Australian Government
Australian Institute of Health and Welfare

ABDS2026: small area estimates

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Karen Bishop, AIHW Burden of Disease and Mortality Team

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Stronger evidence,
better decisions,
improved health and welfare

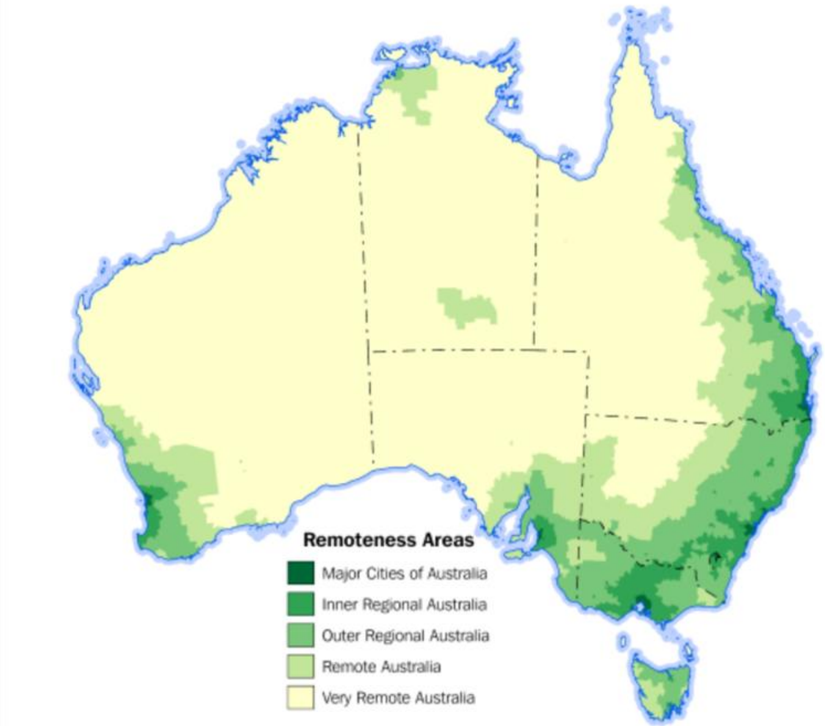
“Subnational” in the ABDS

In the ABDS subnational refers to:

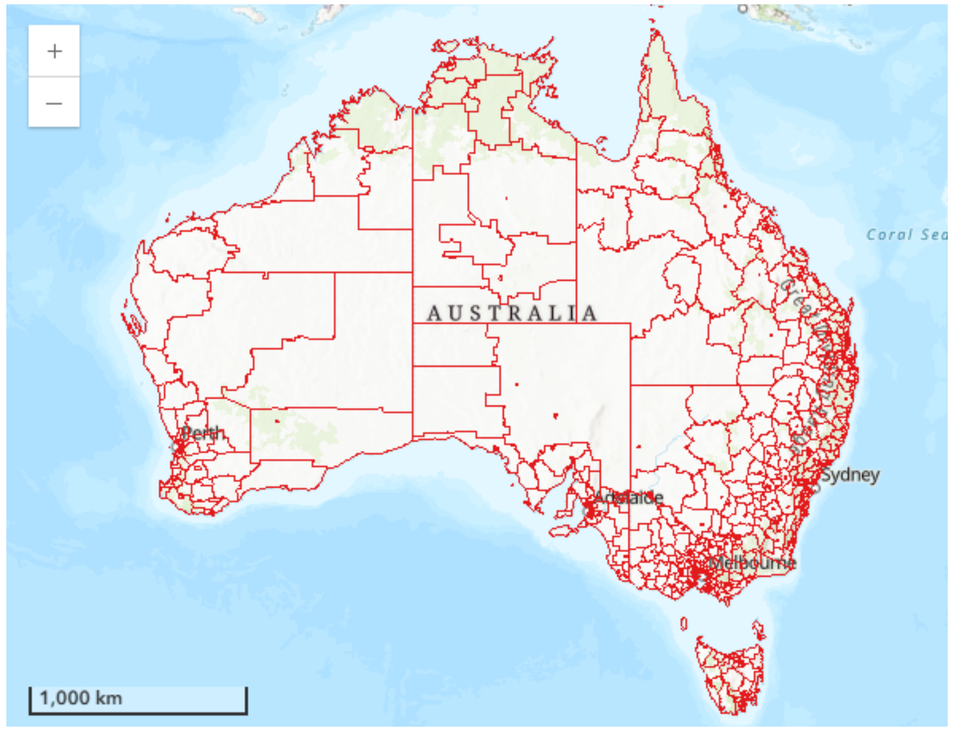
- 8 states and territories
- 5 remoteness areas
  - Based on access to services by road distances
- 5 socioeconomic areas
  - Equal fifths of the population according to an area-based level of economic disadvantage of the area of usual residence

For the first time, ABDS2026 will include small area estimates for 2026

Remoteness areas



Statistical Local Area Level 2 (SA2)



Population by remoteness

- Major cities (72%)
- Inner (18%) and Outer (8%) regional
- Remote (1.2%) and Very remote (0.8%)

Small area geography

- SA1 N~62,000
- SA2 N=2,473 areas
- SA3 N=359
- SA4 N=108

Sources: ABS Maps | Australian Bureau of Statistics, 12/9/2025; https://www.naa.gov.au;

Past approach to subnational estimates

Subnational estimates

- ABDS 2011, 2015 and 2018
- Disease burden: YLL, YLD, DALY and HALE – all subnational areas
- Risk factor (attributable) burden - socioeconomic areas

Used 3 broad methods to estimate burden for each subnational level

1. Direct estimation using ‘raw’ source data for the distribution at subnational level
2. Indirect estimation using a secondary data source to obtain a subnational distribution
3. Applied a subnational population distribution (by age and sex)

These methods are resource intensive and depending on the cause, a combination of methods was used and /or additional modelling at subnational level

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What's new in ABDS2026?

ABDS2026 will

- update previous subnational burden of disease estimates (S/T, remoteness and socioeconomic) for all years 2011, 2015 and 2018
- include small area estimates for the first time
- estimate national burden using projections of past trends ("nowcasting") for 2026 (including 2023 as an intervening year)

$\Rightarrow$ not feasible to assemble the time series data and run projection models for each subnational population

- A new approach is needed
  - consistent methodology applied to subnational and small-area estimation
  - achievable within current resources and timeframes
  - minimises data checking requirements and opportunity for errors
  - sustainable for annual updates
  - increased flexibility – to apply to other regional disaggregations and population groups

Proposed top-down method for ABDS 2026

Starting with projected national burden estimates for 2026

- Disaggregate across the lowest level of geography (Statistical Area level 2)

Small areas estimates obtained using

- Direct methods – using the latest available data source relevant to a cause
- Indirect methods - using an alternative data source for the geographical distribution
- Population distribution applied to the national level estimate

Combing multiple years of data as required -> sufficient numbers for robust distributions

Resulting distribution matrix

- A percentage distribution matrix by cause, sex, 5-year age group and SA2
- For each metric: YLL and YLD

Aggregation to other subnational areas

- SA2s can be aggregated to state/territory, remoteness areas and socioeconomic areas
- Further combined for other small areas estimates as required

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Data sources to inform ABDS 2026 matrix

Data sources that will be used to inform the distributions

- National Mortality Database (primary data source for YLL)
- National Hospital Morbidity Database (primary or secondary data source)
- Australian Cancer Database (primary data source)
- Census 2021 self-reported prevalence of long-term health conditions (secondary data source)
- Population distributions

Validating the small area approach

Comparison to different methods

- Assess by comparing YLL based on the proportional distribution methodology for an existing year of data with YLL produced using direct estimation
- Compare results in ABDS2018 with outputs for 2018 in ABDS 2026
- Compare estimates based on aggregated SA2 to directly calculated for SA4 and state/territory estimates
- For selected causes, validate the top-down state estimates against the National Health Survey state level estimates

Robustness of SA2 distributions

- Assess the required number of years to combine for robust SA2 distributions by age and sex
- Assess the stability of regional proportional distributions over time

Adjusting for bias

- Example: regional differences in hospitalisations may be driven by access
  - Assess whether an adjustment factor based on distributions of hospitalisations compared with deaths/populations could better reflect the likely regional distribution of the affected causes

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Strengths and limitations

Strengths

- Systematic approach for all subnational areas
- Main data sets (deaths, hospitals and cancer registry) have SA2 area of usual residence
- Streamlined data analysis for each cause; no additional and separate modelling
- Internal consistency of burden estimates
- Method can be further applied to:
  - Other population groups (e.g. culturally and linguistically diverse populations
  - Other areas (e.g. local government areas and Primary Health Network)
  - Annual updates
- Time series for small areas

Limitations

- The direct method is limited to data sources that have SA2 information
- The severity distributions are assumed to be the same across regions
- The methodology is best suited to (relative) regional comparisons rather than (definitive) estimates of burden for each region

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Proposed reporting and outputs

Levels of reporting

- Time series subnational estimates (state/territory, remoteness and socio-economic group)
- Small area estimates
  - For 2026 only at the Statistical Area Level 4 (SA4) level to ensure sufficient numbers (108 areas)
  - Potentially restricted reporting such as leading 50 causes of burden, disease group level by sex and age (with combined ages as required)

Outputs

- Interactive maps and data visualisations
- YLL, YLD and DALY in numbers, crude rates and age-standardised rates
- Interactive selection of disease group or cause of interest with filter for YLL, YLD and DALY for comparison by sex, region, and the national average
- Downloadable excel tables (machine readable files)

Steps in subnational and small area estimation

