



Australian Government


Commonwealth Grants Commission

2020 REVIEW

GEOGRAPHY USED BY THE COMMISSION

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GEOGRAPHY USED BY THE COMMISSION

- 1 This paper provides Commission staff proposals for the common geographic classifications to be used for the 2020 Review.
- 2 Category specific geography is used in the Transport, Roads, and Services to communities assessments. These geographic classifications and their associated issues are considered in the staff draft assessment papers:
 - *CGC 2018-01/15-S, Services to communities*
 - *CGC 2018-01/17-S, Roads*
 - *CGC 2018-01/18-S, Transport*

2015 REVIEW APPROACH

- 3 The Commission uses different geographic classifications and approaches to measure different attributes affecting service delivery costs.
 - ABS remoteness areas to measure:
 - Regional costs, which capture the cost of delivering comparable services in more or less remote areas
 - the different use of services by people in more or less remote areas as part of the socio-demographic composition in various expense assessments.
 - Service delivery scale (SDS), which measures the additional cost of delivering services in small isolated communities where the economies of scale of larger centres are not possible.
 - Three area-based measures of socio-economic status are used.
 - Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD) is an Australian Bureau of Statistics (ABS) published dataset used where Indigenous splits are not used. Throughout the paper we use the term SEIFA to refer specifically to the SEIFA IRSD index.
 - Indigenous Relative Socio-Economic Outcomes (IRSEO) as developed by the Centre for Aboriginal Economic Policy Research (CAEPR) at the Australian National University.
 - The Commission commissioned the ABS to produce a non-Indigenous SEIFA (NISEIFA), applying ABS methods for SEIFA to the non-Indigenous population.

The conceptual case for regional costs and service delivery scale

- 4 States spend different amounts per capita on people in different regions. In some cases that is because the socio-demographic composition differs and that drives a different level of use. In other cases the cost of delivering even the same level of service varies; for example, because labour costs rise in more remote locations. The latter concept is what regional costs aims to capture.
- 5 The Regional costs assessment recognises that the costs of providing State services to similar people can vary between regions and generally increases with remoteness. Costs vary with remoteness because:
 - remote locations are generally less desirable than urban areas so higher wages or allowances are required to entice certain categories of staff to work there
 - employee housing is more likely to be provided in remote areas where there are fewer accommodation alternatives
 - extra costs are incurred on goods
 - staff travel over longer distances
 - additional inputs are often required (for example, four wheel drive vehicles and additional fuel are required for remote policing).
- 6 Conceptually, remoteness may include differences in use (that are assessed as part of socio-demographic composition) as well as differences in costs that are assessed as regional costs. However in practice these tend to be related concepts. For example per student costs are higher in remote areas due to the need to provide allowances, housing and other incentives for teaching staff to locate there. At the same time, greater student needs and lack of learning support infrastructure such as libraries, museums and access to the internet, among other factors, may tend to increase educational disadvantage which lead States to provide additional resources.
- 7 The Service delivery scale (SDS) assessment recognises that States experience diseconomies in the provision of certain services to small isolated communities that impose above average costs on States because of:
 - the indivisibility of labour
 - unproductive travel time.
- 8 While some small isolated communities may be in more remote locations, areas relatively close to major cities can still be sufficiently isolated as to warrant small schools and other examples of services delivery scale. Similarly, large towns such as Alice Springs and Broome are remote and suffer from the costs associated with remoteness, but not service delivery scale.

The conceptual case for area-based socio-economic status measures by Indigeneity

- 9 People of different socio-economic status (SES) make very different use of government services, and the States' shares of people of low SES vary markedly. Therefore an assessment of the impact of SES on State expenses is highly material.
- 10 Area-based measures such as SEIFA indicate the collective socio-economic characteristics of people living in an area. While person-based measures of socio-economic status such as income or educational attainment are likely to be better predictors of disadvantage and service use, there is very limited administrative information on service use by these variables. When admitted to hospital or arrested by the police, people are usually asked their address, but are rarely asked their income or educational attainment. Area-based measures of socio-economic status are more generally available, widely used and well understood.
- 11 In the 2015 Review, the Commission received terms of reference which required it to 'develop methods to appropriately capture the changing characteristics of the Indigenous population'. Indigenous people often represent a very small proportion of the population in any area, so that the socio-economic status of Indigenous people does not have a significant contribution to the measured SEIFA score of that area. Therefore SEIFA may not be representative of the socio-economic status of the Indigenous population in each area.
- 12 The Commission uses IRSEO to capture Indigenous specific socio-economic status. This measure reflects the socio-economic status of the population that identifies as Indigenous in each Census, and as the number of people identifying as Indigenous changes, so can their average socio-economic status. It is also independent of the socio-economic status of the non-Indigenous population living in the same area. For example, the non-Indigenous population in parts of Tasmania are among the most disadvantaged of Australia's non-Indigenous population. The Indigenous population living in those areas may have similar or worse socio-economic status than their non-Indigenous neighbours, but compared to the Indigenous population in parts of Western Australia and the Northern Territory, they have relatively high socio-economic status.

Calculation of regional costs

- 13 The impact of regional cost differences on what States are assessed to need to spend is estimated by applying a cost gradient, measured on the basis of schools and police data or an average of the two, to the client base for a category where there is a conceptual case for regional cost differences. What States need to spend in each category differs because States have different proportions of clients in each remoteness region.

- 14 Australian Curriculum, Assessment and Reporting Authority (ACARA) data are used to develop the schools regional costs gradient. Data provided by States have been used to develop the police regional costs gradient.
- 15 **Schools**. The Commission derives student loadings using regression modelling based on ACARA data. This gives estimates of the impact of Indigenous student numbers, school size, socio-economic status and remoteness on costs, for schools that are otherwise similar. The coefficients for each remoteness area are used to derive regional cost differences for State government schools.
- 16 **Police**. The Commission used police staffing and cost data provided by the States for the 2010 Review to calculate average costs per fulltime equivalent employee on wages, employee housing and other non-wage costs, for each remoteness area. Regional cost factors were derived using the average costs applied to police use-weighted population for each remoteness area.
- 17 A low level discount has been applied to reflect the more unreliable nature of the available police data in comparison to the ACARA data.
- 18 **Extrapolation to other categories**. While appropriate regional costs data were only available for schools and police at the time of the 2015 Review, the Commission considered there was a strong conceptual case that costs associated with other categories also increase in more remote areas. In the absence of data directly measuring costs in these areas, it decided extrapolation was appropriate.
- 19 The Commission calculated a general cost gradient by taking the average of the schools and police gradients. The Regional cost factors for all categories other than Schools education and Justice were derived using the general gradient and a client base applicable to each category.
- 20 A medium discount has been applied to the regional cost factors for all categories where extrapolation occurs, including for Justice components other than police.
- 21 Table 1 shows the categories to which the regional costs disability is applied, and the associated GST redistribution.

Table 1 **Redistribution from EPC, 2018-19, Regional influences**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Redist |
|---|------|------|-----|-----|-----|-----|------|------|--------|
| Regional costs | \$m | \$m | \$m | \$m | \$m | \$m | \$m | \$m | \$m |
| Schools | -248 | -164 | 102 | 89 | 48 | 56 | -28 | 145 | 440 |
| Health (non-admitted) | -17 | -20 | 13 | 6 | 3 | 6 | -2 | 12 | 40 |
| Housing | -19 | -22 | 14 | 7 | 3 | 6 | -3 | 13 | 44 |
| Welfare | -27 | -30 | 20 | 9 | 4 | 9 | -4 | 18 | 61 |
| Services to communities | -23 | -26 | 23 | 17 | 1 | 1 | -2 | 9 | 51 |
| Justice | -95 | -109 | 79 | 41 | 14 | 31 | -14 | 54 | 218 |
| Roads | -6 | -15 | 11 | 8 | 2 | 0 | -1 | 1 | 23 |
| Transport | -14 | -9 | 0 | 13 | 6 | 1 | -1 | 4 | 25 |
| Services to industry | -10 | -11 | 6 | 7 | 1 | 3 | -1 | 5 | 22 |
| Other expenses | -49 | -56 | 37 | 17 | 8 | 17 | -7 | 33 | 111 |
| Subtotal (\$m) | -508 | -461 | 306 | 215 | 90 | 129 | -64 | 295 | 1 034 |
| Subtotal (\$pc) | -63 | -71 | 61 | 82 | 51 | 246 | -154 | 1196 | 41 |
| Service delivery scale | | | | | | | | | |
| Schools (State funded) | -15 | -24 | 3 | 10 | 17 | 2 | -3 | 10 | 42 |
| Welfare (family and child) | -4 | -7 | 2 | 3 | 2 | 1 | -1 | 3 | 11 |
| Services to communities (utilities subsidies) | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Justice (police) | -8 | -15 | 5 | 7 | 5 | 1 | -1 | 6 | 24 |
| Justice (courts) | -1 | -3 | 1 | 1 | 1 | 0 | 0 | 1 | 4 |
| Subtotal (\$m) | -29 | -49 | 12 | 22 | 25 | 4 | -5 | 21 | 83 |
| Subtotal (\$pc) | -4 | -7 | 2 | 8 | 14 | 7 | -12 | 84 | 3 |
| Total (\$m) | -537 | -510 | 317 | 237 | 114 | 133 | -69 | 315 | 1117 |
| Total (\$pc) | -67 | -78 | 63 | 90 | 66 | 253 | -166 | 1280 | 44 |

Note: The table only includes those aspects of remoteness that are measured through regional costs.

Source: Commission calculation, 2018 Update.

Calculation of socio-economic status in 2015 (and 2018 Update)

- 22 The Commission uses alternative measures of socio-economic status depending on purpose and data availability. When data are differentiated by Indigenous status then IRSEO and NISEIFA are used, and where it is not, then SEIFA is used.
- 23 **SEIFA.** SEIFA is a product developed by the ABS that ranks areas (Statistical Areas Level 1 or SA1s)¹ in Australia according to relative socio-economic disadvantage. The index is based on information from the five-yearly Census.
- 24 **IRSEO.** IRSEO is developed by CAEPR based on the same technique that the ABS uses to produce SEIFA. It uses a reduced suite of contributing variables that measure

¹ SA1s are geographical areas and generally the smallest unit for the release of census data. SA1s have a population of between 200 and 800 people with an average size of approximately 400 people.

advantage. Because the Indigenous population is much smaller than the non-Indigenous population, IRSEO can only be reliably calculated for the relatively large Indigenous areas rather than the much finer geography available for SEIFA.

- 25 **NISEIFA.** To complement IRSEO, the Commission commissioned the ABS to produce a version of SEIFA using only the non-Indigenous population. NISEIFA uses the same variables and spatial unit as SEIFA but is recalculated for the non-Indigenous population.
- 26 **Updating the SES measures.** For the 2018 Update, IRSEO and NISEIFA have been updated using the 2016 Census data in a way directly comparable with the measures produced from the 2011 Census.

ISSUES AND ANALYSIS

- 27 There are some assessment issues that warrant consideration for the 2020 Review. These are:
 - the most appropriate geographic classification for the regional costs assessment
 - the availability of reliable data to broaden the evidence base for the regional costs assessment, and support extrapolation to other categories
 - the variables and geography used to measure Indigenous socio-economic disadvantage
 - the potential for simplification.

Geography for the regional costs assessment

- 28 In the 2015 Review, the Commission moved from SARIA² to the ABS standard remoteness areas. We see no reason to reconsider the decision that ABS remoteness areas are a superior measure of the underlying concept than SARIA. However, an alternative measure of remoteness has been developed that warrants consideration.
- 29 The Modified Monash Model (MMM) is a geographical classification of remoteness developed for the Department of Health to better target incentive payments for rural doctors. It is based on the same principles as ABS remoteness areas and shares much with it. Its modifications attempt to address concerns about the disparity between areas in the same remoteness category, particularly inner regional and outer regional areas.

² The State Accessibility/Remoteness Index of Australia (SARIA) is the State-based version of ARIA.

30 The MMM subdivides areas in Inner and Outer Regional Australia into four categories (MM2 to MM5) based on distance from, and the size of, the local town or city (see Table 2).

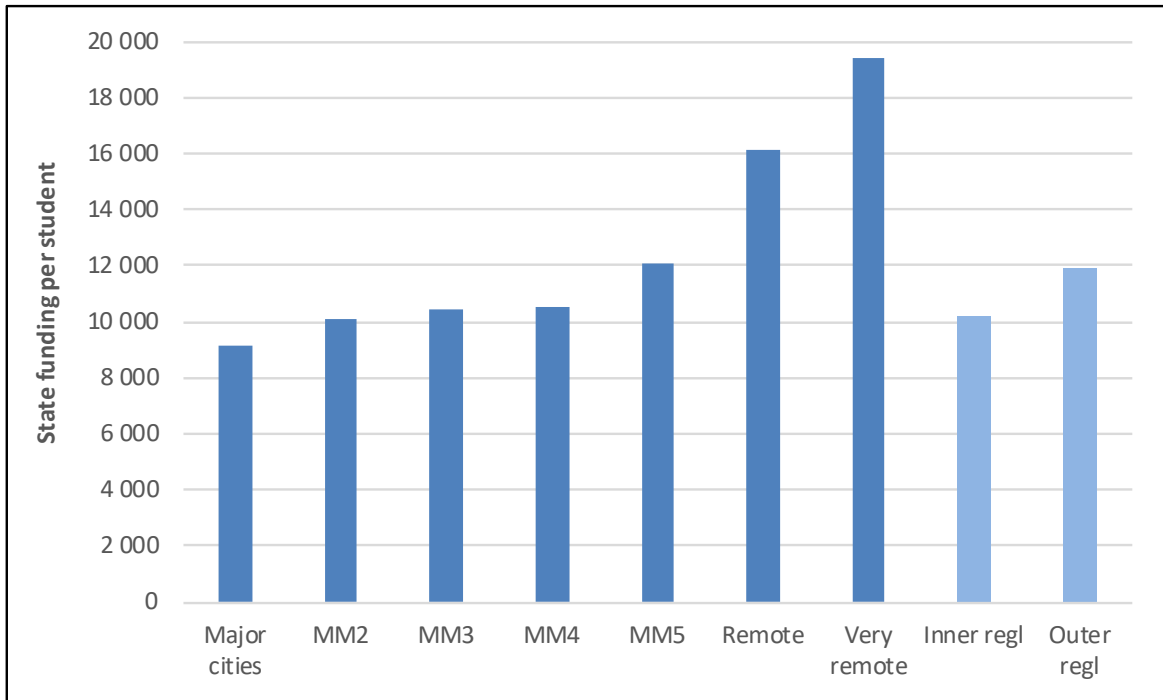
Table 2 Modified Monash categories

| Remoteness | Modified Monash category | Description | |
|---|--------------------------|---|---|
| 1. Major cities | 1. Major cities | All areas categorised as major cities | |
| 2. Inner regional or 3. Outer regional | 2. Large regional | All areas categorised as inner or outer regional | In or within 20 km road distance of a town with population > 50,000 |
| | 3. Medium large regional | | Not in MM2 and in or within 15 km road distance, of a town with population between 15,000 and 50,000 |
| | 4. Medium regional | | Not in MM2 or MM3, and in or within 10 km road distance, of a town with population between 5,000 and 15,000 |
| | 5. Small regional | | All other areas |
| 4. Remote | 6. Remote | All areas categorised as remote that are not on a populated island that is separated from the mainland in the ABS geography and is more than 5km offshore | |
| 5. Very remote | 7. Very remote | All other areas – that being very remote and areas on a populated island that is separated from the mainland in the ABS geography and is more than 5km offshore | |

Data

- 31 Staff used geographically disaggregated data on schools and hospitals to consider whether the MMM classification provides a better driver of State spending than ABS remoteness areas.
- 32 Figure 1 shows average State funding per student in government schools by MMM and by remoteness. There is a clear gradient in average funding based on ABS remoteness areas, but little differentiation in average funding per student in MM2, MM3 and MM4 areas. The difference between inner and outer regional areas of ABS remoteness is similar to that found between small regional (MM5) and the other regional categories (MM2 to MM4). However, splitting these other regional categories offers very little additional explanatory power.

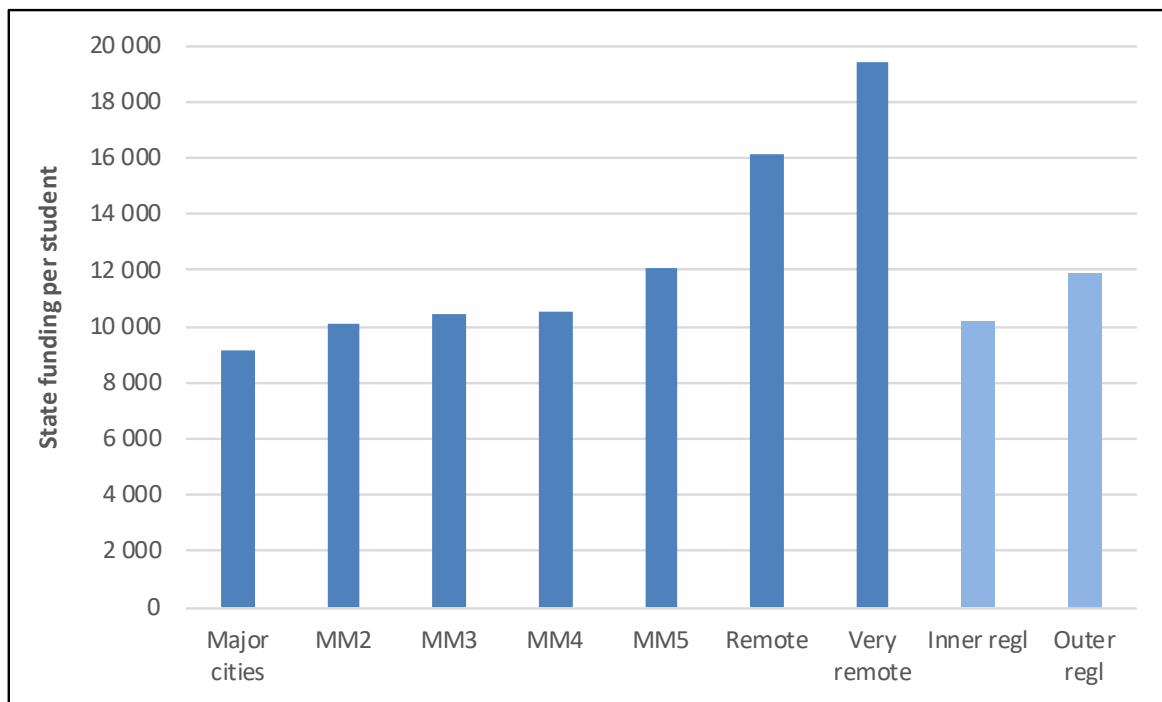
Figure 1 Funding per student, government schools, 2015



Source: Commission calculation using 2015 ACARA data.

33 Figure 2 shows average age-standardised National Weighted Activity Units (NWAU) per thousand persons by MMM and remoteness. There is a clear gradient in average hospital admissions funding except between major cities and inner regional areas. There is some difference in the rate between MM2 and the other MM groups, but little differentiation between MM3, MM4 and MM5.

Figure 2 NWAU rate, hospital admissions, 2013

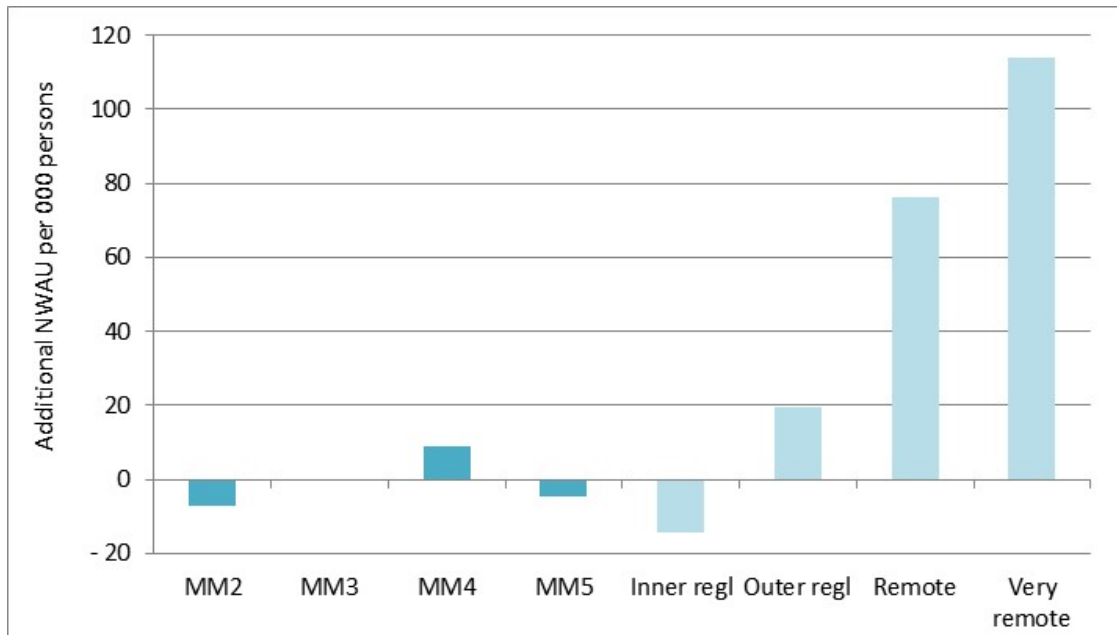


Source: Commission calculation using 2013 IHPA data.

Analysis

- 34 Staff estimated regression models using the schools and hospitals data to test whether the MMM classification of remoteness is better correlated with overall costs. Both schools and hospital regressions include socio-economic status and remoteness area variables.
 - The hospitals regression predicted age standardised NWAU per thousand persons.
 - The schools regression predicted funding per student and also took into account school size, whether it is a primary, secondary or combined school and a range of other variables included in the schools category regression model.
- 35 Figure 3 shows the impact of remoteness on hospital costs using alternative measures of remoteness, relative to the cost in major cities, as part of a regression explaining age standardised hospital spending per capita in different postcodes. Using MMM instead of remoteness areas decreases the explanatory power of the model slightly from 52.7% to 51.8%.
- 36 Using ABS remoteness areas we observe increasing costs with increasing remoteness, although major city patients are more expensive than inner regional patients.
- 37 Using MMM we observe little differences in the cost between the regional classifications.

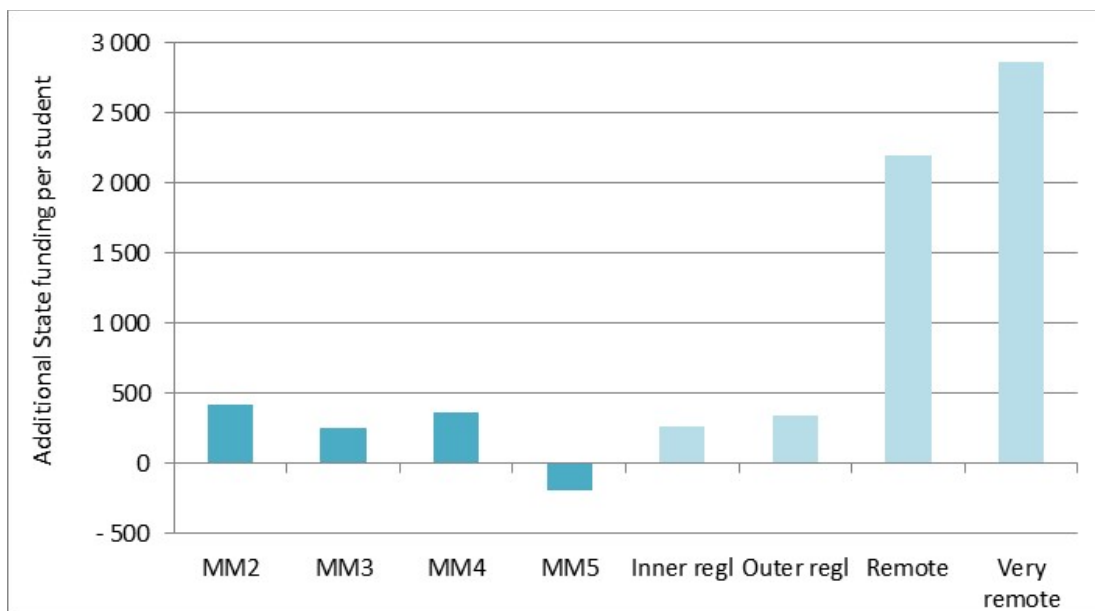
Figure 3 Impact of remoteness on hospital costs, 2013



Source: Commission calculation using 2013 IHPA data.

38 Figure 4 shows the effect of remoteness on State funding per student in government schools, as part of a regression explaining spending per student in different postcodes. Both models have very similar explanatory power. By ABS remoteness area we see the expected upward gradient although only slight differences between inner and outer regional areas. By MMM we observe some differences in per student cost but there is no clear upward or downward pattern with increasing remoteness among the regional categories. The rate for MM5 is below the rate for major cities.

Figure 4 Impact of remoteness on school funding, government schools, 2015



Source: Commission calculation using 2015 ACARA data.

- 39 The analysis shows that the MMM classification is not a better proxy of State spending than ABS remoteness areas. The extra complexity associated with having an additional two categories of remoteness does not appear to add any additional explanatory power.

Staff propose to recommend the Commission:

- continue using ABS remoteness areas geography across all categories.

Broadening the evidence base on regional costs

- 40 In the 2015 Review, the Commission measured regional costs in schools and police, and extrapolated from the experience of these services to other services. Other services are delivered in a very different way. Staff consider that broadening the evidence base for the regional costs assessment is important in this review. Regional costs data for a range of different State services are considered below.

Government school education

- 41 In the 2015 Review regional cost loadings were estimating using a very basic model. For the 2020 Review, staff propose to modify this model, as described in Staff Draft Assessment Paper *CGC 2018-01/10-S, Schools education*. The final specifications of that model have not yet been determined. As such, this paper does not contain regional cost loadings for schools.

Post-secondary education

- 42 Most States apply regional loadings to subsidise Vocational education and training (VET). The loadings are State-specific, being a percentage added to the cost of training in the capital city of each State.
- 43 Staff propose to use these data to estimate a regional costs gradient for post-secondary education.
- 44 The State loadings are provided in Table 3. The loadings vary across States reflecting their different remoteness profiles. The average loadings for remote and very remote areas are higher than the 2015-based gradients for schools and police.

Table 3 Regional cost loadings, Post-secondary education

| Remoteness | NSW | Vic | Qld | WA | SA | Tas(a) | ACT | NT(a) | Total |
|----------------|------|------|------|------|------|--------|------|-------|-------|
| Major cities | 1.00 | 1.01 | 1.00 | 1.00 | 1.00 | n a | 1.00 | n a | 1.00 |
| Inner regional | 1.10 | 1.10 | 1.14 | 1.11 | 1.00 | 1.10 | 1.00 | n a | 1.10 |
| Outer regional | 1.10 | 1.10 | 1.17 | 1.33 | 1.12 | 1.10 | 1.00 | 1.19 | 1.16 |
| Remote | 1.20 | 1.10 | 1.52 | 1.96 | 1.23 | 1.10 | n a | 1.26 | 1.62 |
| Very remote | 1.20 | n a | 1.92 | 1.97 | 1.36 | 1.10 | n a | 1.76 | 1.87 |

(a) For Tasmania and the NT State loadings are relative to Hobart and Darwin. As these are classified as inner regional and outer regional areas respectively, rather than major cities, the loadings have been scaled up to be relative to major cities. Adjustment factors are based on the average loadings of the other States for inner regional and outer regional areas of 1.10 and 1.16 respectively.

Source: Commission calculation.

45 As the loadings have been calculated based on cost subsidies, the magnitude of the subsidies may reflect not only costs, but also State priorities and relative resources, and the standard of service provided in different regions may not be comparable. Nevertheless, staff consider that the loadings calculated mainly reflect costs.

Hospitals

46 The Independent Hospital Pricing Authority (IHPA) estimates remoteness adjustments or the extent that remoteness of patient residence explains average cost per hospital admission.

47 This is based on a regression model on admitted patient hospital services using activity based funding (ABF). The model includes factors that contribute to variations in the cost of patient admissions such as condition and treatment, Indigenous status, patient age (paediatric adjustment), private patient service and accommodation, and radiotherapy-, dialysis- and intensive care unit-related procedures.³

48 The IHPA approach is broadly similar to the approach we would take to estimate a regional cost gradient based on cost per comparable service. As such, staff propose to base the health regional cost gradient on IHPA calculations.

49 In its latest 2018-19 calculations, IHPA has made changes to its modelling. For admitted patient services, it estimates the effect of both patient residence remoteness and patient *treatment* (hospital location) remoteness. For emergency department services, for the first time it estimates a patient residence remoteness effect (see Table 4).

³ Independent Hospital Pricing Authority, *Technical Specifications 2017-18, National Pricing Model March 2017*, pp. 18-19.

Table 4 Regional cost loadings, hospital services, 2018-19

| | Admitted patients – ABF | | Emergency depts. |
|----------------|-------------------------|-------------------|-------------------|
| | Patient residence | Hospital location | Patient residence |
| Major cities | 1.00 | 1.00 | 1.00 |
| Inner regional | 1.00 | 1.00 | 1.00 |
| Outer regional | 1.08 | 1.00 | 1.00 |
| Remote | 1.25 | 1.08 | 1.22 |
| Very remote | 1.29 | 1.12 | 1.22 |

Source: IHPA, *National Efficient Price Determination, 2018-19*.

- 50 It is not yet clear whether the appropriate indicator is to use the Patient address loading, the hospital location loading, or a combination of both effects. Staff will work with IHPA to determine the best way to interpret these estimates and incorporate them into our assessment of regional costs

Police

- 51 States have provided up to date data on police costs and service in different regions. The methods proposed by staff to develop the Police assessment, including the cost weights for different remoteness areas, are described in Staff Draft Assessment Paper *CGC AP 2018-01/16-S, Justice*. It is not yet clear whether the new approach to assess costs in police is capturing generalizable regional costs, or whether it reflects differences in use of police services in different regions in a way that cannot be assumed for other services.

Potential for simplification

- 52 The cost gradients between services will be compared, and a single measure for all categories will be considered if the differences between gradients are not significant.

Staff propose to recommend the Commission:

- develop a regional costs assessment using data from schools, police, post-secondary education and hospitals
- test whether there are significant differences in the cost gradients between these services and, if not, use a single measure for all categories.

Extrapolation

- 53 While the range of services for which we can measure regional costs has expanded, there remain some services where staff consider a conceptual case for regional costs exists but for which little direct evidence or assessment is available. Staff consider there is a strong conceptual case for such a disability in Health (non-admitted patients), Housing, Welfare, Justice (prisons and courts), Services to communities,

Services to industry, Roads, Transport and Other expenses. In the 2010 Review, this conceptual case was validated using data from Queensland, Western Australia, Tasmania and the Australian Institute of Health and Welfare (AIHW). Staff intend to seek data testing the validity of the conceptual case for extrapolation through a data request to States in May this year.

- 54 Staff consider an extrapolated gradient remains appropriate. This can be calculated as the average of category-specific regional loadings.
- 55 If the cost gradients for different categories vary considerably, the Commission will be faced with a choice on how to extrapolate this to other categories. It could:
- take a simple average and discount appropriately for the uncertainty associated with the variability of the category gradients
 - extrapolate gradients from specific categories, depending on how comparable service delivery models are, as is currently done for Service delivery scale
 - use a measure with the lowest, or near the lowest, gradient on the assumption that that reflects the measure with the least prospect of double counting higher service use in remote areas, and the greatest chance of being a pure cost gradient.
- 56 In all cases the Commission will need to consider whether a discount is appropriate.

Staff propose to recommend the Commission:

- send a data request to States for current data on State spending by region by service
- continue applying a regional cost disability to services where a conceptual case has been identified.

Measure of Indigenous socio-economic disadvantage

- 57 In response to the 2015 Review terms of reference requiring us to ‘develop methods to appropriately capture the changing characteristics of the Indigenous population’, the Commission adopted IRSEO as the geographic socio-economic index for the Indigenous population.
- 58 In the 2015 Review and 2018 Update, some States had raised concerns with technical aspects of IRSEO. This section discusses those issues.

Choice of indicators

- 59 Some States supported the use of IRSEO and NISEIFA for the Indigenous and non-Indigenous populations but remained concerned about the robustness and fitness-for-purpose of IRSEO because it was constructed to measure the positive aspects of socio-economic status.

- 60 Staff consider that for most variables used in IRSEO, advantage and disadvantage are mirror images of the same concept. For example the proportion of the Indigenous population aged 15 years and over with an education qualification is 32%. If the indicator were reversed to look at disadvantage, the proportion with no qualification would be 68% (100 minus 32). Using the revised proportions that measure disadvantage rather than advantage would result in the same IRSEO index, as the relationships among the indicators would not have changed. The possible exception to that principle is the indicator on proportion of the population employed as a manager or professional. While this is a measure of advantage, its inverse may not be a measure of disadvantage.
- 61 IRSEO uses different variables to those used in SEIFA (see Attachment A for comparison of IRSEO and SEIFA indicators). Some differences are:
- IRSEO is based on nine person-level indicators that measure aspects of income, education, labour force, occupation, housing cost and housing adequacy. All indicators measure advantage rather than disadvantage.
 - SEIFA is based on 15 person-level or family/dwelling-level indicators. In addition to the basic aspects measured in IRSEO, it also includes indicators on lack of access to a car, the internet, disability, facility to speak English, single parent families and separated or divorced status.
- 62 While some States consider that our measure of Indigenous disadvantage should mirror that used for non-Indigenous disadvantage, staff consider that if experts in the field consider that Indigenous disadvantage is different from non-Indigenous disadvantage, our measures should use the best available and most relevant indicators.
- 63 IRSEO only includes person-level variables so it does not rely on a standard definition of what Indigenous households include or how to deal with households with a mix of Indigenous and non-Indigenous persons.
- 64 In summary, while the current version of IRSEO uses different indicators from SEIFA that measure advantage rather than disadvantage, the resulting index is comparable with and can be used in conjunction with NISEIFA.

Geographic classification

- 65 IRSEO is calculated based on Indigenous areas rather than the SA1s that SEIFA is based upon. The larger geography used for IRSEO reflects the smallest consistent geography with sufficient Indigenous population to produce reliable estimates across all areas.
- 66 However, it is acknowledged that some Indigenous areas contain very large Indigenous populations, and that diversity within these areas is lost when using IRSEO. For example, Brisbane city is a single Indigenous area, with over 20,000

Indigenous people and over 1 million non-Indigenous. It is classified as 'least disadvantaged' Indigenous area. While there are pockets of disadvantage in some areas/suburbs, the aggregated geographic classification used masks such disparities.

Development of IRSEO+

- 67 CAEPR is currently developing a revised version of IRSEO — IRSEO+.
- 68 CAEPR propose to develop IRSEO+ using a new, purpose built, geographic classification with sufficient Indigenous population to produce reliable IRSEO estimates, and enough non-Indigenous population for comparison. The new classification will be more disaggregated than Indigenous areas. It will be smaller than Statistical Area Level 2s (SA2s)⁴ for areas with large Indigenous populations, and larger than SA2s for areas with small Indigenous populations.
- 69 The development of SEIFA, NISEIFA and IRSEO have been based on the extent to which different aspects of disadvantage correlate with each other, and therefore with a common concept of disadvantage. In consultation with the Commission, CAEPR are considering also developing an index based on a regression predicting aspects of State service use.
- 70 One possible indicator of socio-economic status among the Indigenous population is consistency in identification. CAEPR are considering including a variable on change in identification between the 2011 and 2016 censuses, which may contribute to the measure of Indigenous socio-economic status.
- 71 CAEPR intend to complete the development of IRSEO+ by July 2018, with consultation with stakeholders well before that. While at the time of writing, this process has not yet been determined. When it is, staff will ensure that States are invited to participate in the consultative process on the development of IRSEO+.

Staff propose to recommend the Commission:

- look into the merits of IRSEO+ as a better measure of Indigenous SES once this becomes available.

⁴ SA2s are medium-sized geographical areas built up from whole SA1s and represent communities that interact together socially and economically. SA2s have a population range between 3 000 to 25 000 people with an average size of about 10 000 people.

Other issues considered and settled

Service delivery scale

- 72 The service delivery scale (SDS) assessment captures the impact of diseconomies of scale stemming from service provision being on a smaller scale in isolated areas than in more accessible areas.
- 73 The Commission defines SDS areas as those more than 50 km from towns of 5 000 people based on analysis of Census data staffing patterns for school and police services. ACARA data on fixed cost per school and average school size have been used to measure SDS in the Schools education category and extrapolated to the Services to communities assessment. Police staffing patterns have been used to measure SDS in police and extrapolated to courts and to family and child welfare services.
- 74 Staff acknowledge the conceptual simplifications in the assessment. However given the amount of GST redistributed (see Table 1) is relatively small, any changes made would be unlikely to materially improve the assessment even with significant increase in complexity. For the 2020 Review staff propose to maintain the current methodology with updated data.

SEIFA

- 75 Staff consider SEIFA is the most appropriate area-based SES measure for the total population, it is used in assessments which do not include data split by Indigenous status. We propose to continue to use SEIFA for this purpose.

NISEIFA

- 76 Staff consider NISEIFA is the most appropriate area-based SES measure for the non-Indigenous population. We propose to continue to use NISEIFA for this purpose.

Interstate non-wage costs

- 77 In the 2015 Review, the Commission concluded ‘that Perth is more isolated than ... the larger capital cities of Sydney, Brisbane and Melbourne. ... Canberra is a much smaller city and not like other major cities in terms of production, manufacturing or importation. Hobart and Darwin have some attributes of capital cities, as well as some attributes of inner regional and outer regional areas respectively.’ In the absence of data on the cost implications of this, the Commission made the following judgment based assessments:⁵

⁵ The Commission ‘made a judgment based non-wage cost assessment for Perth and Canberra based on 25% and 50% respectively of the regional costs allowance they would have received had they been

- Western Australia – plus \$70 million
- the ACT – plus \$30 million
- Tasmania – minus \$30 million
- the Northern Territory – minus \$55 million.

78 In this review, staff intend to recommend the continuation of these adjustments, with the same values, indexed from 2011-12 for growth in total State expenses.

Staff propose to recommend the Commission:

- continue to use SEIFA and NISEIFA for the total and non-Indigenous population, respectively
- maintain 2015 methods for Service delivery scale
- maintain 2015 methods to measure Interstate non-wage costs.

CONCLUSION AND WAY FORWARD

79 In conclusion, staff consider that no change should be made to the use and maintenance of the geographical classifications of:

- Remoteness areas
- SEIFA
- NISEIFA.

80 IRSEO+ should be developed and investigated, with State consultation, to test whether it better proxies the relationship between Indigenous heterogeneity and State spending.

81 The assessment of regional costs could be improved by broadening the categories for which regional costs are directly calculated.

82 The assessment of Service delivery scale would remain the same as in the 2015 Review.

Data / information sought from States

83 Data from States able to allocate spending to geographic regions will be sought in May this year to validate the extrapolation of regional cost gradients to assessments where it is not directly measured.

classified as inner regional cities, [and] reduced the impact of the regional cost assessment for both Darwin and Hobart by 50%' (*2015 Review Vol. 2*, Chapter 23 pp. 488 – 491).

ATTACHMENT A SEIFA/NISEIFA AND IRSEO VARIABLES

| Category | SEIFA (IRSD) variables | IRSEO variables |
|---------------|--|---|
| Income | People with stated annual household equivalised income between \$1 and \$20,799 (approx. 1st and 2nd deciles) | Population 15 years and over with an individual income above half the Australian median |
| Education | People aged 15 years and over whose highest level of education is Year 11 or lower (Includes Certificate I and II) | Population 15 years and over who have completed Year 12 |
| | People aged 15 years and over who have no educational attainment | Population 15 to 24 years old attending an educational institution |
| | | Population 15 years and over who have completed a qualification |
| Labour force | People (in the labour force) unemployed | Population 15 years and over employed |
| Occupation | Employed people classified as 'labourers' | Population 15 years and over employed as a manager or professional |
| | Employed people classified as Machinery Operators and Drivers | Population 15 years and over employed full-time in the private sector |
| | Employed people classified as Low Skill Community and Personal Service Workers | |
| Housing costs | Occupied private dwellings paying rent of \$1- \$166 per week | Population who live in a house that is owned or being purchased |
| Bedrooms | Occupied private dwellings requiring one or more extra bedrooms (based on Canadian National Occupancy Standard) | Population who live in a house with at least one bedroom per usual resident |
| Car ownership | Occupied private dwellings with no cars | |
| Other | Occupied private dwellings with no internet connection | |
| | People aged under 70 who have a long-term health condition or disability and need assistance with core activities | |
| Family | People who do not speak English well | |
| | One parent families with dependent offspring only | |

People aged 15 and over who
are separated or divorced

Families with children under
15 years of age who live with
jobless parents
