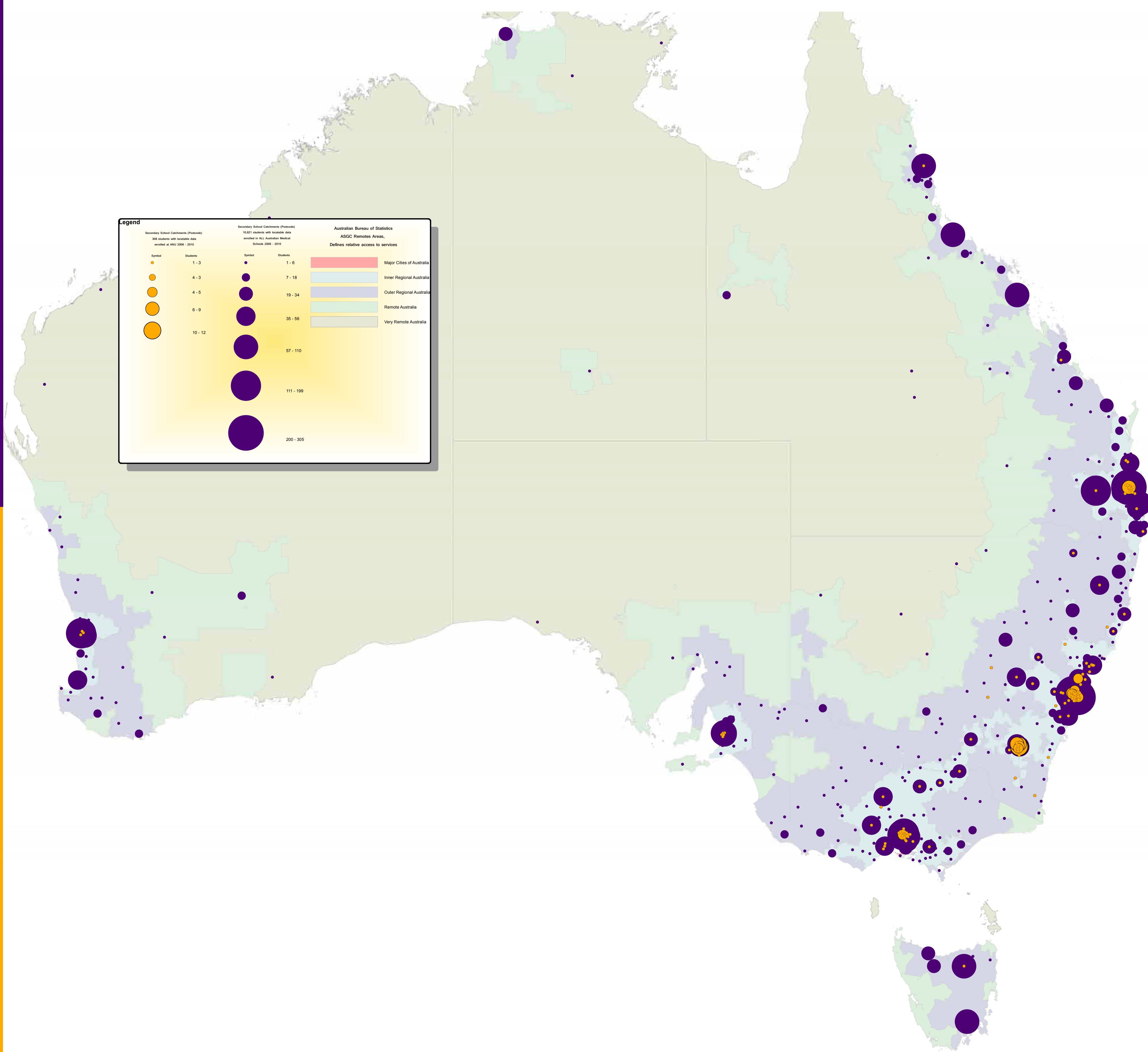


Spatial mapping medical school and student locations and origins:

illustrating the problems as a first step to finding solutions

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Aim and Rationale

Whilst Australia has significant medical workforce shortages and mal-distributions, medical graduate numbers have increased rapidly and will reach 3,108/year by 2014. Wide variation exists in the origin and location of students, training sites and medical school programs but little formal analysis of how these factors impact graduate practice type and location has been done to date.

A collaboration between The Australian Primary Health Care Research Institute (APHCRI), The Medical Schools Outcomes Database (MSOD) and the Robert Graham Centre in the USA is utilising geospatial analysis and mapping tools to help provide definitive answers on a national scale about how student origin and medical school culture affects subsequent workforce type and distribution.

Findings

This static display map shows student location of origin density dots for all medical student (purple bubbles) and the ANU Medical school (gold bubbles) overlaid on a map showing the remoteness classification of Australia. The further data for the ANU medical school is then shown in pie graphs to illustrate the state the student attended high school, their stated preferred region of work (on commencement of their medical studies and their stated preferred specialty. This serves as a specific example of the type of displays that will be available on MSOD Health Landscape module.

Total students included in MSOD database 2006-2008 n = 14,251
Mapped data n = 10,621 (Not including international origin students – 2,117, data missing or not locatable to postcode – 1,513)

Total ANU students in MSOD database 2006-2008 n = 405
Mapped ANU n = 308 (Not included international – 25, missing data – 72)

Methods

Data on medical schools and medical student numbers is from MSOD database. Commencing Medical Students Questionnaire (CMSQ) and the Medical Schools Data (MSD) (see <http://www.medicaldeans.org.au/medical-schools-outcomes-database>).
Base map data on remoteness is from the ABS Remoteness Structure (RA) (2006) geographical boundaries The Australian Standard Geographical Classification (ASGC) is used by the ABS for the collection and dissemination of geographical classified statistics. The RA defines relative access to services. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1259.0.30.004Main+Features12006?OpenDocument>
The collaboration will produce layers in an interactive web enabled mapping platform Health Landscape Australia – (see the beta production site at <http://www.anu.edu.au/aphcri/healthlandscapeaustralia/index.html>).
Layers with density dots for medical school numbers in unique colours for each school can then be compared with layers showing workforce distribution and/or indices of social disadvantage.
For this poster MSOD data has been mapped to static output to illustrate the type of product and information that will be provided.

Benefit to the Community

The interactive web based mapping tools offer accessible visually engaging output to illustrate complex issues. As such they are a powerful tool in knowledge exchange and translation. These data, available on an a web enabled platform, will inform medical schools, community, potential students and policy makers about initiatives to address community objectives on workforce shortages.

The longer term aim of this project is to gather data and to monitor changes in 5yr cohorts of medical graduates looking at influence of medical schools on workforce issues.

