

AIHW work on the impact of the distribution of the health workforce on First Nations people's access to health services

The AIHW has conducted modelling and analysis of how access to and availability of health services varies across Australia with a particular focus on First Nations people. A key factor determining geographic variation in access to health services is the distribution of the health workforce. Furthermore, access to health services may affect how challenging it is to attract and retain skilled workforces in other industries in Northern Australia.

The Geographically-adjusted Index of Relative Supply

Published in 2016, the Geographically-adjusted Index of Relative Supply (GIRS) is a measure developed by the AIHW to compare health workforce supply across small geographic areas across all of Australia. The aim was to overcome limitations in using relatively simple provider-to-population ratios, such as FTE rates (e.g. full-time equivalent positions per 1,000 people) to compare workforce supply in areas with vastly different geographic characteristics. Instead, the GIRS used FTE rates based on the 2014 National Health Workforce Data Set and adjusted them for land size, population dispersion and drive time to services. The resulting score ranged from 0 to 8 for each of seven health care professions and was calculated for each of the Australian Bureau of Statistics' (ABS) Statistical Areas level 2 (SA2). Areas with lower GIRS scores are more likely to face workforce supply challenges than those with higher GIRS scores.

The health-care professions considered in the GIRS analysis were general practitioners, nurses, midwives, pharmacists, dentists, psychologists and optometrists. For each profession, a higher proportion of Aboriginal and Torres Strait Islander people than non-Indigenous people lived in areas with lower GIRS scores. While relative supply challenges were more common in remoter parts of Australia, the findings showed that there was considerable variation in regional and remote areas. The Northern Territory and the Pilbara were regions where most areas had a relatively challenging workforce supply situation for six or seven of the professions according to the GIRS analysis.

More information can be found in the 2018 edition of [Australia's Health](#) and in the [2016 report](#).

The Access Relative to Need index

The Access Relative to Need index (the 'ARN index') estimates how local access to General Practitioners (GPs) relative to the need for primary health care varies across Australia for First Nations people and non-Indigenous Australians at the level of the ABS's Statistical Areas Level 1 (SA1). The type of access to GPs considered in the ARN model is physical access and does not take other potentially important barriers such as affordability or cultural appropriateness into account

The model used to calculate the estimate of access that is part of the ARN index assumes that access to services depends on drive time and the capacity of services to meet the demand from their local populations. Drive times between local populations and services are estimated using GIS software. Demand is estimated by combining an estimate of the per capita need for primary health care and population size.

Per capita need is estimated using socioeconomic and demographic characteristics that are known to be correlated with the need for primary health care. Analysis of the high-level associations between those characteristics and the amount of time that Australians spend

with GPs in parts of Australia where access to services is relatively good has made it possible to calibrate the overall differences in per capita need between populations.

In addition to the estimates of access, the output from the ARN modelling includes an estimate of access relative to need (the composite ARN index). The rationale behind using a measure of access relative to need, rather than just a measure of access where per capita need is used to estimate demand on services, is that how adequate a certain level of access is will likely depend on the per capita need of a population. Populations with a higher need are likely to be impacted more severely when access is relatively poor.

The Australian Government funds Aboriginal Community Controlled Health Services and some other services to provide comprehensive primary health care to First Nations Australians through the Indigenous Australians Health Programme (IAHP). The AIHW has used analysis of drive time to the nearest IAHP-funded service in combination with the ARN index to identify service gap areas where First Nations Australians are likely to find it relatively challenging to access primary health care. Service gap areas are spread out across Australia but some are located in the Pilbara, the Kimberley, Arnhem Land and Cape York. More information can be found in the [Aboriginal and Torres Strait Islander Health Performance Framework 2020 summary report](#).

The AIHW is continuing to develop the ARN index. Forthcoming publications will include modelling specifically focussed on First Nations people's access to the IAHP-funded services relative to need.