



Variation to population vulnerability to heatwave in Western Australia

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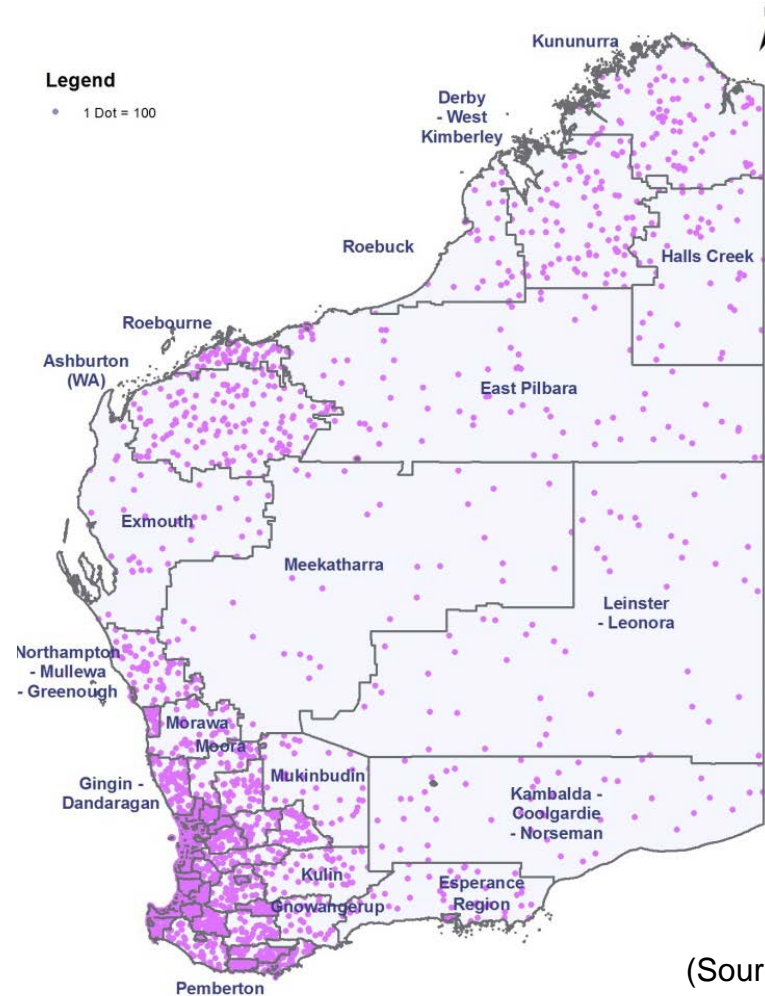
Risks from extreme heat

- Increasingly recognised as a significant public health issue
- Climate change
 - Hotter
 - Longer
 - More often
- Aging population

Event	Deaths
Chicago 1995	739
Europe 2003	~ 70,000
SE Australia 2009	374 + 58
Russia 2010	~ 15,000
India 2015	~ 2500



Population density by SA2



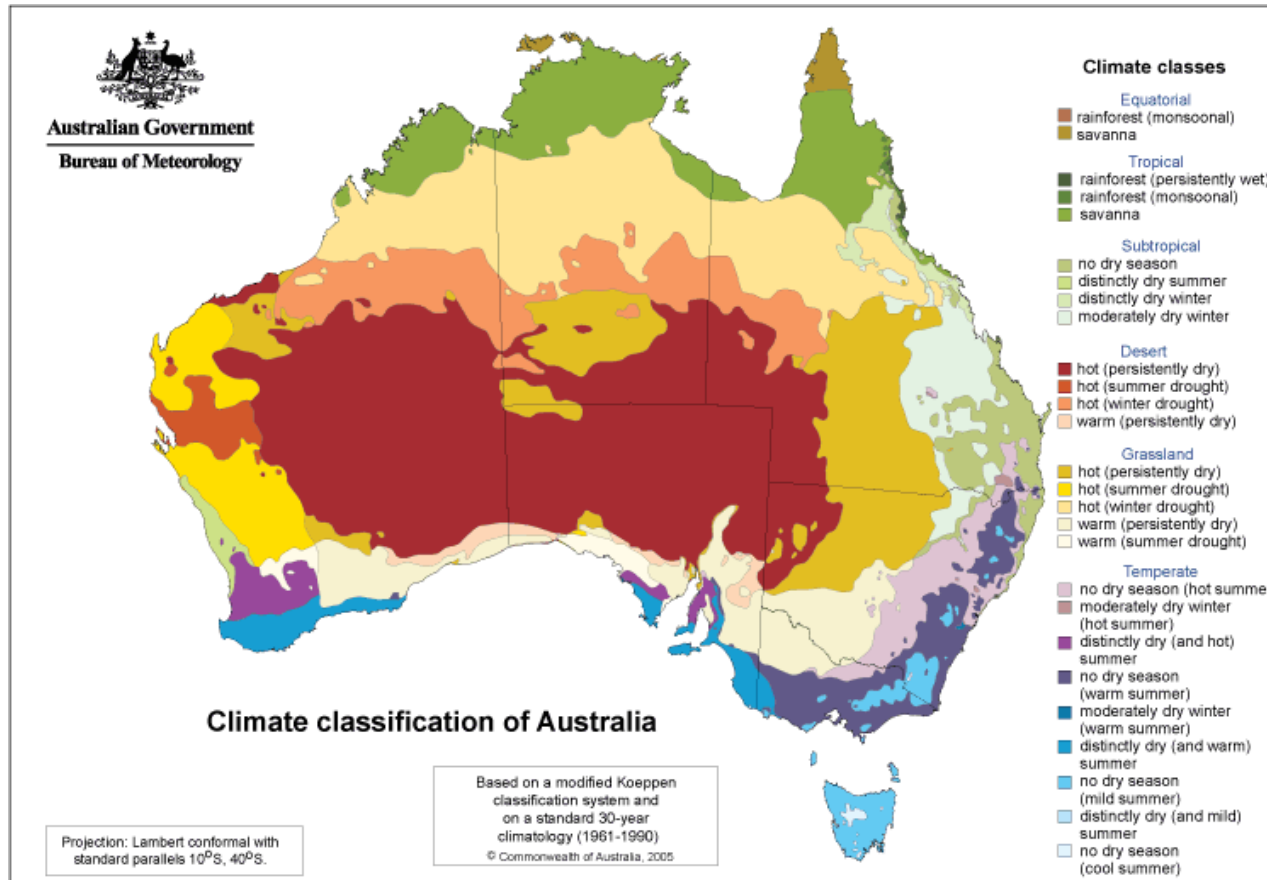
(Sourced from Geoscience Australia, 2017)

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Climate classifications



(Sourced from Bureau of Meteorology, 2017)

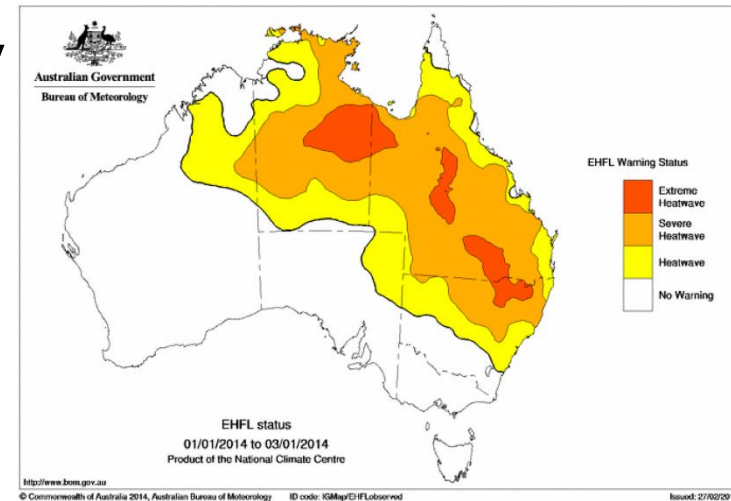
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Heatwave intensity

- Measured using the BoM's Excess Heat Factor (EHF) adapted to a Heatwave Severity Index (HWSI).
- HWSI data at SLA level was sourced from BoM
 - ≤ 0 = non-heatwave day
 - $0 > 1$ = low intensity heatwave day
 - $1 > 3$ = severe heatwave
 - > 3 = extreme





Risk factors

- Age
- Gender
- Socio-economic status (SEIFA)
- Service accessibility / remoteness index (ARIA)
- Health service usage
 - Emergency Department presentations
 - Hospitals admissions for cardiovascular, respiratory, renal, heat-related diseases using ICD-10 coding
- Location – using LGA and postcode data

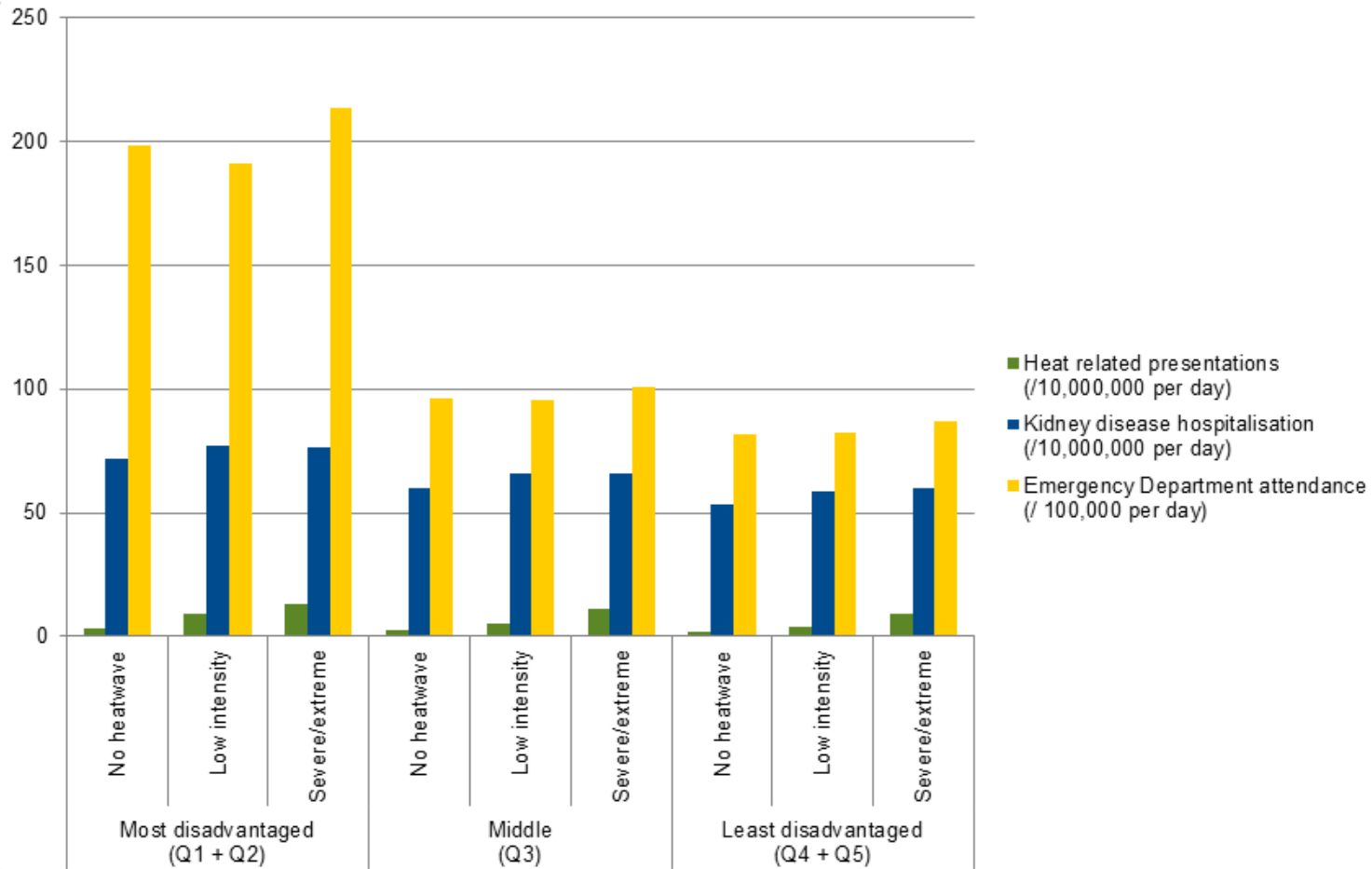


Results

- Dose-response relationship between health usage and heatwave intensity regardless of risk factor
- Sensitive indicators of heatwave
 - kidney disease hospital admissions
 - heat-related hospital admissions
 - Overall Emergency Department presentations



Socio-economic status (SEIFA)

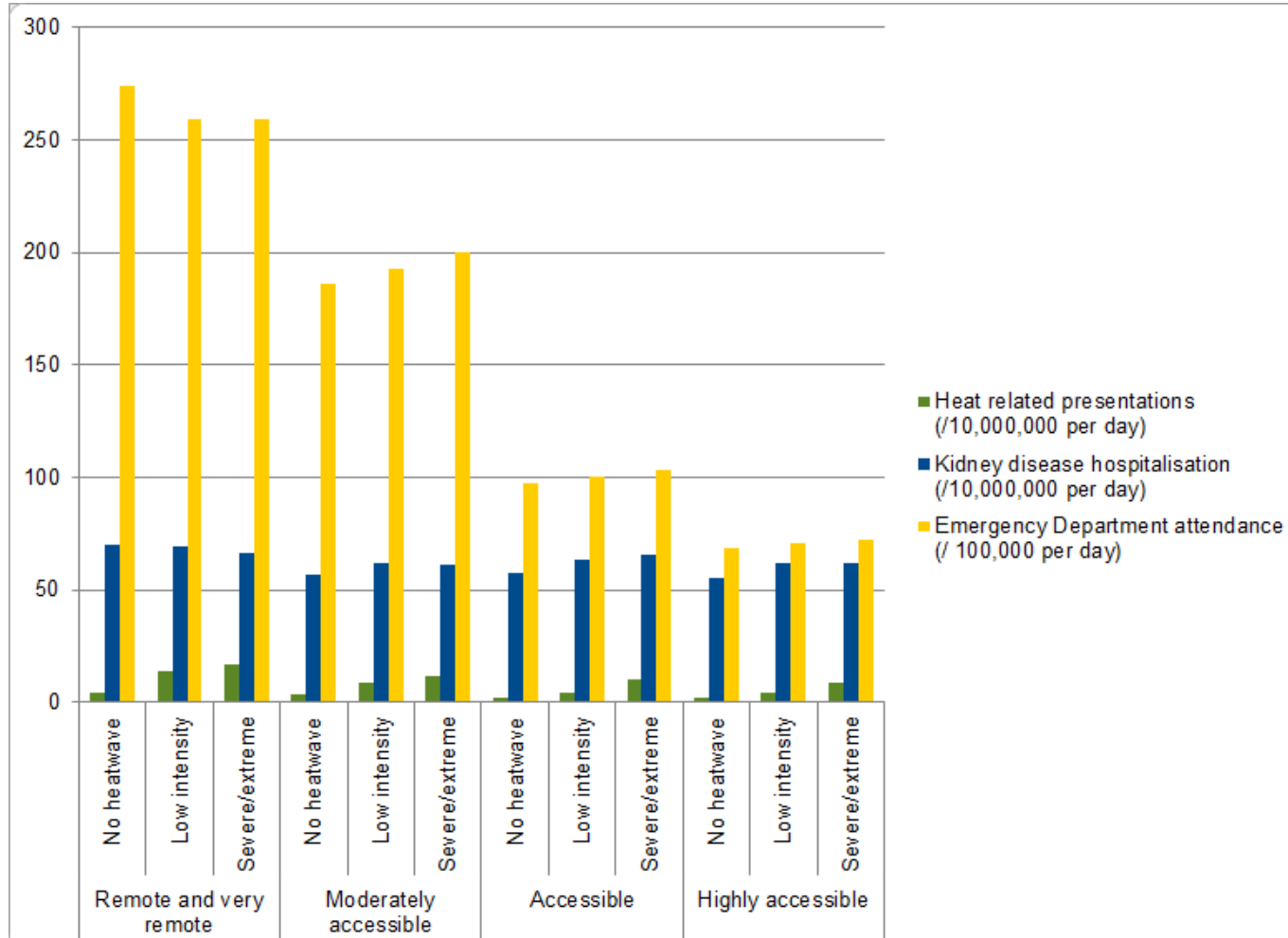


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Remoteness (ARIA)

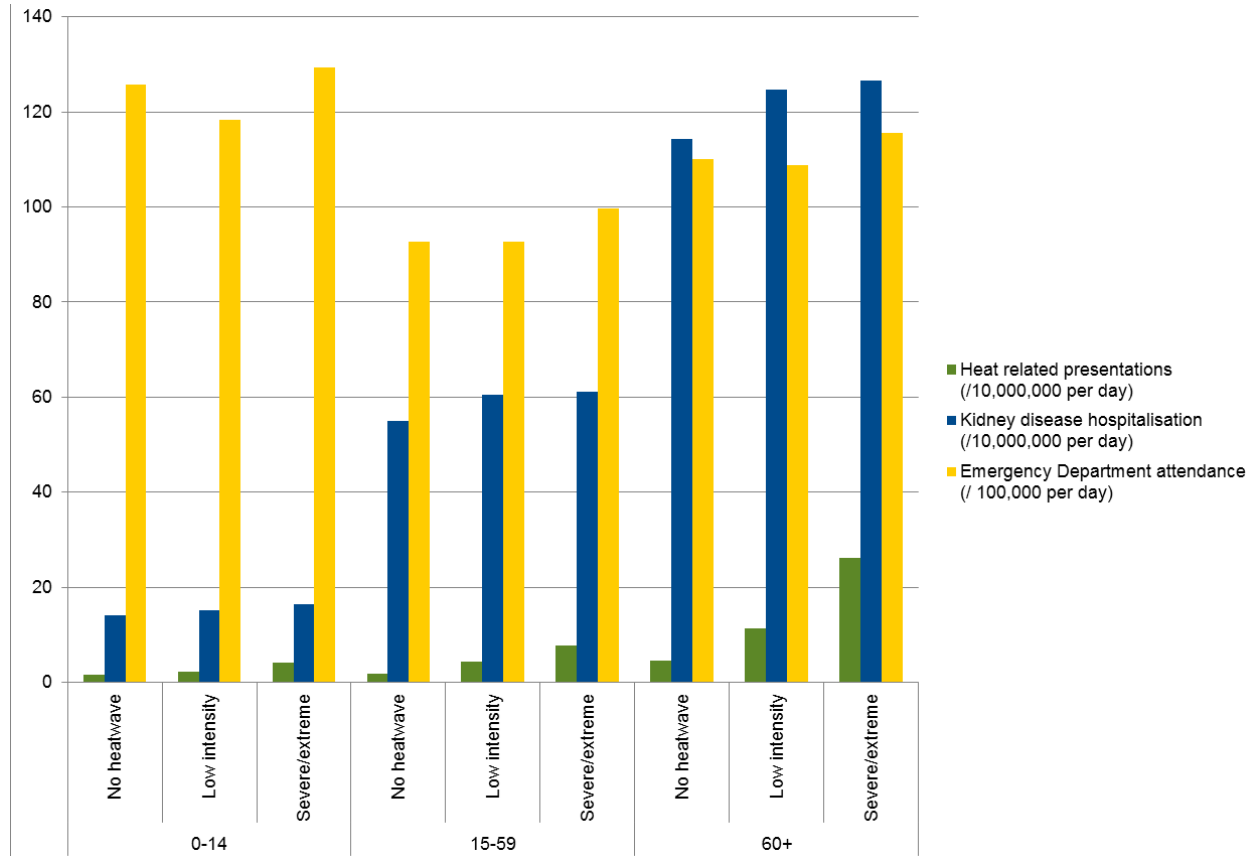


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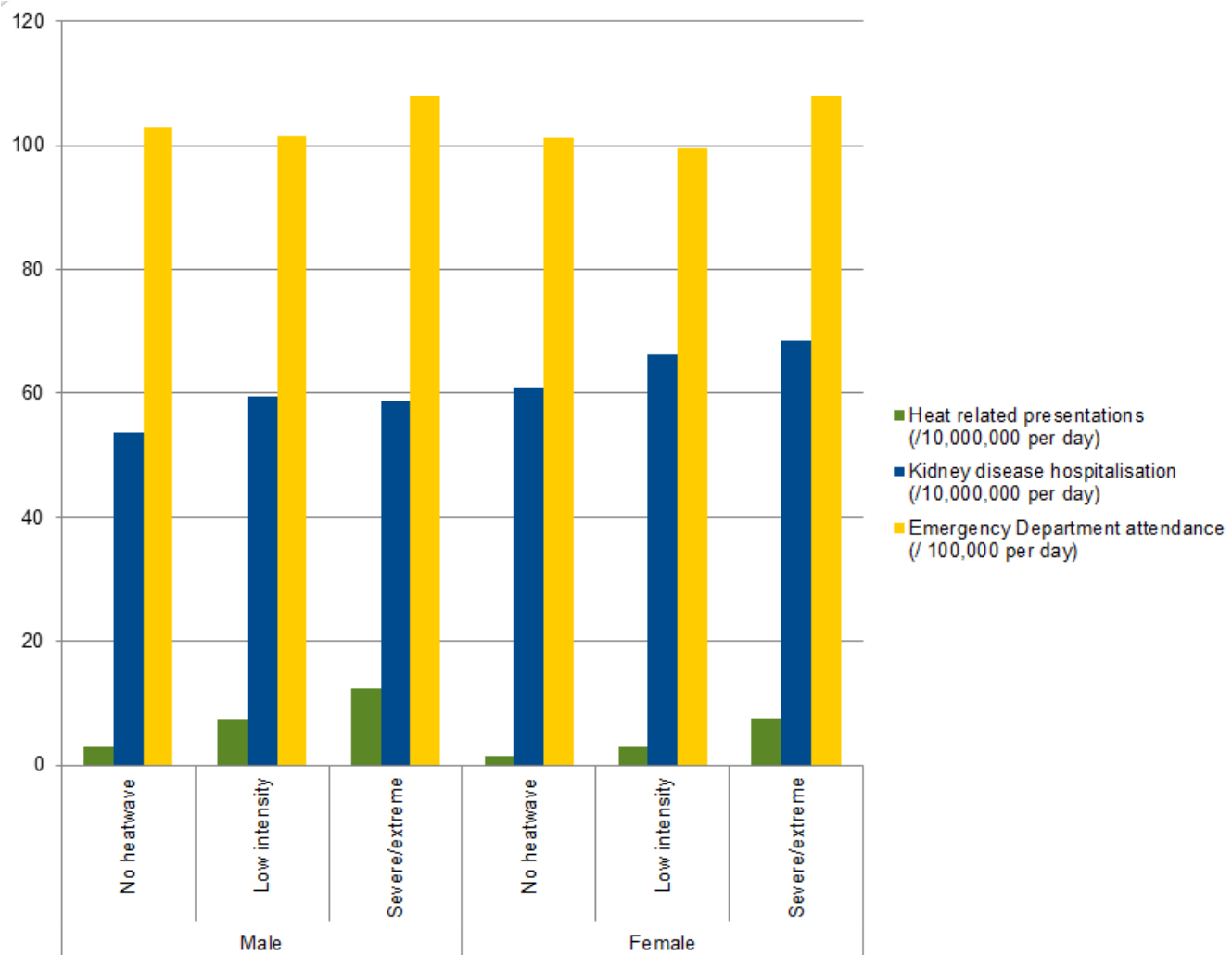


Age groups





Gender

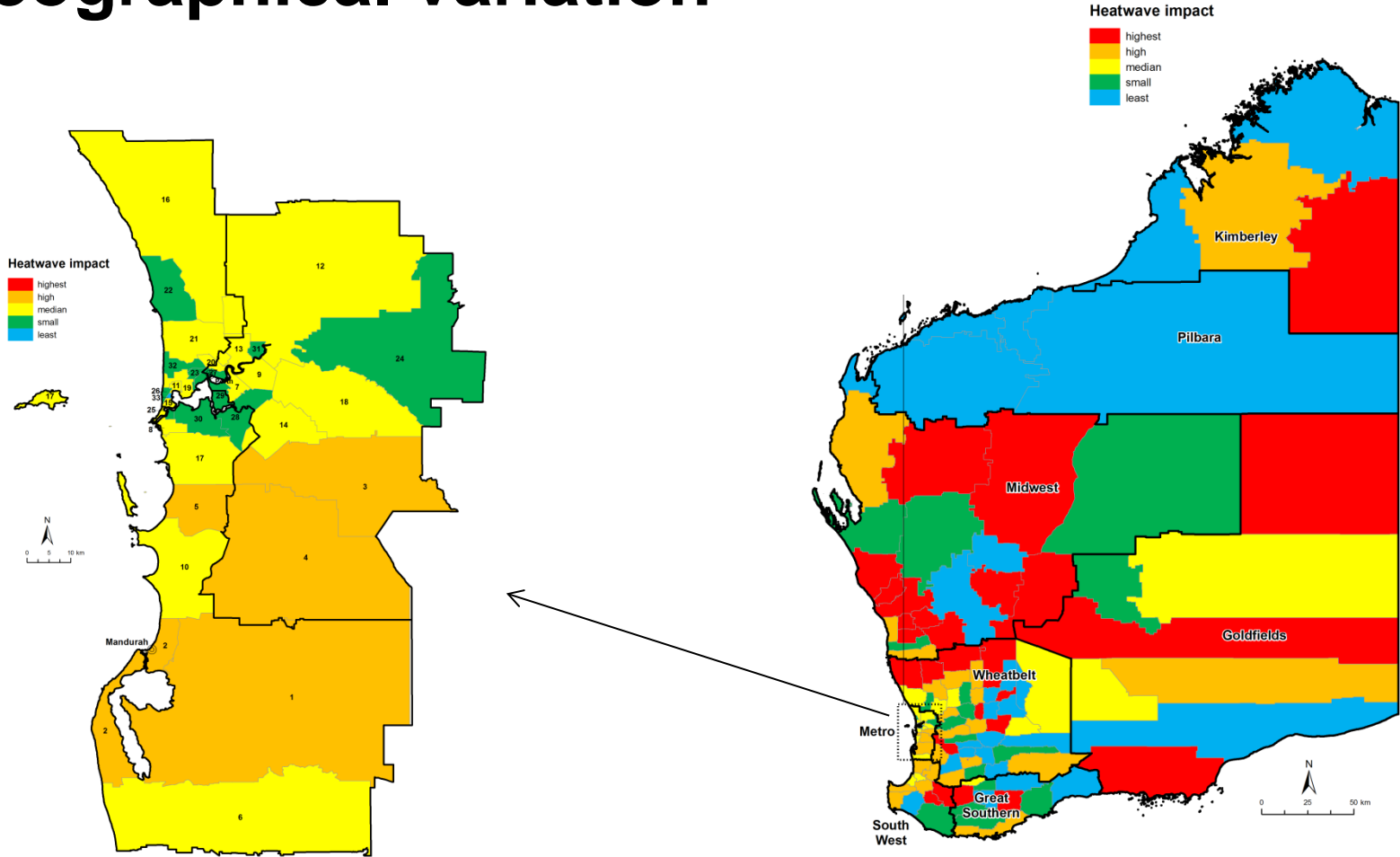


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Geographical variation

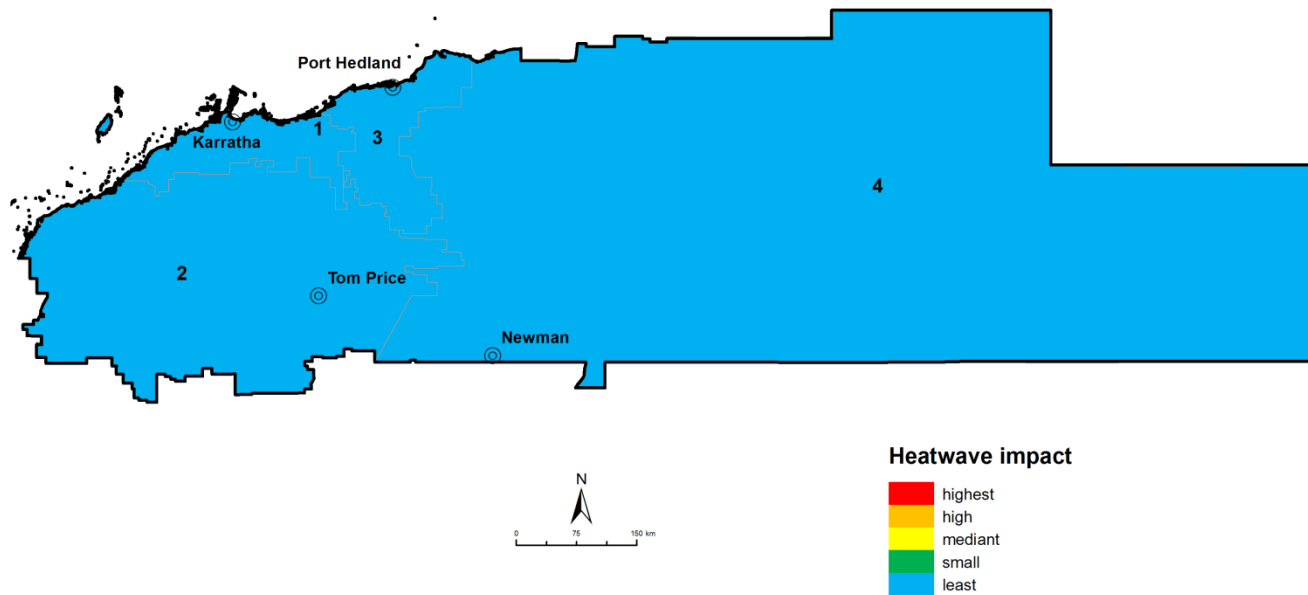


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Resilient Pilbara?





Implications

- Socio-economic status and remoteness are key risk factors to heatwave vulnerability
- Findings can assist in targeting and engaging the most vulnerable groups
- Tailor programs to the needs of the community.



Questions

