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Commonwealth Grants Commission

2015 REVIEW

Remoteness classification

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INTRODUCTION

- 1 Following the release of the census, and in advance of being able to gather data, we need to determine our geographic classifications. In particular, at this stage of the census cycle, we would normally commission a new version of our remoteness classification — State based Accessibility and Remoteness Index of Australia (SARIA).
- 2 We would like to consider a range of issues to ensure that our specifications for SARIA mean that it best reflects the drivers of the cost of providing State services. We would like to consider the continued relevance of each of the key differences between SARIA and ABS remoteness areas (or ARIA).
- 3 We anticipate receiving terms of reference for a review in the very near term. However, we do not consider this process to be a direct part of that, and so are sending this request out independently of the new terms of reference. We regard this as part of the ongoing data working party work. However, we would like to highlight that developing an agreed geographic classification is time consuming. Before we can begin to request and collate data, we require:
 - consultation with the States
 - agreement by the commission
 - development by GISCA¹

DIFFERENCES BETWEEN SARIA AND ARIA

- 4 In the 2010 Review, many of the commission’s assessments recognised that the costs States incur in providing a given service are affected by where people live. The commission used SARIA to classify where people live and to measure the population in each region. That index determines the remoteness and accessibility of areas on the basis of their distance from the State capital city and other centres of various sizes within the State. It differs from the Accessibility and Remoteness Index of Australia (ARIA)² because it recognises that all State capital cities are the major focus of service delivery in a State and are therefore highly accessible³ and that services are generally not provided by State governments to residents of other States⁴.
- 5 The major differences between SARIA and ARIA are:

¹ National Centre for Social Applications of Geographical Information systems (GISCA), University of Adelaide.

² It has been adopted as the ABS standard classification of remoteness.

³ In the Admitted patients assessment, this assumption is relaxed for Darwin as explained in the Admitted patients chapter of volume 2 of the 2010 review report.

⁴ In some assessments, we recognise that services provided by the ACT to residents of New South Wales do affect their fiscal capacities. See the Cross-border chapter of volume 2 of the 2010 review report.

- the treatment of capital cities
 - borders are assumed to be impermeable in SARIA
 - truncation of scores
 - the population estimates used.
- 6 Our remoteness classification is used for two purposes:
- it is used to reflect the cost to States of providing services in different areas
 - it is used to divide the population into groups that have different patterns of use of certain services.
- 7 In this paper we consider how these differences between SARIA and ARIA affect our purposes. We have considered some of the implications of these differences, but have not attempted to be exhaustive. We welcome State views on the implications of these differences in helping us develop a remoteness classification using the 2011 census.

Treatment of capital cities

- 8 SARIA's measure of remoteness includes a component for the distance from the State capital city, while in ARIA this component is the distance from the nearest city of over 250 000 people.
- 9 To reflect the cost of delivering services, the SARIA model is appropriate if visits by head office staff are a key driver of the cost of delivering services. However, staff consider that physical visits from head office are probably a relatively small component of the costs of delivering a service. Therefore, SARIA may not better reflect the costs of delivering services.
- 10 In relation to the second purpose of our remoteness classification, the question is whether small capital cities have use patterns like other cities of a similar size, or more like other capital cities in terms of how their residents use services. The converse issue is whether large non-capital city residents are more like residents of other large cities, or other non-capital cities.
- 11 Table 1 shows the 20 largest cities in Australia. In the Admitted patients assessment, we treat Darwin as being moderately accessible, rather than highly accessible, on the grounds that the provision of private hospital services makes Darwin more like other similar sized towns, than like capital cities. There was no strong evidence that Hobart's private hospital system was like other capital cities, nor that it was like other regional cities. In the absence of strong evidence for an adjustment to the remoteness of Hobart, no adjustment was made.

Table 1 Population of largest 20 Australian urban centres

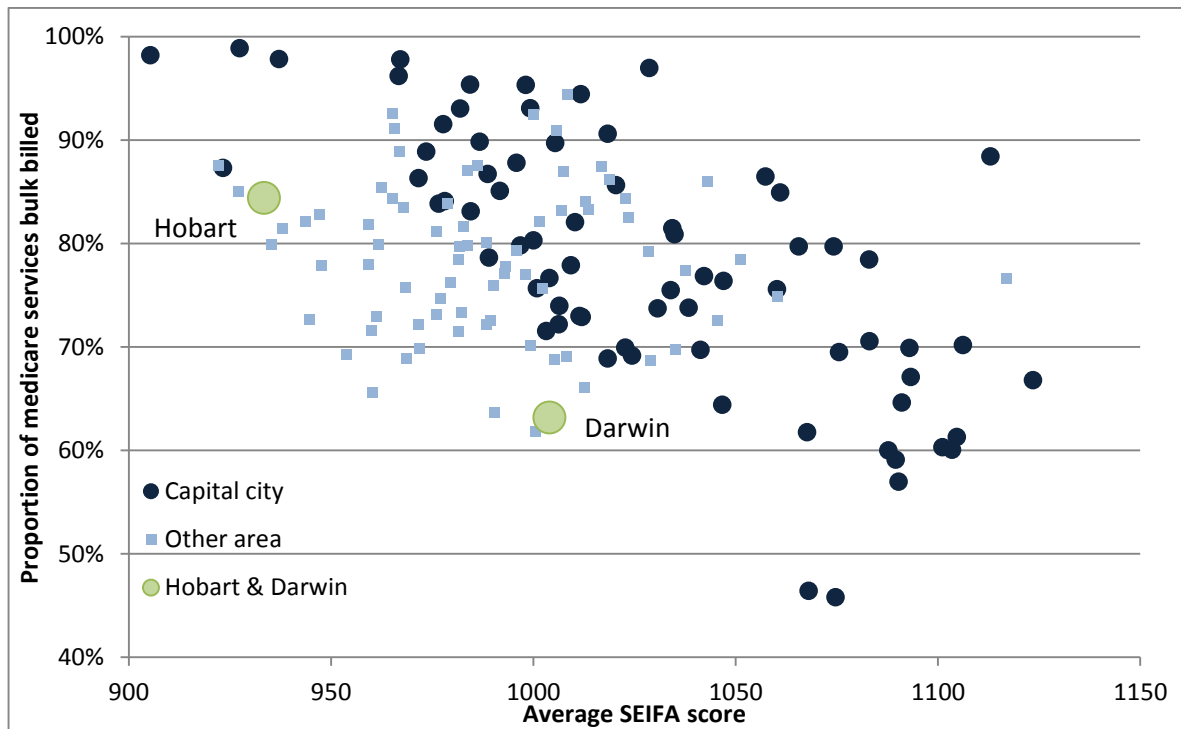
Rank	City	Whether capital city	Population, June 2011
1	Sydney	Capital city	4 087 551
2	Melbourne	Capital city	3 802 341
3	Brisbane	Capital city	1 941 633
4	Perth	Capital city	1 481 615
5	Adelaide	Capital city	1 133 005
6	Gold Coast-Tweed Heads (Gold Coast Part)		468 303
7	Canberra-Queanbeyan (Canberra Part)	Capital city	356 851
8	Newcastle		310 788
9	Central Coast		305 539
10	Wollongong		255 188
11	Sunshine Coast		211 376
12	Geelong		146 714
13	Townsville-Thuringowa		143 917
14	Hobart	Capital city	135 275
15	Cairns		114 949
16	Darwin-Palmerston	Capital city	107 702
17	Toowoomba		101 498
18	Mandurah		89 787
19	Ballarat		86 986
20	Bendigo		83 197

Source: ABS Population Estimates

- 12 Figure 1 shows that after controlling for socio-economic status, Commonwealth electorates in capital cities tend to have higher rates of bulk billing of Medicare services than those in regional areas.
- 13 The level of bulk billing in the electorates of Solomon (Darwin) and Denison (Hobart) are considerably lower than almost⁵ any other capital city electorate with comparable socio-economic status. This supports the notion that the people in Darwin and Hobart use (or are offered) health services in a different way to those in other capital cities, and more consistent with the way services are offered in regional cities.
- 14 Figure 2 shows that the proportion of students who finish year 12 varies with city size. The students in Darwin and Hobart have retention rates that are more similar to students in similar sized cities than to students in other capital cities.

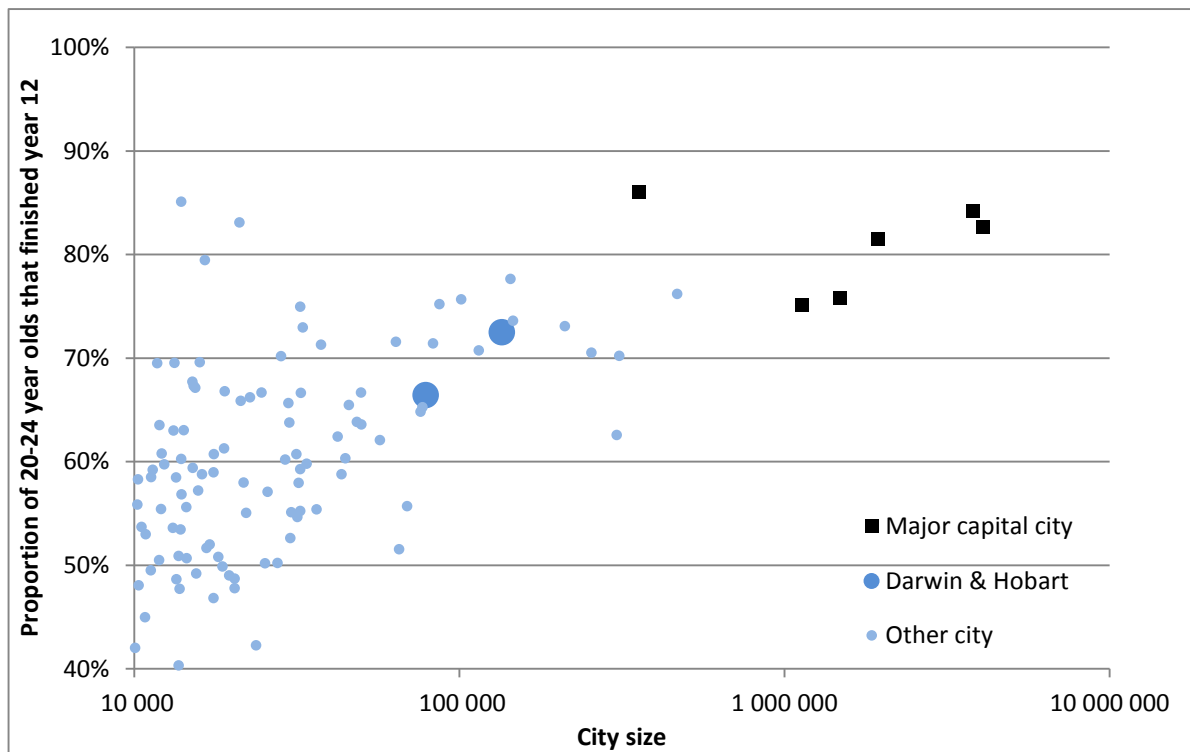
⁵ Port Adelaide has a similar socio-economic status and bulk billing rate to Hobart. The two Canberra electorates also have very low bulk billing rates, although their socio-economic status is well above that of Hobart or Darwin.

Figure 1 Medicare bulk billing rates by SEIFA score, Commonwealth Electorates



Source: Medicare Australia, 2010-11.

Figure 2 Proportion of 20-24 year olds that finished year 12



Source: Census of population and housing, 2011.

- 15 The commission adopts an approach of equalising standards of service for comparable communities. The communities in Hobart and Darwin appear to be more comparable to those of other regional cities of about their size than to communities in other capital cities, at least in terms of their use of Medicare and education services.

Impermeable borders

- 16 One key difference between SARIA and ARIA is that SARIA does not allow for proximity to a centre in another State to affect a locality's remoteness. For example, Tweed Heads is regarded as being distant from Sydney rather than close to Brisbane or the Gold Coast. Because of the relatively small populations living in areas affected by this difference in classification, this has a relatively minor impact on the differences between the two classifications.
- 17 Conceptually, SARIA is probably better at capturing some costs State governments face in administering services. For example Queanbeyan does not get its school administrators from Canberra. However, it is also likely that if the Buronga public school toilets need fixing, the NSW government may hire a plumber to drive 2.4km from Mildura, rather than 156km from Balranald.
- 18 The cost of goods and services sourced in Buronga, and the additional allowances required to pay staff to entice them to work in Buronga are likely to be lower than they would be if Mildura did not exist, and if the nearest capital city was 13 hours away, rather than the 6 hours it is to Melbourne.
- 19 In terms of the use patterns of the population, however, the assumption of impermeable borders is inappropriate. The level of private or Commonwealth provision of services is unlikely to be affected by State boundaries. The job opportunities available to people and the impact that has on their use of services is also likely to be significantly affected by the proximity of towns across State borders.
- 20 In terms of the profile of the population, the range of services provided, and their unit cost, and the regional allowances required to attract staff to work in an area, the assumption of impermeable borders is probably generally false. The population of Tweed Heads is likely to be more comparable to a suburb of the Gold Coast than to an accessible town of 60 000 people such as Bunbury or Bundaberg. The people and services of Queanbeyan are probably more like those of Canberra or Newcastle than they are like Shepparton or Tamworth.
- 21 The rule concerning impermeability of borders is concerned with the mechanisms for delivery of service. Residents are free to cross borders to consume services in other States and do so. The impact of this is captured in the cross border assessments or in bilateral or multilateral agreements between States.

22 While impermeability of borders is a relatively minor issue, staff consider that for both the use patterns of residents, and most costs of delivering services, borders are generally permeable.

Truncation of ratios

23 In the calculation of ARIA, to avoid very long distances from a large city from having a disproportionate impact on remoteness, distances are truncated in ARIA. This truncation was not done in SARIA. This is illustrated by the calculation of ARIA and SARIA scores for Broome, in Table 2.

24 Geraldton is the nearest town of 18 000 people to Broome, 1 800km away. Nationally, the average distance of all locations to the nearest centre of 18 000 is 153km. In the calculation of ARIA, it was decided that once a town is 3 times this distance (460km) further distances should be ignored. In developing SARIA with States, States considered that this was not appropriate for our purposes, and we should not truncate these ratios. The impact of this is that Broome is considered remote in ARIA (score of 9.0 is between 5.93 and 10.53 which are the cutoffs for a classification of remote), but very remote in SARIA (score of 24.7 is well above 10.53).

Table 2 Calculation of SARIA and ARIA score for Broome

Service centre type	Centre	Distance to Broome	National average distance to service centre	Ratio	Truncated Ratio
		km	km	SARIA score	ARIA score
A (Capital city / City of 250 000)	Perth	2 007	390	5.2	3.0
B (city of 48,000)	Perth	2 007	258	7.8	3.0
C (city of 18 000)	Geraldton	1 797	153	11.7	3.0
D (town of 5 000)	Broome	0	95	0.0	0.0
E (Town of 1 000)	Broome	0	54	0.0	0.0
Total				24.7	9.0

25 Table 3 shows the impact of truncation is greatest in Western Australia. If we were to introduce truncation as ARIA does, Broome, Karratha, Port Hedland, and some smaller towns would be reclassified as remote rather than very remote. 45,000 people lived in such areas in 2006. Given that there can be a considerable cost difference between remote and very remote areas, the decision to truncate or not to truncate is likely to be material.

Table 3 Impact of introducing truncation of distance ratios

State	Very remote (SARIA) and remote (ARIA)		Remote (SARIA) and moderately accessible (ARIA)	
	Population	Largest towns affected	Population	Largest towns affected
NSW	1 430		20 131	Broken Hill
Qld	6 823	Charleville	17 938	Cardwell
WA	44 527	Broome, Karratha, Port Hedland	0	
SA	2 995	Ceduna	0	
NT	6 252	Maningrida	0	
Total	62 027		38 069	

Source: Commission calculation

26 Conceptually, we consider the impact of distance does not cease at three times the national average distance. Broome, being 2 000km from Perth, faces greater isolation and higher costs than a town at the threshold distance of 1 170km. However, we also consider that towns of over 12 000 people are fundamentally less isolated than other very remote locations.

Population estimates

- 27 The production of ARIA and SARIA both require estimates of the population in urban centres. ARIA has been calculated on the basis of the enumerated census count. SARIA has been calculated on the basis of usual resident census counts.
- 28 In the 2011 Census, there are 46 centres that change their classification depending on the concept we use. Most of these are based on very small changes that tip a centre across the 1 000 population threshold for an E service centre. Some of these changes are based on an influx of tourism, including 5 ski field villages, and a number of beaches, including Byron Bay and Mission Beach. In the past it was the seasonal nature of this influx that led us to using usual resident census counts. However, the impact of fly-in-fly-out (FIFO) workers appears to be having an impact. Broome has 12 800 usual residents, but 18 600 enumerated population. Karratha also moves across the 18 000 threshold, from 16 500 to 20 000. Kununurra, Carnarvon and Roxby Downs are among the towns crossing the 5 000 threshold. The impact of FIFO workers is likely to be less seasonal than the tourists to the ski fields, and so the enumerated population may better reflect the nature of the service centres.
- 29 The central question is whether, given the itinerant nature of the populations in these towns whether the level and range of services provided by both State government and non-State government providers are more similar to those of towns with similar usual resident populations or similar enumerated populations. We have little data upon which to make a recommendation.

OTHER CRITERIA FOR DETERMINING CGC CLASSIFICATION OF REMOTENESS

Impact on interstate freight assessment

- 30 In the 2010 location assessment, we currently assess interstate freight. The States' shares of total freight expenditure was estimated by the commission using judgment. This assessment received a high discount (50%) 'to reflect our strong concerns about data uncertainty'.
- 31 The States with the greatest disabilities in interstate freight are Tasmania and the Northern Territory, reflecting that Hobart and Darwin are relatively small, and they are large distances from large population centres. If we were to adopt ARIA instead of SARIA, the regional costs assessment would incorporate the high cost of isolation faced by these isolated States. The commission may, therefore, reconsider the need for an interstate freight assessment.

Standard geography

- 32 ARIA has now been adopted as the standard ABS classification of remoteness. A range of data providers, including the ABS and AIHW, code their data to ARIA. For us to follow this standard could mean that data could be taken directly from administrative systems that use the standard geography without the need for recoding. This is likely to reduce the potential for error, as well as make our assessments simpler. Some data providers are unable or unwilling to code data from fine geographical areas to non-standard classifications such as SARIA.

Impact

- 33 The most significant changes come from the change in treatment of Hobart and Darwin from Capital cities to smaller centres. This is expected to increase the GST requirements of Tasmania and the Northern Territory. The change in treatment of Newcastle, the Central Coast and Wollongong from non-capital cities over 48 000 to cities of over 250 000 has a significant impact in New South Wales. Figure 3 shows the change in profile for these States. There are smaller impacts in other States.
- 34 The magnitude of this change is very difficult to determine without new use data on service use and population characteristics on an ARIA basis. Staff consider the impact could be relatively large in per capita terms for Tasmania and the Northern Territory, although even the direction of the change is difficult to predict. The direction, as well as the magnitude to the impact is difficult to predict primarily because adding Darwin to the moderately accessible areas and adding Hobart to accessible areas could significantly change the average spend within those areas. While we are unable to measure the impact without replicating all assessments using ARIA instead of SARIA, we consider that the change will probably not be very large in terms of the overall distribution.

Figure 3 Change in population distribution, due to change from SARIA to ARIA

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	%	%	%	%	%	%	%	%	%
SARIA									
Highly accessible	65.6	75.5	60.7	75.3	73.2	34.0	99.7	46.8	68.3
Accessible	23.0	20.1	21.6	10.5	13.7	58.5	0.1	7.7	20.4
Moderately accessible	10.2	4.2	14.2	7.3	10.5	6.9	0.2	6.8	9.0
Remote	1.0	0.1	2.1	1.8	1.8	0.0	0.0	17.8	1.3
Very remote	0.2	0.0	1.4	5.2	0.7	0.5	0.0	20.9	1.1
ARIA									
Highly accessible	72.9	75.4	60.6	71.5	73.0	0.0	99.9	0.0	68.9
Accessible	20.1	19.8	21.3	12.2	12.0	64.5	0.1	0.0	19.4
Moderately accessible	6.4	4.7	14.7	8.9	11.2	33.4	0.0	55.0	9.3
Remote	0.5	0.1	2.1	4.4	2.9	1.5	0.0	23.0	1.5
Very remote	0.1	0.0	1.3	3.0	0.9	0.5	0.0	22.0	0.9
Difference									
Highly accessible	7.4	-0.1	-0.2	-3.7	-0.2	-34.0	0.2	-46.8	0.7
Accessible	-3.0	-0.3	-0.3	1.7	-1.7	6.0	0.0	-7.7	-1.0
Moderately accessible	-3.8	0.5	0.5	1.6	0.7	26.5	-0.2	48.2	0.3
Remote	-0.5	0.0	0.0	2.6	1.1	1.5	0.0	5.2	0.3
Very remote	-0.2	0.0	-0.1	-2.2	0.2	0.0	0.0	1.1	-0.3

CONCLUSIONS

Options

- 35 We have a range of options, and the timing of the next review could have an impact on this decision:
- use the 2006 based SARIA in the next review
 - use the 2011 based ARIA (ABS remoteness areas) in the next review
 - commission a 2011 version of SARIA
 - a) maintain the 2006 criteria
 - b) adopt some of the following assumptions used in ARIA.
 - i) borders are permeable
 - ii) consider Hobart and Darwin to be towns of 48 000 to 250 000 rather than capital cities, and consider the Gold Coast and similar cities to be centres of over 250 000, rather than non-capitals over 48 000
 - iii) truncate the impact of distance at three times the national average
 - iv) use enumerated census counts rather than usual resident census counts.

Consultation

- 36 State views on these issues are requested urgently. We would like State comments by the end of May. We will seek a commission decision on the 20th June, and then either begin data gathering immediately, or contract GISCA to produce SARIA. In 2008, GISCA took 4½ months to produce SARIA. On that timeline, this would take us through to around November.