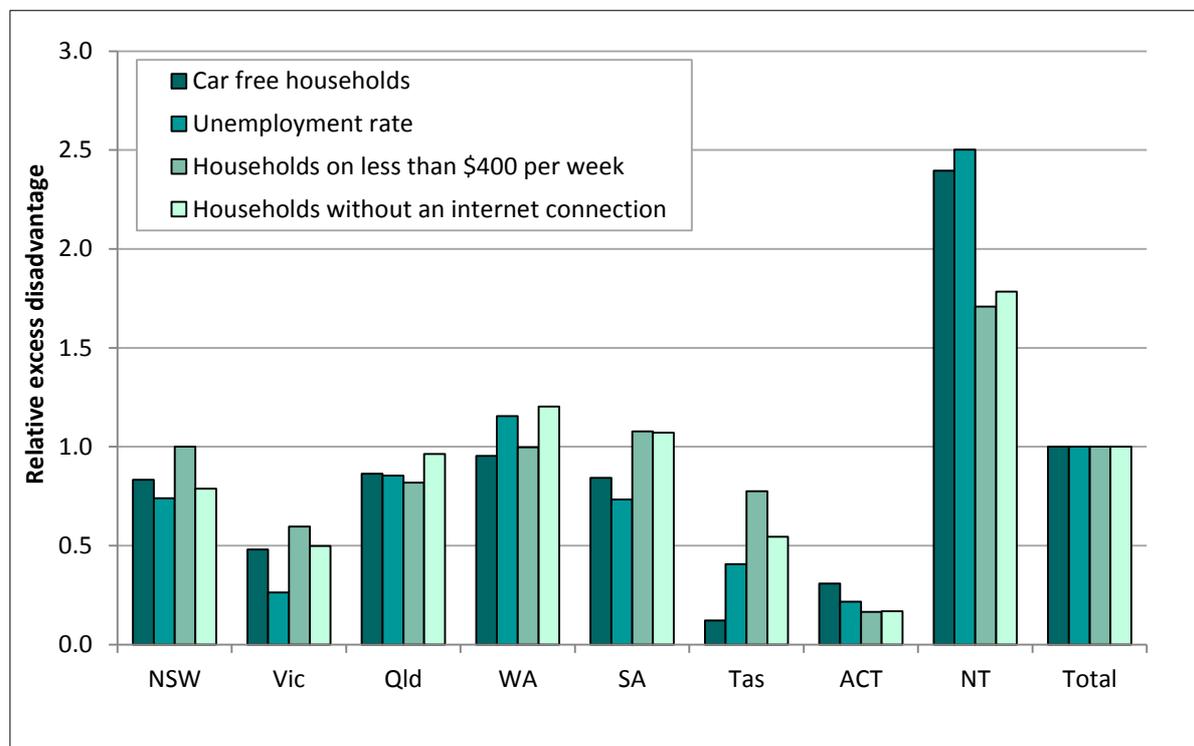
69 **Data issues.** This data are available at sub-state levels.

70 **Conclusion.** These data have the potential to be used to measure Relative Excess Disadvantage.

Census measures

71 Census measures, including those used earlier in this paper, could be used to measure relative disadvantage.

Figure C9 Census measure of relative excess disadvantage



Source: Census.

72 **Reliability.** The Census generally produces nationally consistent indicators. The indicators that we have considered in this paper are suitable for our purposes. Other indicators could also be used.

73 **Relevance.** These measures of disadvantage are correlated with, and probably connected with, the underlying social issues that lead to certain Indigenous people having a greater use of State government services. Some of these indicators, in particular car ownership, are likely to be driven by other factors as well. However, Census measures do seem to have sufficient correlation with the drivers of expenditure to warrant further examination.

74 **Policy neutrality.** Most indicators can be regarded as policy neutral.

75 **Data issues.** Being based on Census data, it is possible to calculate all indicators for sub-State areas.

76 **Conclusion.** These data have the potential to be used to measure Relative Excess Disadvantage.

ABS National Aboriginal and Torres Strait Islander Social Survey

77 The ABS ran a survey of Indigenous people in 2008, with a wide range of questions on a wide range of topics. There are a number of different approaches that could be employed to use this data to produce national indicators, ranging from selecting a single indicator to complex statistical analysis, either measuring aspects of disadvantage or service use. Table C1 shows the sample size that is available from NATSISS in each State.

Table C1 NATSISS Sample size

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
Community sample(a)	-	-	559	161	315	-	1 232	-	2 267
Non-community sample	1 969	2 252	1 471	1 130	1 666	1 082	1 035	435	11 040

(a) Sample drawn from discrete Indigenous Communities.

- 78 The survey covers topics on: Culture and language; Family and community; Health; Housing; Transport; Education; Employment; Income; Financial Stress; Information technology; and Crime and justice.
- 79 **Reliability.** As an ABS survey, a set of reliable measures can be derived from this survey.
- 80 **Relevance.** There are a range of variables available to choose from. We have not yet considered which best reflect our concept, but are confident of the capacity of this dataset to produce relevant indicators
- 81 **Policy Neutrality.** This survey contains both policy neutral and policy effected (for example experiences with criminal justice system) indicators. We will be able to select policy neutral measures.
- 82 **Data issues.** The sample size is quite large, but being a sample survey we will need to exercise some caution in our selection of indicators. While the original dataset contains the full range of geographic indicators, we may not have ready access to this for confidentiality reasons.
- 83 **Conclusion.** This approach has potential as an indicator.

ATTACHMENT D: CENSUS MEASURES DISADVANTAGE

Appropriateness of SEIFA components as CGC measures of Indigenous disadvantage

Indicator	Discussion	
Occupied private dwellings with no internet connection	While not all parts of the country have access to broadband, they all have access to dial up. Socio-economics is the key driver of internet access.	
Employed people classified as Labourers	Industrial structure of States has impact on availability of specific occupations	
People aged 15 years and over with no post-school qualifications	Is contaminated by past State policies on supply of TAFE in Indigenous areas.	
People with stated annual household equivalised income between \$13,000 and \$20,799	Incomes under \$13,000 are excluded from the general indicator to avoid cash poor asset rich. However, it also excludes some on benefits. For Indigenous, a better measure is including all with an income of \$1 to \$20,799.	
Households renting from Government or Community organisation	Policy contaminated.	
Unemployment rate	If those employed under CDEP are counted as unemployed, this is a reasonable indicator.	
One parent families with dependent offspring only	Indigenous living arrangements with multiple family households make this measure complex.	
Households paying rent less than \$120 per week	Contaminated by public housing policies. Interstate differences in house prices and rental markets.	
People aged under 70 with a long-term health condition or disability and need assistance with core activities	Perception of disability is culturally derived. People in poor health in remote areas perceive that they aren't any worse than others around.	
Occupied private dwellings with no car	Non-socioeconomic factors lead to NSW having a higher level of car free households. However, these factors are small relative to differences we are measuring.	
People who identify as being of Aboriginal or Torres Strait Islander origin	Does not measure Indigenous disadvantage.	
Occupied private dwellings requiring one or more extra bedrooms	Not readily available for analysis. With many Indigenous in public housing, it may be policy contaminated.	
People aged 15 years and over who are separated or divorced	This may be a measure of assimilation (adopting western values of marriage) rather than disadvantage.	
Employed people classified as Machinery Operators and Drivers	Industrial structure of States has impact on availability of specific occupations	
People aged 15 years and over who did not go to school	Contaminated by past policies on provision of school education in Indigenous areas.	
Employed people classified as Low Skill Community and Personal Service Workers	Industrial structure of States has impact on availability of specific occupations	
People who do not speak English well	A measure of assimilation rather than disadvantage for the Indigenous population.	