

# Variation in the rates of potentially preventable hospitalisations for Aboriginal and Torres Strait Islander people are geographically consistent over time across Australian states and territories

## Findings

### Background

Potentially preventable hospitalisations (PPHs) are hospitalisations for a condition where an admission to hospital could have potentially been prevented through the provision of an appropriate, individualised preventive health intervention and early disease management, usually delivered in primary care and community-based care settings. The analysis was undertaken by [Indigenous Area](#) (IAER).

In the analysis, we determined how many times the IAER's rate (for all PPHs, or by PPH category of acute, chronic or vaccine-preventable) was under or over a chosen threshold (i.e., the Australian average rate for a PPH category). In this way we gauged the "heat" of an area in relation to whether the PPH rate was persistently over the threshold (hot), through three intermediate stages, to under the threshold (cold).

### Geographical variations

We identified that the heat for the Total and Chronic PPH categories varied across Australia, with around 37% of all IAREs, being classified as 'hot' when the rates were compared to the annual Australian average rate. For the Acute and Vaccine-preventable PPH categories, around 33% and 22%, respectively of IAREs were classified as 'hot'. As the thresholds were increased from the Australian average to 1.5 times the Australian average, we see a reduction in the number of IAREs that are classified as 'hot'.

### Variations by state and territory

The percentages of IAREs being classified as 'hot' within the states and territories also varied, with the majority of IAREs in the Northern Territory classified as 'hot', followed to a lesser extent by Western Australia. Once again, as thresholds were increased, the percentages of IAREs classified as 'hot' in each state and territory reduced. No IAREs in the ACT and Tasmania were classified as 'hot' over the five years of analysis.

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## What do we know?

On average across Australia, [emergency department presentations](#) for Aboriginal and Torres Strait Islander people were more than double those of the non-Indigenous population. [Public hospital admissions](#) were 30% higher and [premature mortality](#) rates (0 to 64 years) were two and half times higher among Aboriginal and Torres Strait Islander people when compared to the non-Indigenous population. While the differences between these Australian average rates highlight the stark differences in the health status and in the need for and the way health services are accessed, the inherent geographic variation of these rates within Australia are also substantial.

The provision of timely and effective primary health care to Aboriginal and Torres Strait Islander people is one option to manage a population whose health status is far below that of non-Indigenous Australians and to possibly reduce the continued pressure on the hospital system. Information as to the degree to which a population receives timely, accessible, and quality primary and community-based care can be reported in the form of an indirect measure, the Potentially Preventable Hospitalisations (PPH) indicator. PPHs are hospitalisations for a condition where an admission to hospital could have potentially been prevented through the provision of an appropriate individualised preventative health intervention and early disease management, usually delivered in primary care and community-based care settings [1].

PPHs are classified based on the condition at admission into three categories; Acute, Chronic and Vaccine-preventable, with the type of category advocating what action could be taken:

1. Hospitalisations for Acute conditions may not be preventable when the hospitalisation occurs, but this hospitalisation should not occur if timely and adequate access to primary care was received earlier;
2. Admissions for Chronic conditions may be prevented through behaviour modification and lifestyle change to prevent the condition from worsening and requiring hospitalisation; and
3. Vaccine-preventable conditions can generally be prevented by receiving a vaccination.

These measures have an inherent geographic enquiry to them, i.e., which locations have high rates of PPH and which locations don't. This information is lacking at a local area level, where decisions on access and effectiveness of treatments can be made.

## What did we do?

The traditional PPH measure is an age-standardised rate of hospital admissions per capita for each type of category or condition. It must be noted, that the majority of Aboriginal and Torres Strait Islander people live remotely in [Australia](#), and this locational bias will influence the results, particularly in places such as the [Northern Territory](#), [Western Australia](#), and [Queensland](#). We took five years of Aboriginal and Torres Strait Islander hospital admission data geocoded to the Australian Bureau of Statistics [Indigenous Area](#) (IARE) geography. This data was used to calculate how many times over each year the IARE's rate (for a total number of PPHs or by PPH category) was under or over a chosen threshold (i.e. the Australian average rate for a PPH category). The number of times for each IARE was then graded into one of five values, ranging from cold to hot.

This categorisation gauged the “heat” of an area in relation to whether the PPH rate was persistently over the threshold.

The analysis produced two outputs:

1. to illustrate the differences of PPH heat between IAREs, we created [web-based interactive atlases](#), which highlight the level of heat and the clustering of like heat values; and
2. to illustrate the category and condition differences within an IARE, we created [IARE based heat map graphs](#), which also included a proxy indicator of the health status of the IARE, based on rates of non-PPH conditions.

In this fact sheet, we have estimated the percentage of ‘hot’ IAREs across Australia, its states and territories.

## What does it show?

We identified that the heat for the Total and Chronic PPH categories varied across Australia, with around 37% of all IAREs, or around 150 IAREs of the 406 IAREs, being classified as ‘hot’ when the rates were compared to the annual Australian average rate (Figure 1). For the Acute and Vaccine-preventable PPH category around 33% and 22%, respectively of IAREs were classified as ‘hot’. As the thresholds were increased from the Australian average to 1.5 times the Australian average, we see a reduction in the number of IAREs that are classified as ‘hot’.

The percentages of IAREs being classified as ‘hot’ within the states and territories also varied, with the majority of IAREs in the Northern Territory classified as ‘hot’, followed to a lesser extent by the number of IAREs in Western Australia across the PPH categories. Once again, as thresholds were increased, the percentages of IAREs classified as ‘hot’ in each state and territory reduced. No IAREs in the ACT and Tasmania were classified as ‘hot’ over the five years of analysis.

## Where to next?

We have created a multifaceted dataset reflecting the geographic variation and temporal persistence for a suite of PPH indicators. How this variation reveals itself at the local level needs to be investigated further to address primary care issues. The [web-based atlases](#) and [heat map graphs](#) provide the next step to investigate these issues locally. These visualisations offer a powerful policy, planning and evaluation tool to many different types of decision makers concerned with reducing Aboriginal and Torres Strait Islander potentially preventable hospitalisations across Australia.

## References

Australian Institute of Health and Welfare (AIHW). 2020. [National Healthcare Agreement: PI 18- Selected potentially preventable hospitalisations, 2020 \(aihw.gov.au\)](#) Australian Institute of Health and Welfare; 2020 (accessed 03/08/2021).

Figure 1: Percentage of Indigenous Areas that are classified as 'hot' for Total, Acute, Chronic and Vaccine-preventable PPH categories, by threshold and State and for the Northern Territory.



