

## Using large-scale linked data to target service improvements for Australian Aboriginal people

### Impact:

- The IHOPE study has demonstrated how linking health data, in combination with innovative methods for analysing data and presenting them in visually appealing ways, can positively impact on health disparities.

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The Indigenous Health Outcomes Patient Evaluation (IHOPE) project uses advanced statistical modelling techniques, and "real-world" whole-of-population linked hospital and mortality data, to unpack the contributions of personal factors (such as socioeconomic status and comorbidities), hospital factors (such as hospital size and facilities) and geographic factors (such as remoteness) to disparities between Aboriginal and non-Aboriginal people in the incidence, management and outcomes of health conditions. This allows identification of which strategies (whole of population vs. targeted to Aboriginal people or specific geographic areas, primary prevention vs. disease management and follow-up care) have the greatest potential for tackling these disparities.

The issues investigated to date include incidence and outcomes of acute myocardial infarction, potentially preventable hospitalisation in adults and children, otitis media in children, cataract surgery, road traffic injuries and unintentional injuries. The research has shown that crucial issues driving poor outcomes for Aboriginal people include high rates of comorbidities, low levels of private health insurance, use of smaller hospitals with fewer specialist services, and limited access to publically-funded services.

Nine peer-reviewed papers from IHOPE have been published or accepted to date. Results have been presented at numerous Aboriginal community reference group meetings, national and international scientific conferences, and meetings with local and national health policy agencies and health services. IHOPE research is informing planning of cardiac, ear and eye health services for Aboriginal people in Australia. IHOPE research on Aboriginal child injury and consultation with communities about injury "hot spots" is ongoing.



Methods developed through IHOPE, including innovative tools for graphical presentation of results, will support future health disparities research using linked hospital data:

- The use of multilevel modelling to quantify the contributions of person-, hospital- and geographic-level factors to Aboriginal health disparities has demonstrated the value of such methods for identifying targets for interventions that will have the biggest impact on these disparities.
- The methods used for graphical presentation of the results (caterpillar plots, bubble plots, maps) are readily understood by policy and community audiences and can be adopted for future research using similar methods.
- The methods developed and tested for identifying Aboriginal people in linked hospital morbidity data will inform future Aboriginal health research using these data.

The IHOPE team includes a senior Aboriginal researcher and it has built significant new capacity in policy- and community-engaged Aboriginal health research. Five higher degree students have worked on the project to date, with three of these now having been awarded their degrees.

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<http://www.uws.edu.au/centreforhealthresearch/research/ihope>