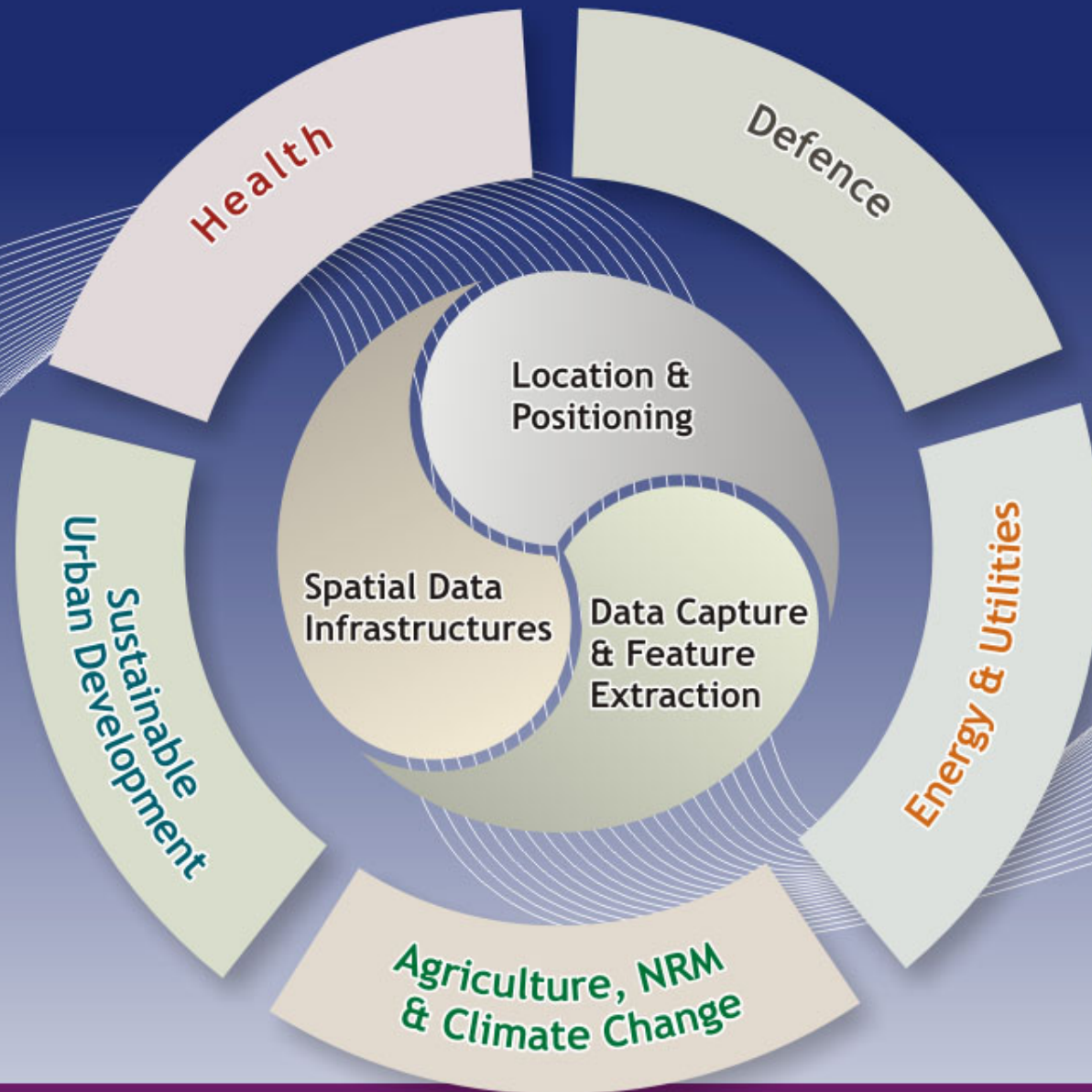


Spatial Data Infrastructures and Geocoding of Health Data in Australia

Narelle Mullan, James Boyd, Paul Konings, Danielle Butler,
Bert Veenendaal, Geoff West and James Semmens

SPATIALLY ENABLING AUSTRALIA



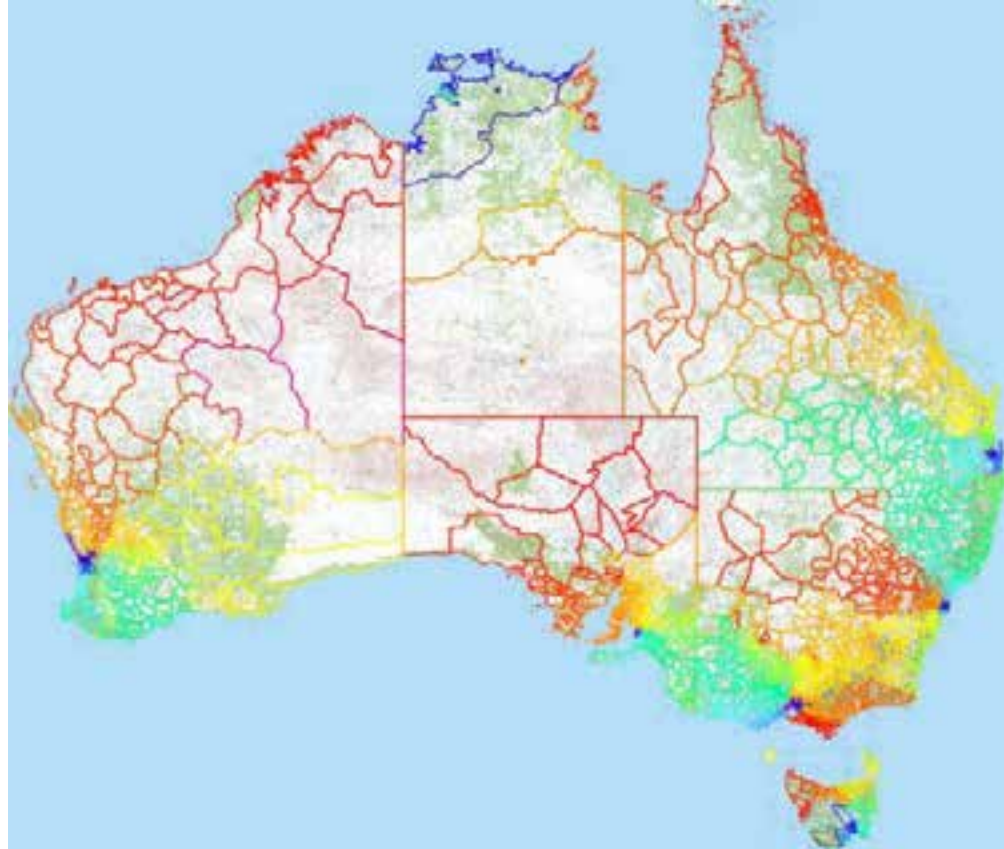
Australia has comprehensive hospital databases

Two recent initiatives are driving importance of place

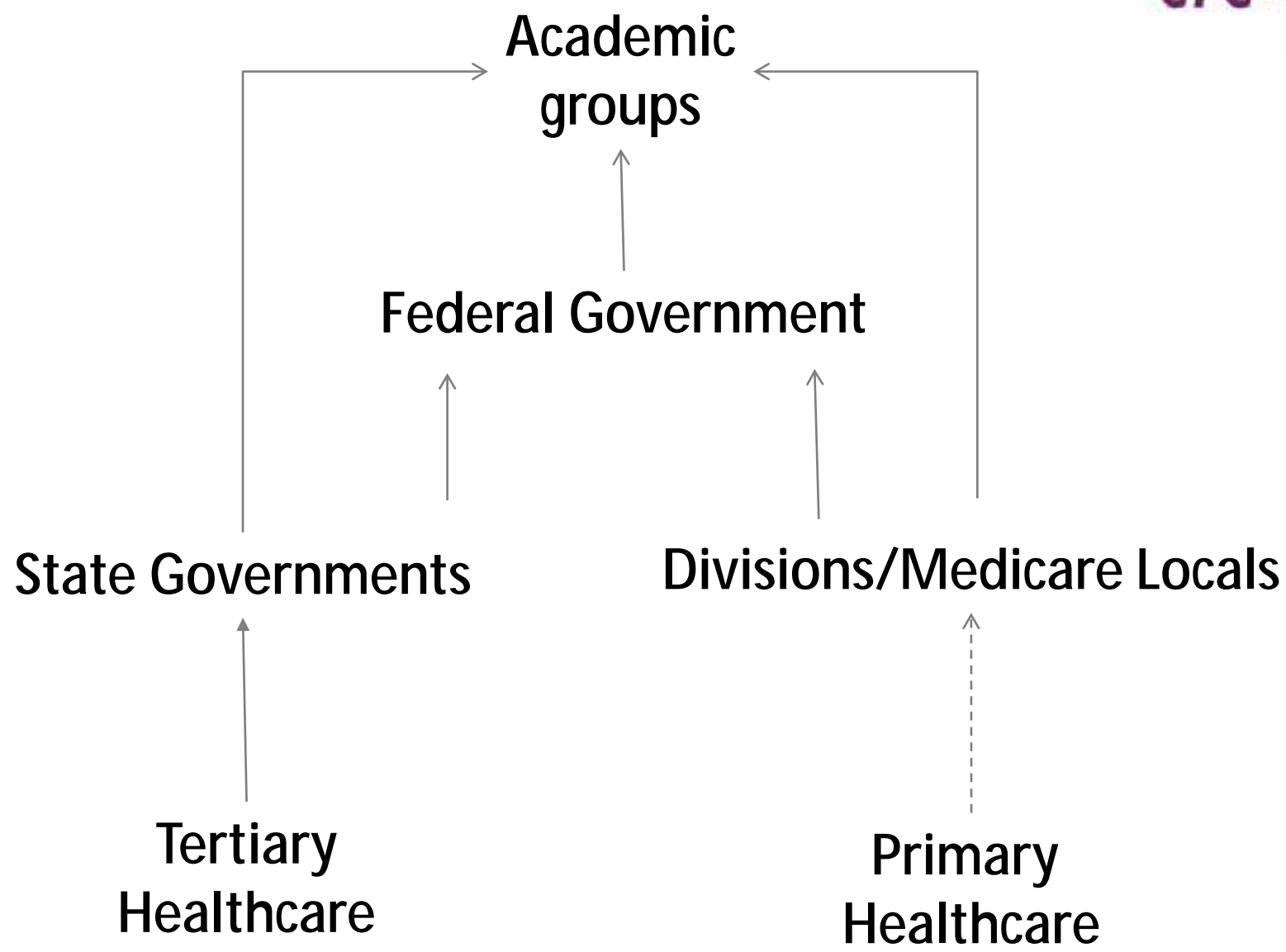
1. National Health Data Linkage (2008)
2. National Health Reform (2010)

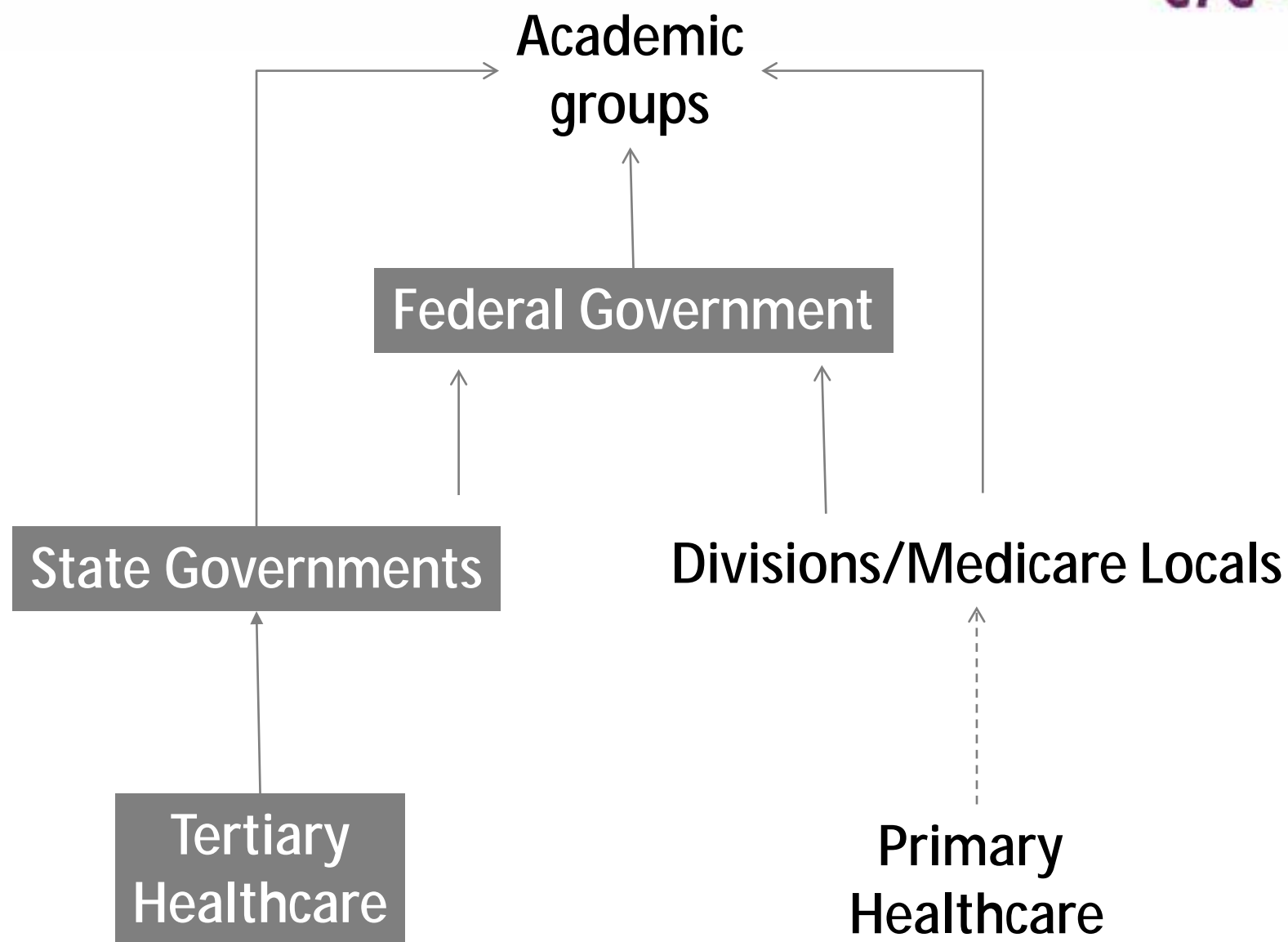


Australian Postcodes are not suitable for spatial analysis



à early interest in geocoding of patient data





Geocoding as an extension of health data linkage

Birth Records

Hospital Records

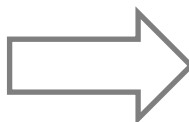
Cancer Registries

Death Records



CRADLE

GRAVE

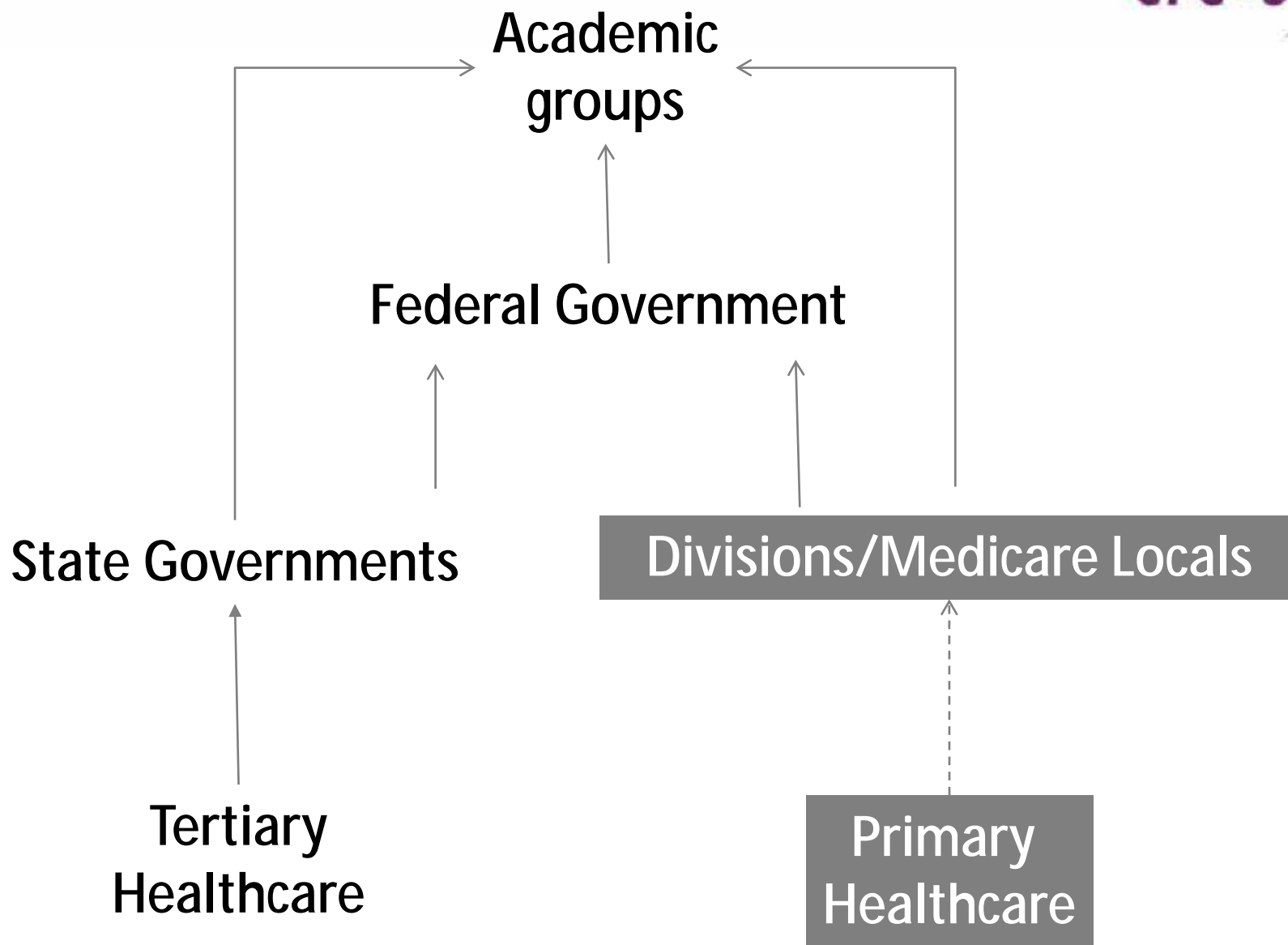




Challenge 1

Geocoding within Government

Inconsistencies of software & reference files within and between agencies



Challenge 2

Geocoding in Primary Healthcare

Point-of-collection geocoding and limited awareness of place in decision-making

Academic groups

LICENCING POLICY & PRIVACY ACTS

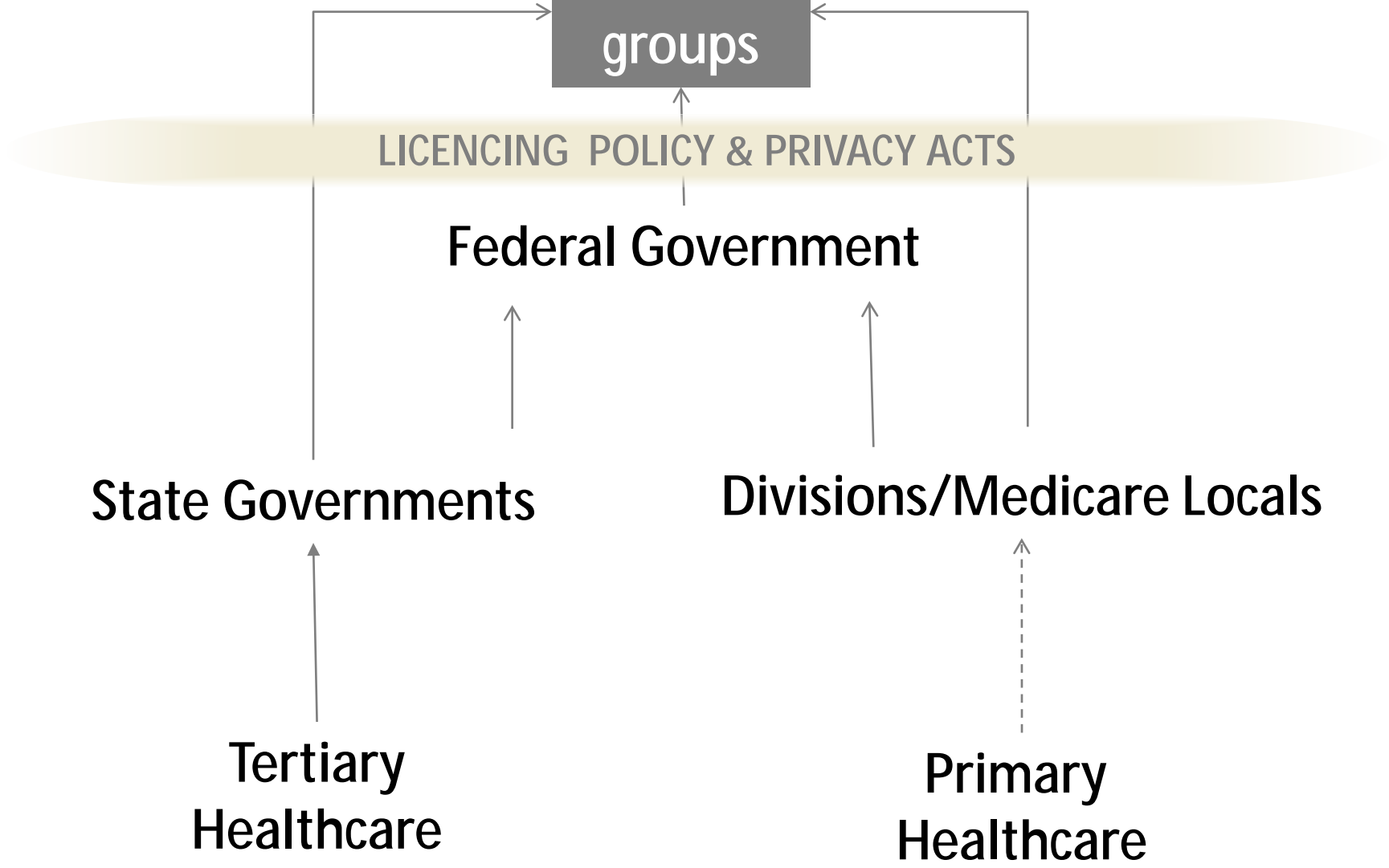
Federal Government

State Governments

Divisions/Medicare Locals

Tertiary Healthcare

Primary Healthcare

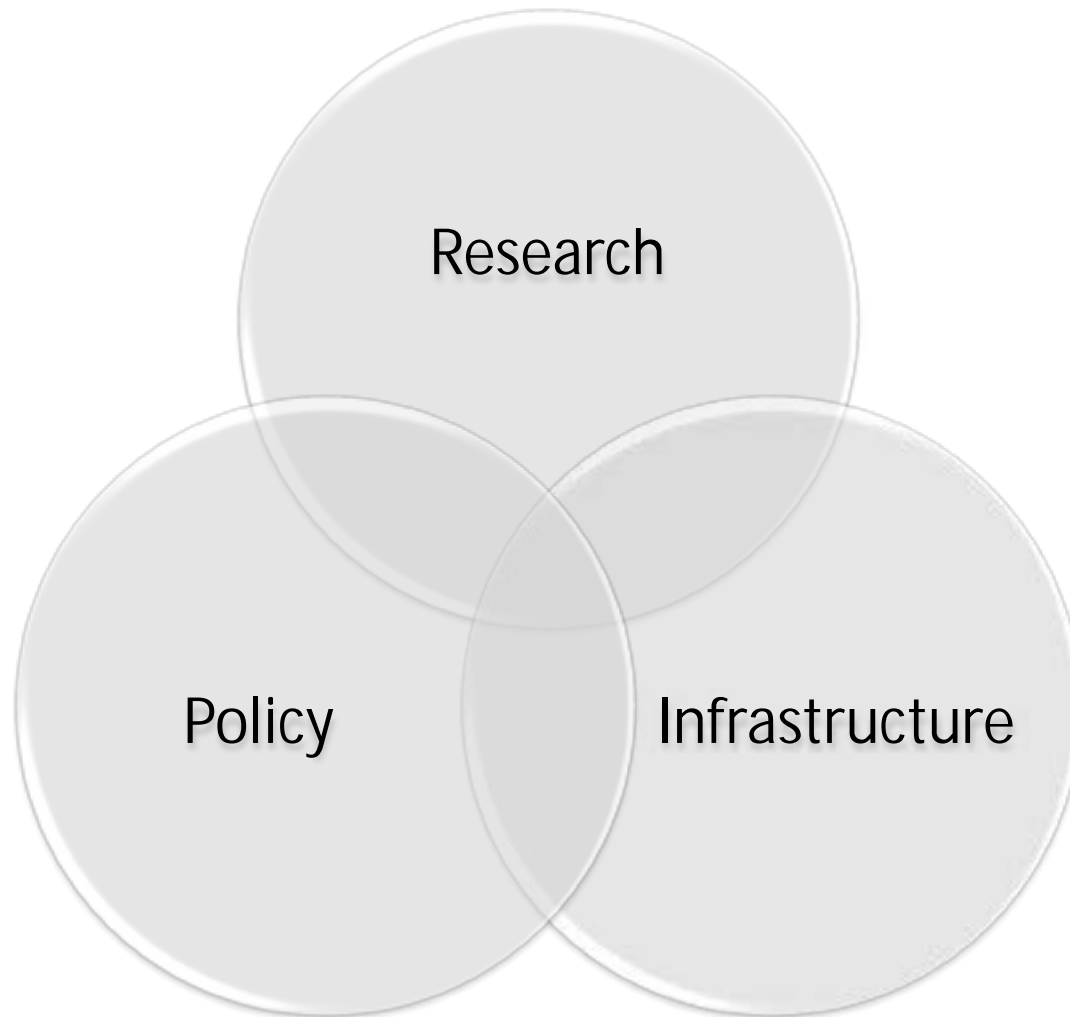


Challenge 3

Geocoding in Health Research

Licence restrictions and Privacy Acts
have restrained the demand for small
area analysis in research

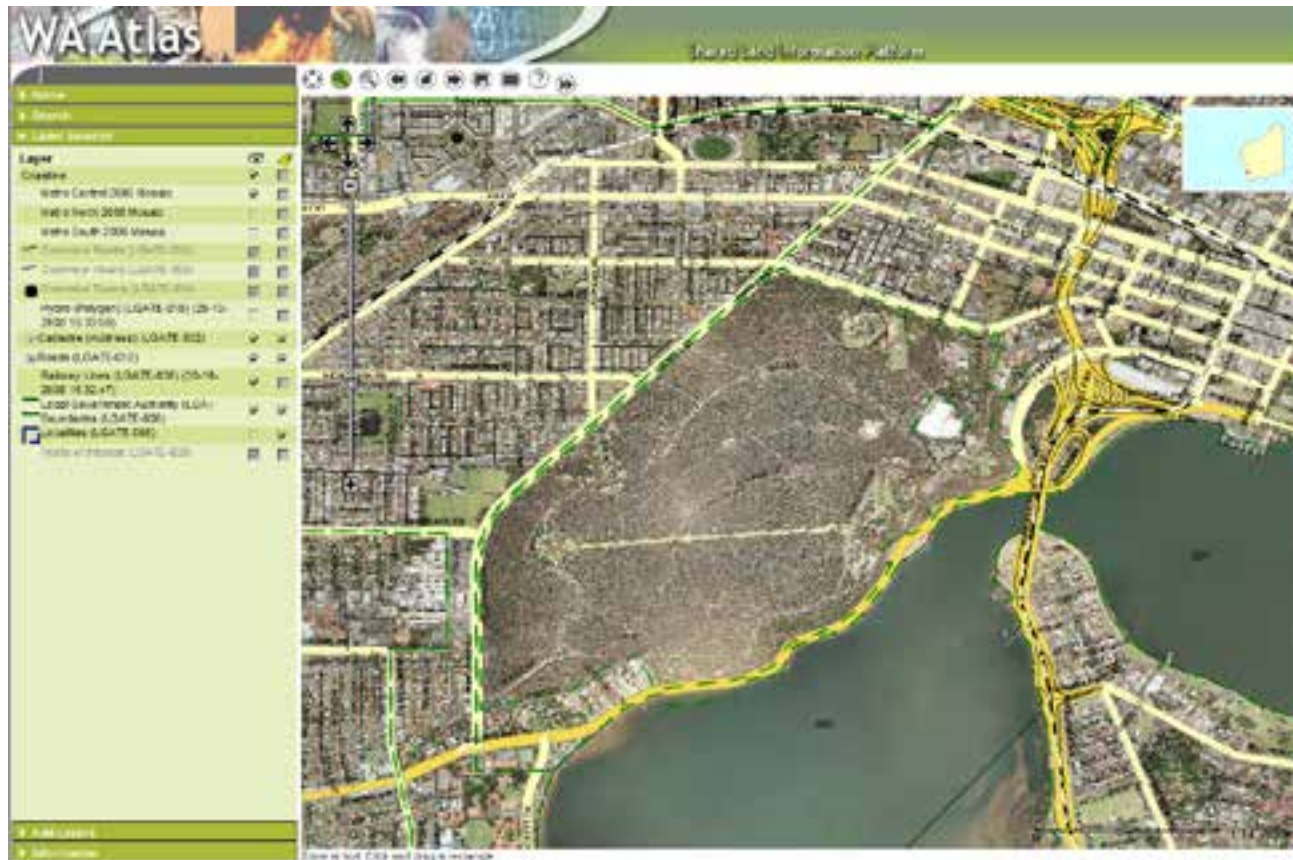
Solutions have come from a combination of ...



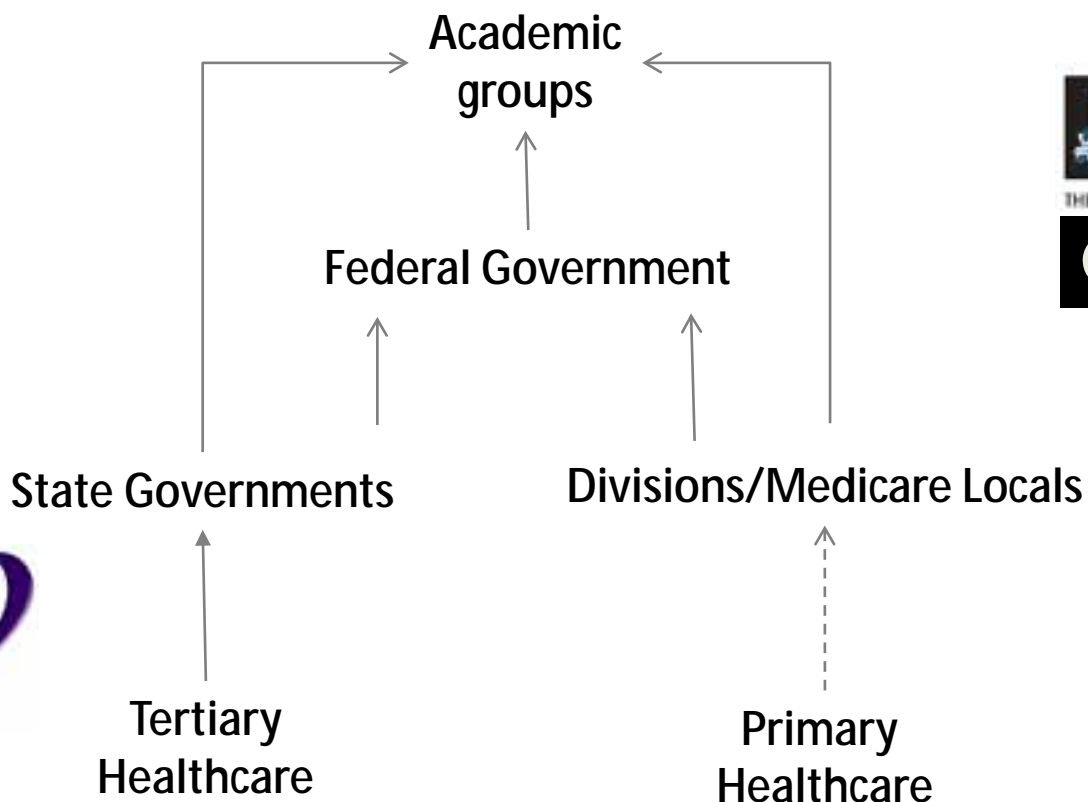
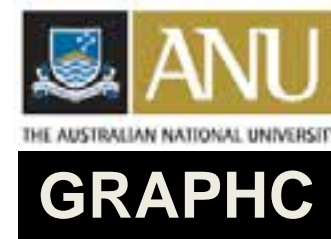
Policies for property data have improved consistency in government



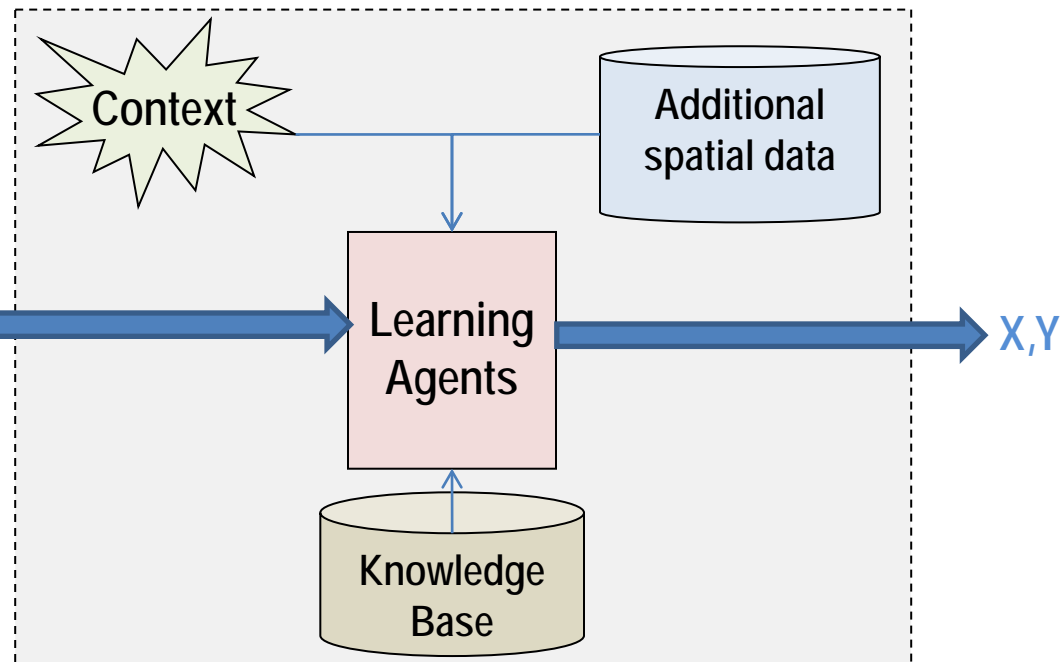
Spatial data infrastructure investment has enabled researchers and government access



Collaborations will have long-term impact on data collection, geocoding accuracy and dissemination of health data



Collaboration Example 1: Agent paradigm geocoding



-----Facts written-----

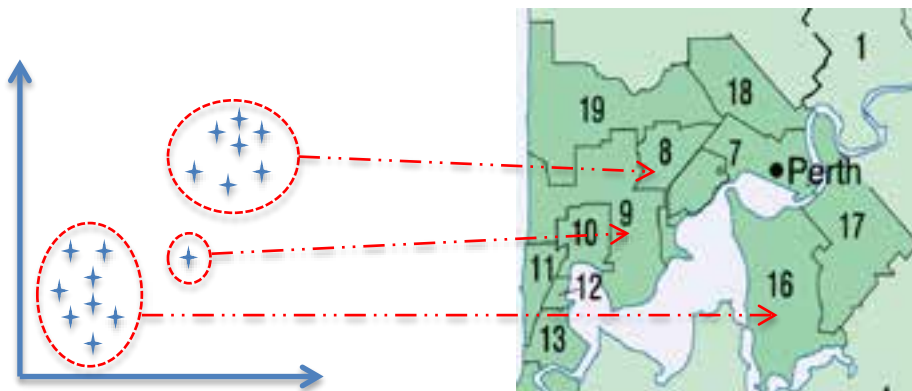
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(name "CLOVERDALE") (synonyms "PERTH AIRPORT") (Postcode "6105") (State "WESTERN AUSTRALIA") (quality_in
(name "EAST PERTH") (synonyms "PERTH") (Postcode "6000") (State "WESTERN AUSTRALIA") (quality_indicator
(name "FORRESTFIELD") (synonyms "PERTH AIRPORT") (Postcode "6105") (State "WESTERN AUSTRALIA") (quality.
(name "REDCLIFFE") (synonyms "PERTH AIRPORT") (Postcode "6105") (State "WESTERN AUSTRALIA") (quality_inc
(name "KENSINGTON") (synonyms "SOUTH PERTH") (Postcode "6151") (State "WESTERN AUSTRALIA") (quality_ind
(name "NORTHBRIDGE") (synonyms "WEST PERTH") (Postcode "6005") (State "WESTERN AUSTRALIA") (quality_ind
For a total of 8 facts in module MAIN.000
  
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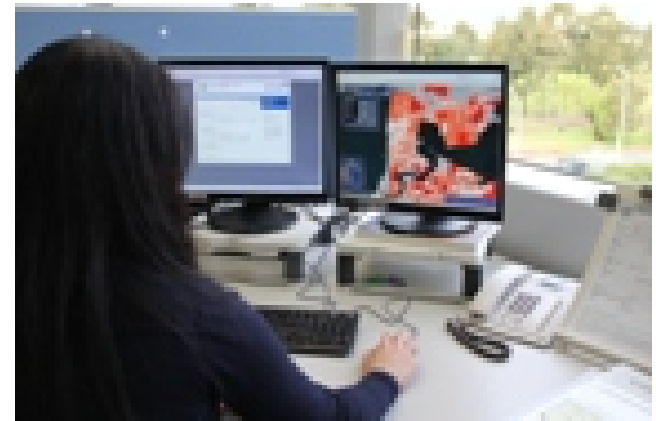
Knowledge base includes facts about related localities and postcodes.

Collaboration Example 2: Privacy preserving visualization

- Privacy with multiple linked representations
- Server-sided analytics
- Focus on allowing point-level analysis
- Government à Other agencies à Public



<http://www.accommodationperth.info/mapperth.pdf>



Next steps...

- Refine and publicise impact measures
- Health professionals β à Spatial infrastructures
- Expand collaborations to progress research

Thank You

