

Perils of place: Identifying hotspots of health inequalities

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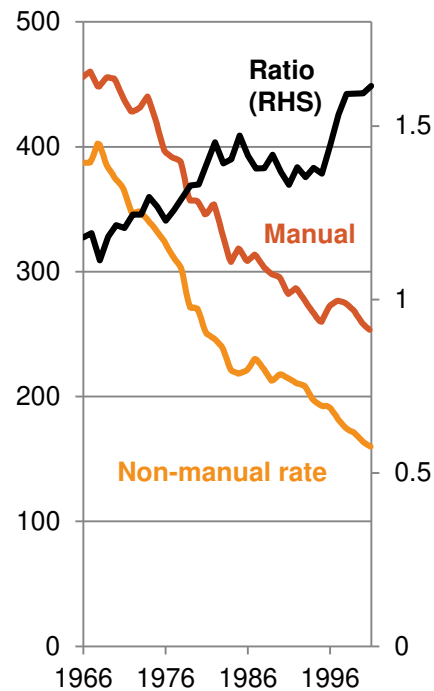


There are extreme disparities in health outcomes and conventional services have not narrowed the gap

There are large and persistent health gaps between **groups** and between **places**

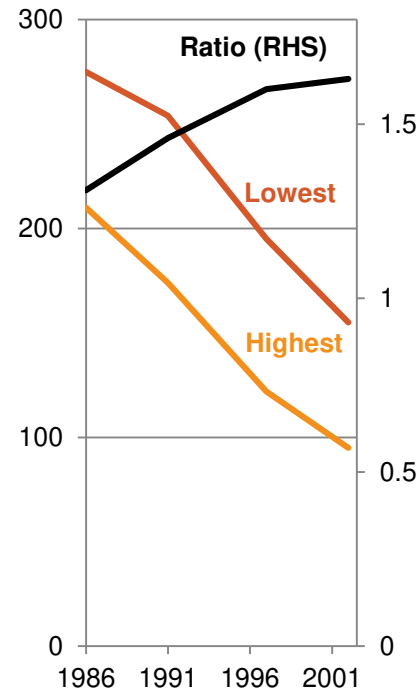
Men by broad labour group

Standardised mortality rate (per 100k)

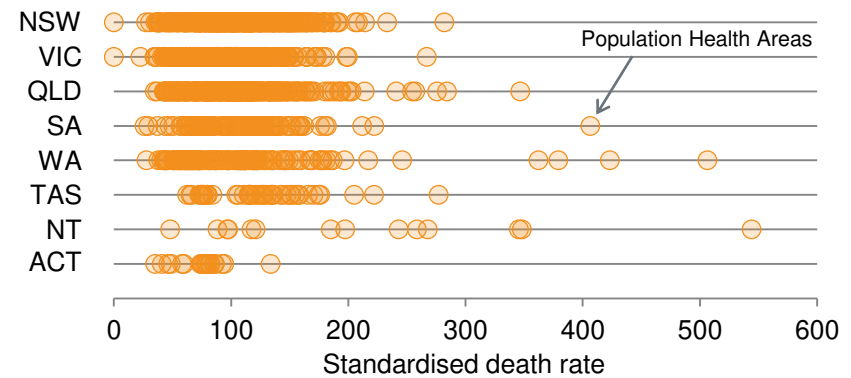
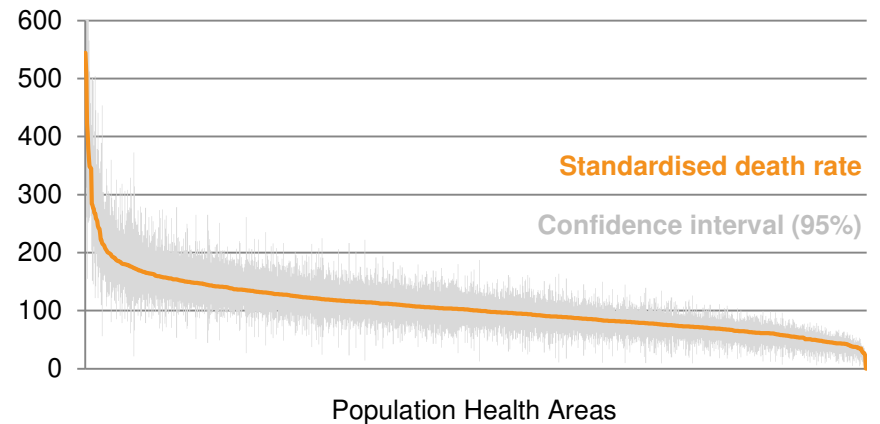


Areas by socioeconomic status

Standardised avoidable mortality rate (per 100k)



Standardised death rate



Notes: Second chart shows top and bottom SEIFA SLA quintiles
Sources: AIHW, Korda et al. 2007

Source: PHIDU

Our report

We focus on health inequalities between geographically-defined populations and ask:

1. Are there places with extreme health inequality that are amenable to action?
2. Is place-based targeting an efficient strategy for preventing poor health outcomes?

We know place matters... but we don't really know if we can do anything about it

Health status is affected by contextual factors:

1. Physical features
2. Availability of healthy environments at home, work and play
3. Services provided
4. Socio-cultural features of a neighbourhood
5. Reputation of an area

Evidence for what works is patchy:

- Few relevant evaluations internationally
- Causality and cost-effectiveness of programs rarely evaluated

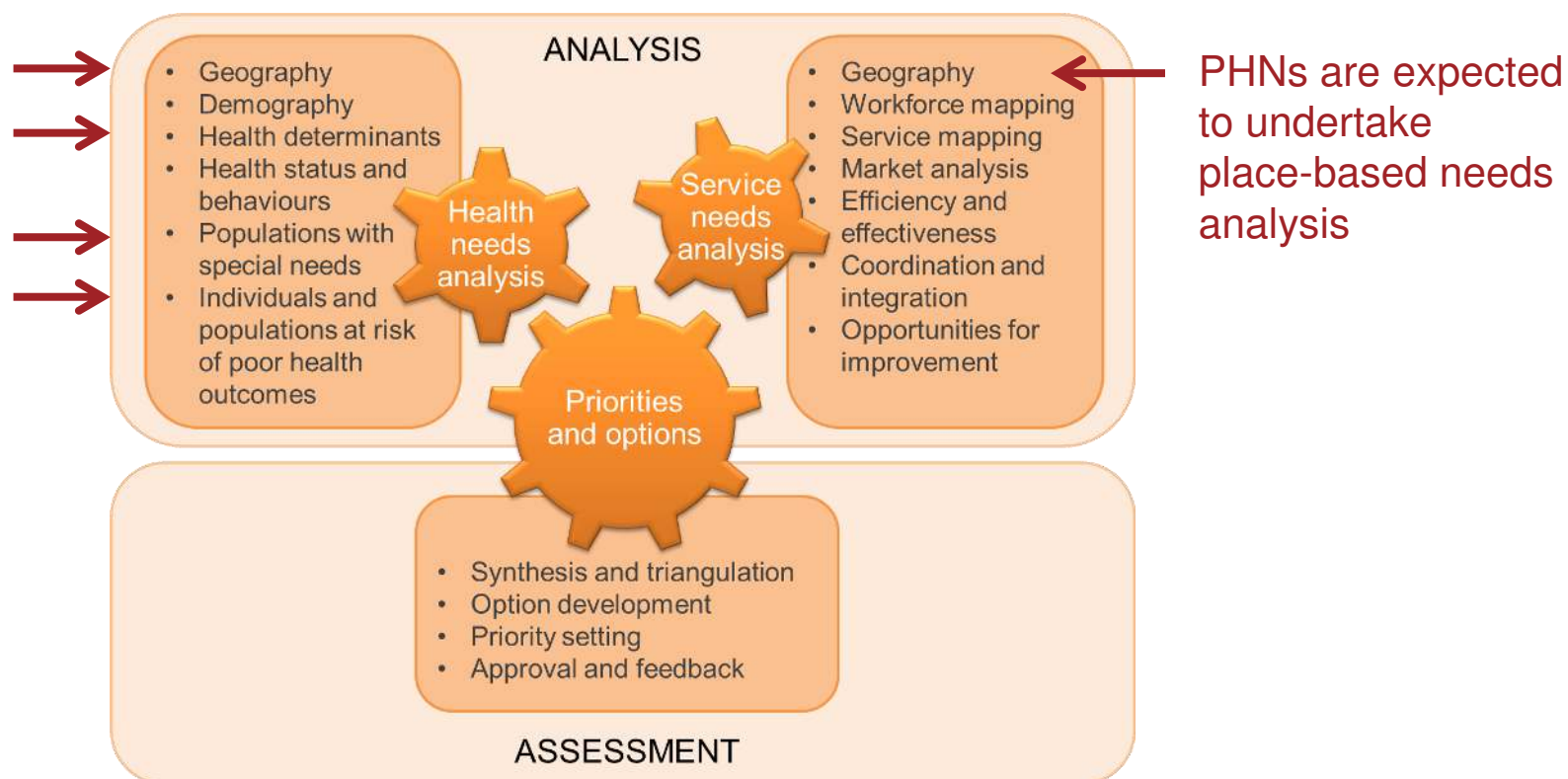
But some successes, e.g.

- Victorian Neighbourhood Renewal program
- NZ home insulation program

Who is responsible?

Primary Health Networks (PHNs) were established to increase the efficiency and effectiveness of medical services and improve coordination of care within their region based on:

“an understanding of the health care needs of their communities through analysis and planning”.



Which places should get priority?

Five principles for identifying 'hotspots' of health inequalities

1. **Preventability** – focus on health outcomes that we can do something about
2. **Disparity** – identify substantial differences in outcomes (in relation to societal norms)
3. **Persistence** – prioritise enduring disparities (extreme outcomes can be driven by chance)
4. **Predictability** – take action where disparity is likely to persist into the future (interventions take time)
5. **Impact** – pursue the places and interventions with greatest potential impact (absolute numbers of individuals affected, severity of the problem, efficiency in targeting high-risk individuals, and equity in addressing entrenched health inequalities)

Prevention is the place to start

Focus on health outcomes that are amenable to action: preventable illness, unnecessary suffering and gaps in health services

When people are *hospitalised* for conditions like diabetes or tooth decay, these are signs the system is failing – these conditions should be treatable or manageable out of hospital

- Hospitalisation is always a serious health outcome, but hospitalisations for some conditions are likely to be reducible through:
 - Vaccination
 - Early diagnosis and treatment
 - Good ongoing control and management
- 22 categories of *potentially* preventable hospitalisations (e.g. diabetes complications, asthma, dental conditions, skin infections)
 - 6 per cent of all hospitalisations
 - 2.4 million bed days

**Ambulatory care sensitive conditions (ACSCs)
are our outcome variables**

We experimented with a few ways of measuring hotspots

✗ Traditional spatial methods

- Clusters of high rates (lose precision)
- Many hotspot studies use a single year of data

✗ Aggregation and Average rates

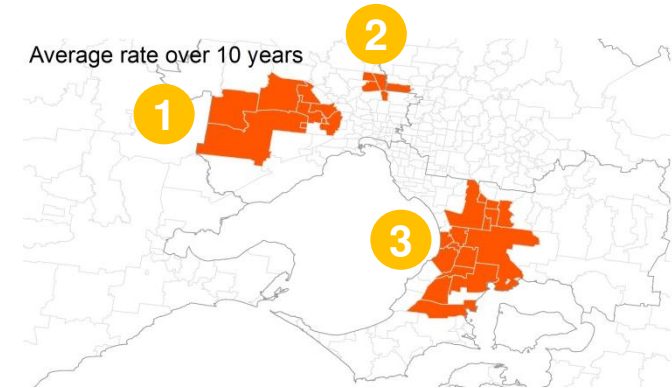
- Studies using multiple years of data tend to aggregate data across 3-10 years
- Some hotspot studies use average annual rate
- Aggregate or average rates are preferable to single year (more likely to reveal entrenched problems)
- But can reflect past situations and miss current problems
- Hides temporal trends

✓ Consecutive years of high rates

- Tough criterion
- Small area rates fluctuate year-to-year so the threshold matters
- Identifies places with *current* and *consistently* high rates
- Enables prioritisation of smaller areas without aggregation

✓ Other options, e.g.

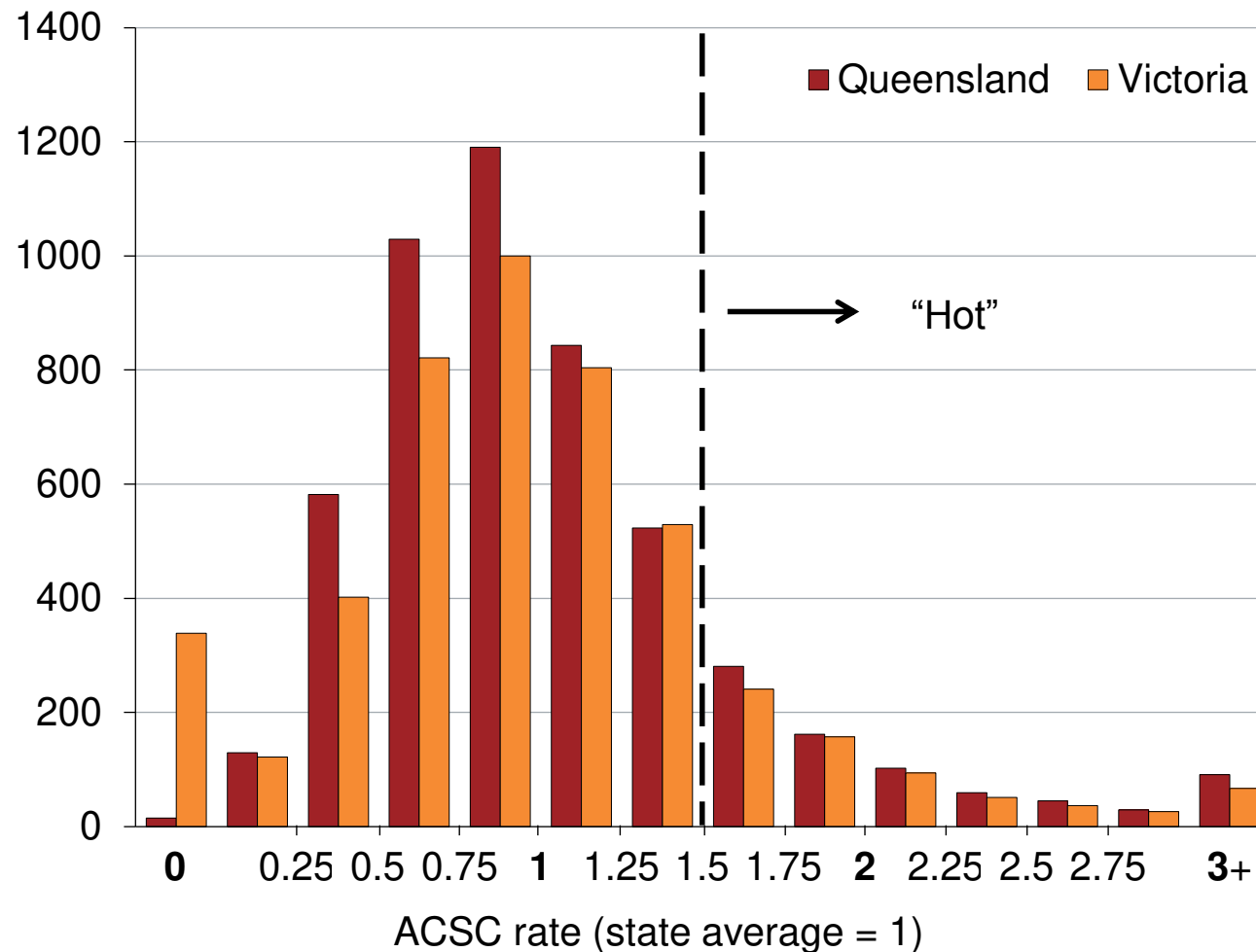
- Hot in at least 7 out of 10 years



Three clusters in
Melbourne

How we define disparity (heat)

Potentially preventable hospitalisation rates, by disease and area

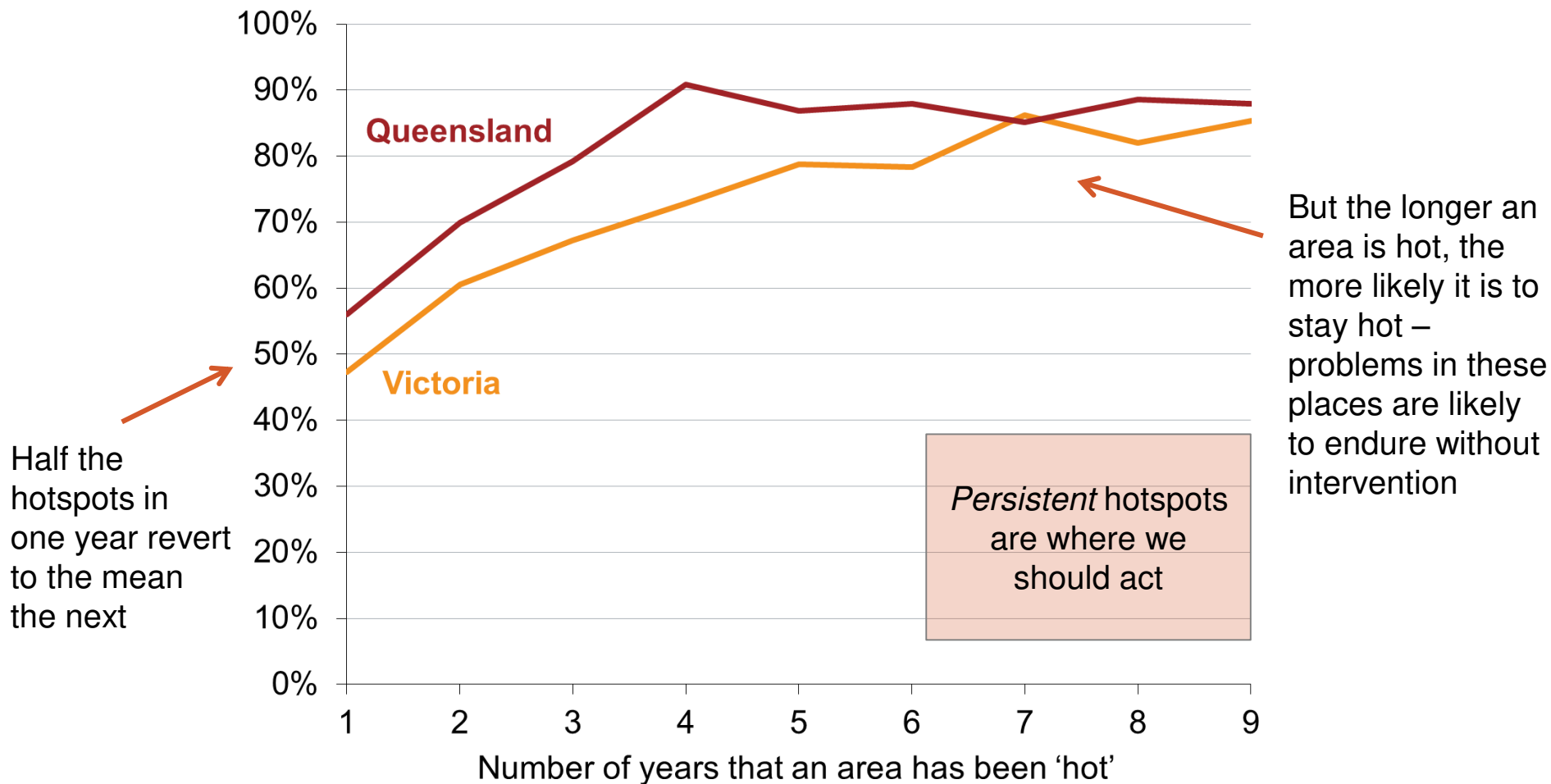


'Hotspots' have rates at least 50% higher than state average

Notes: "Hot" or "high rate" refers to rates at least 50% higher than state average for one or more conditions where hospitalisation is preventable or reducible. Rate multiples are displayed for the latest year of data only (2014-15 for Queensland, 2013-14 for Victoria). The ten highest-volume conditions are included. Sources: Grattan Institute analysis of state hospital admissions datasets - QHAPDC and VAED

Persistence is key: Many hotspots are fleeting but some places do have real, persistent health problems

Proportion of places that stay hot as a % of the previous year

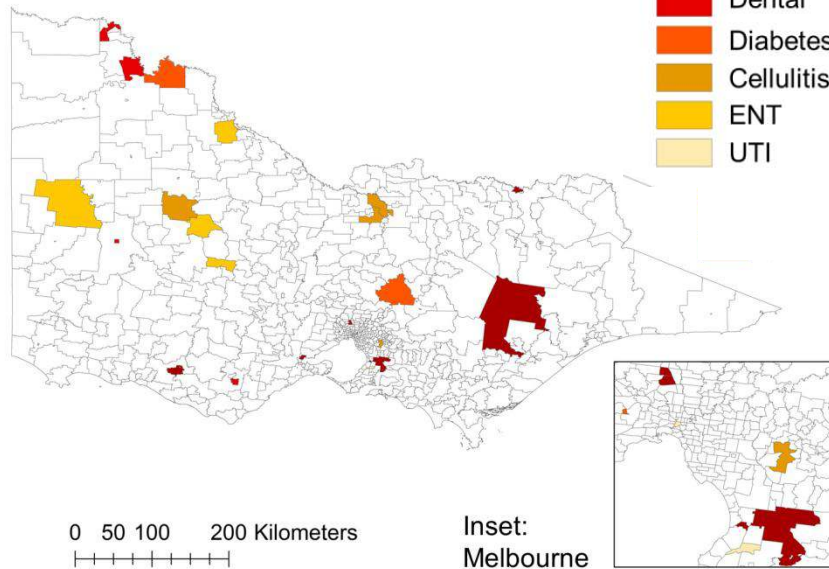
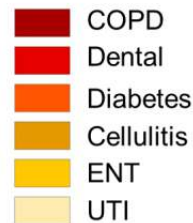


Finding 1: Our health system is consistently failing some communities (10 year view)

Some places have had appalling rates of potentially preventable hospitalisations for at least a decade:

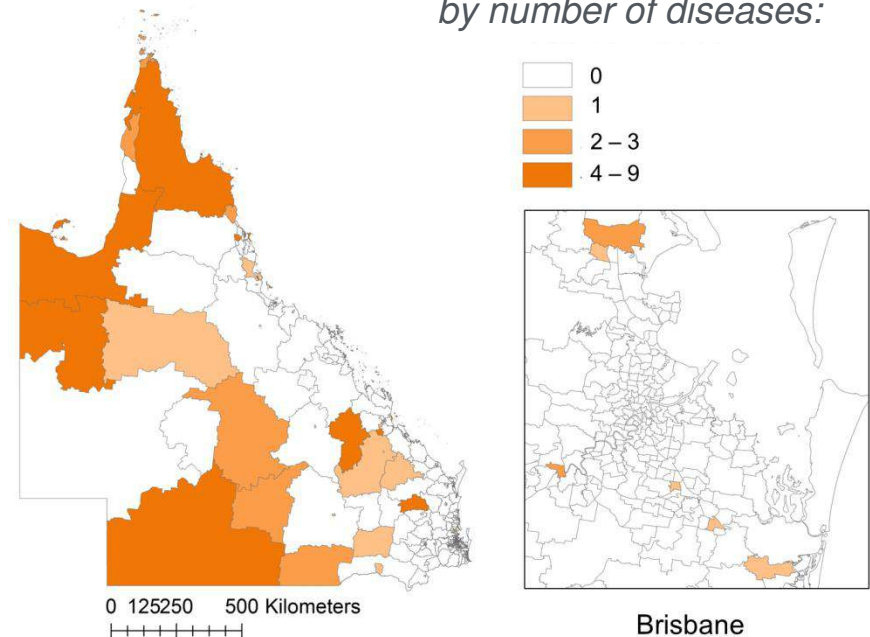
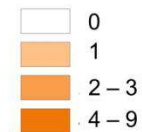
Victoria

Priority places
by disease:



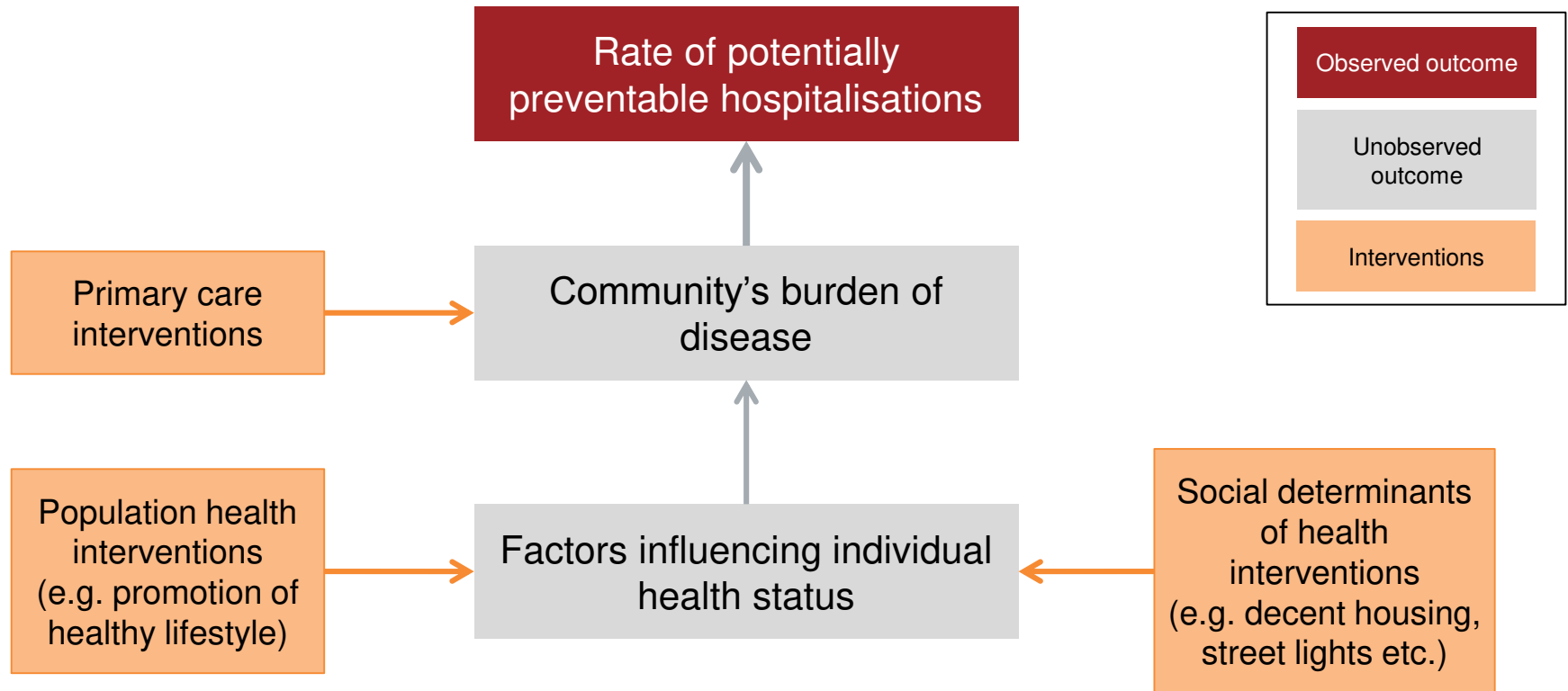
Queensland

Priority places
by number of diseases:



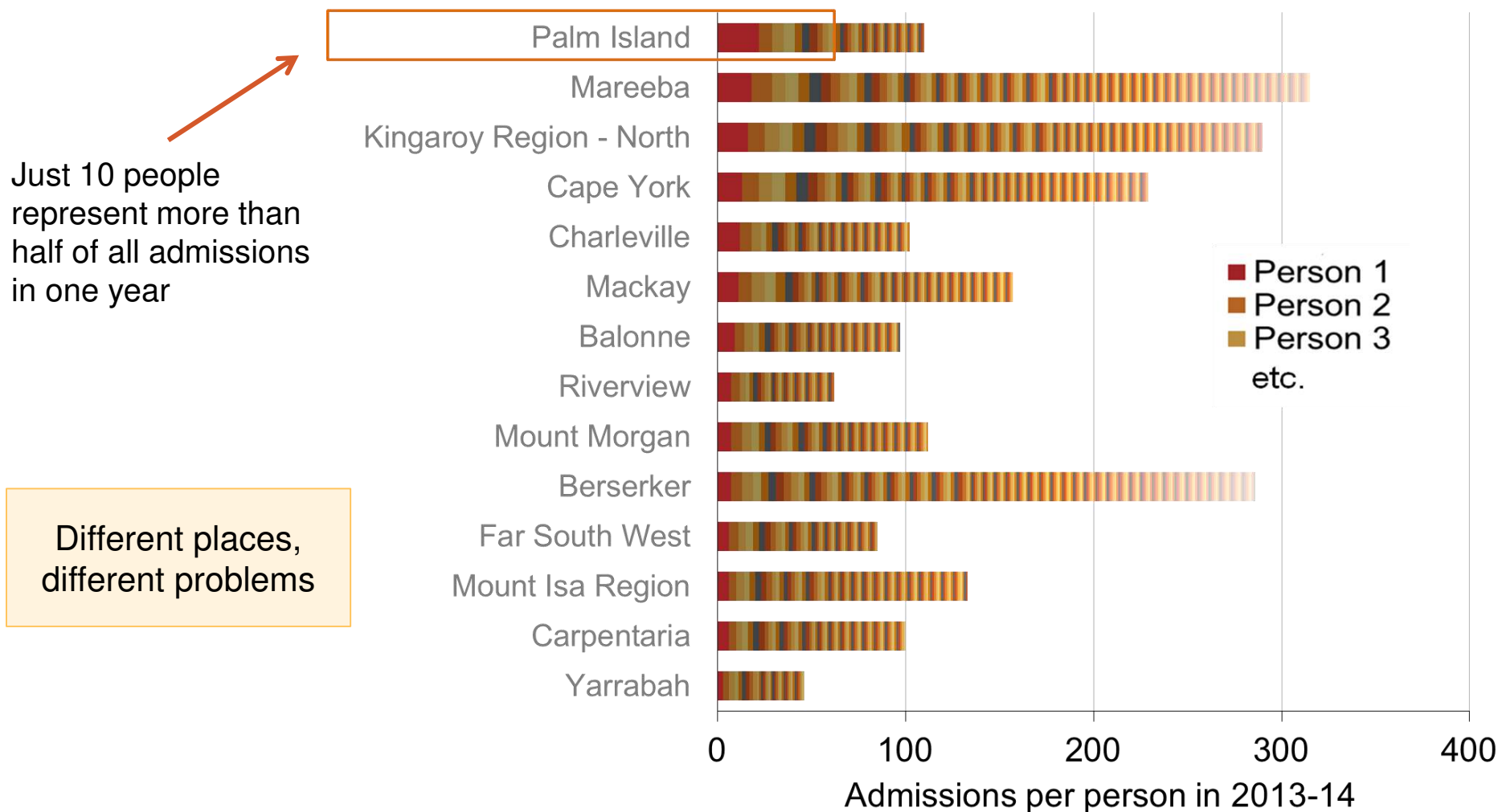
These are the places where health inequalities are already entrenched and are most likely to endure (without intervention)

High rates are an outcome of many factors and these will be different in each place



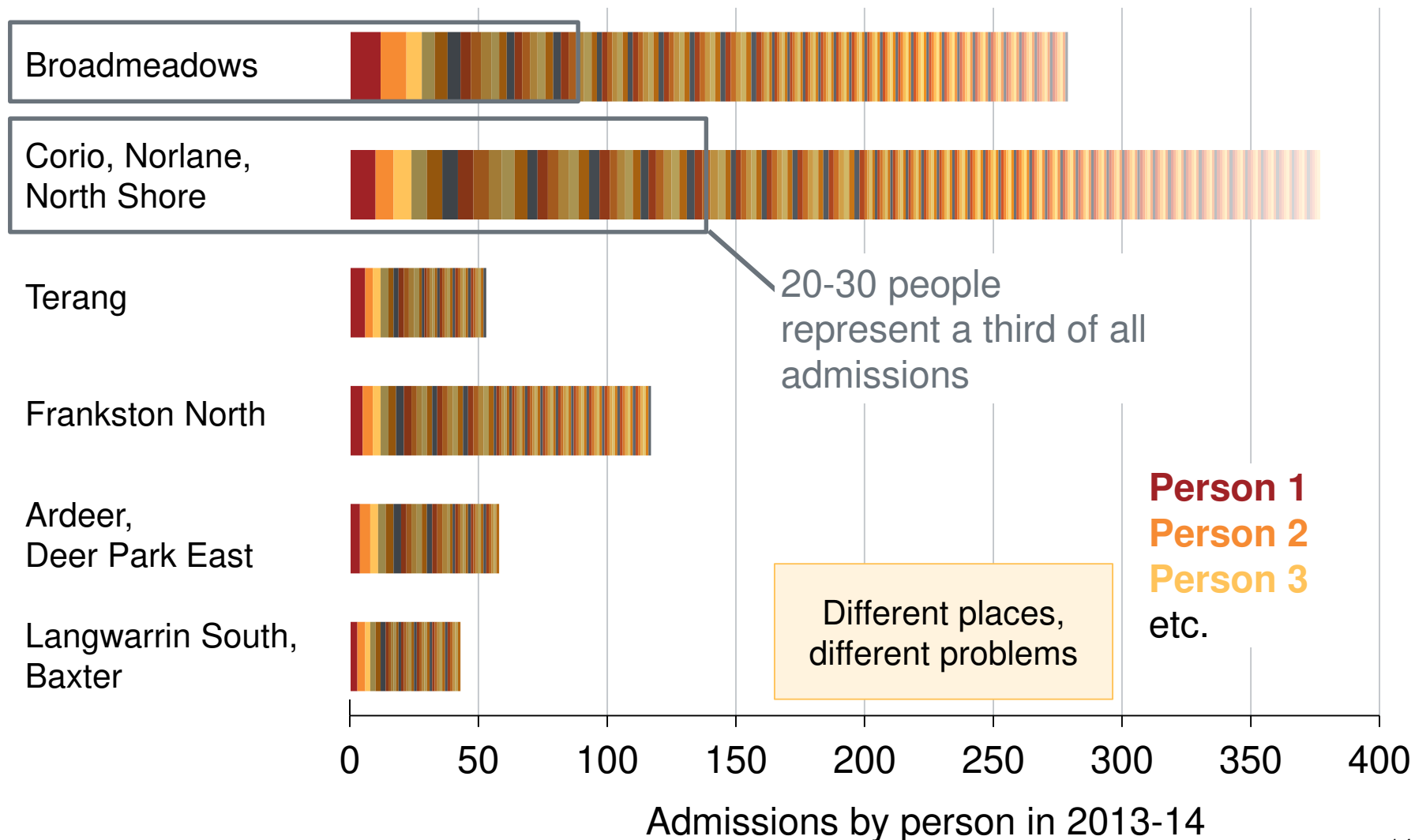
Reducing health inequalities in priority places will require local, tailored responses (Queensland)

For example, tackling readmissions will be part of the solution in some priority places

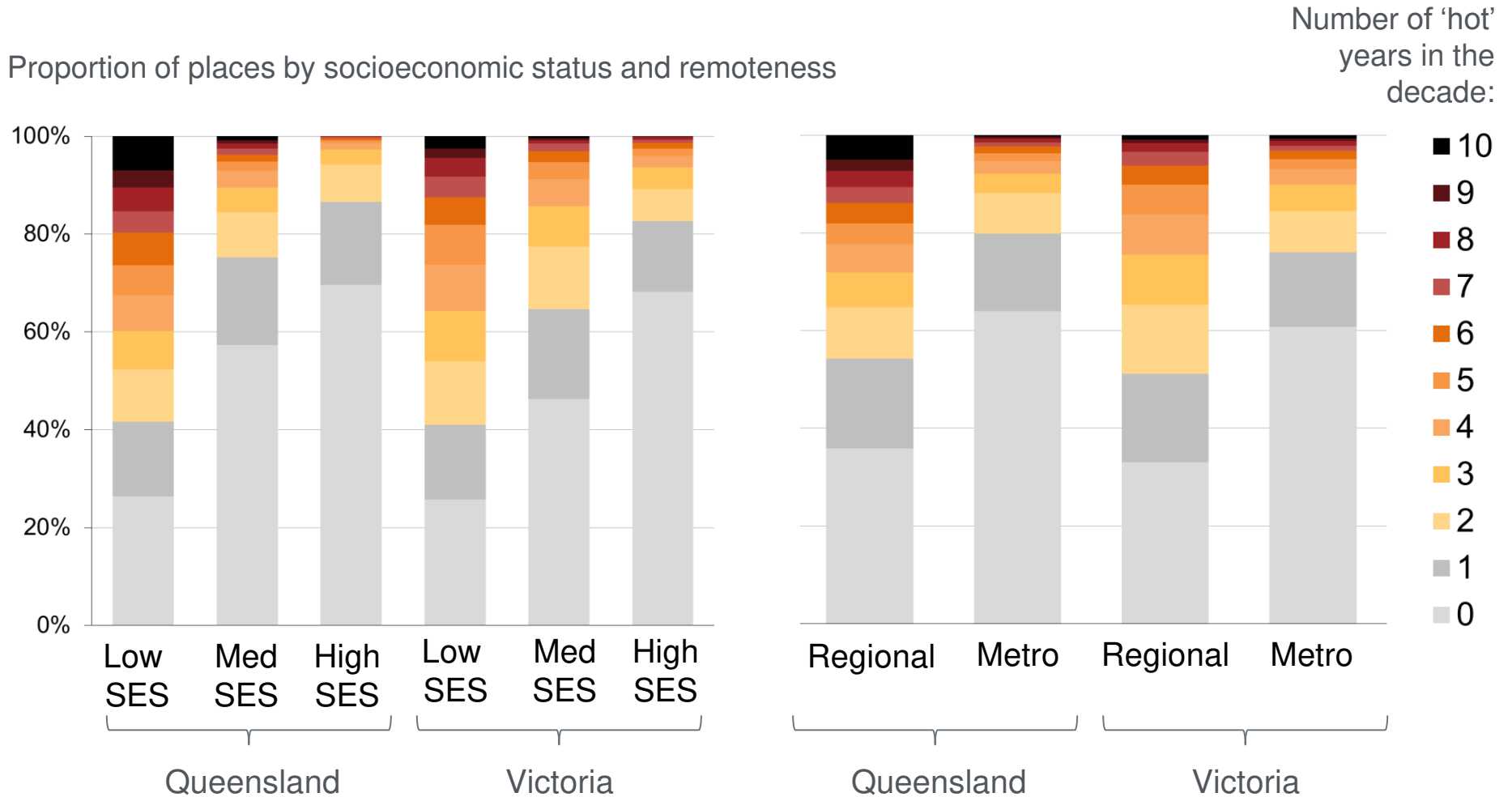


Tackling readmissions will be part of the solution in some priority places (Victoria)

Priority places for chronic ACSCs



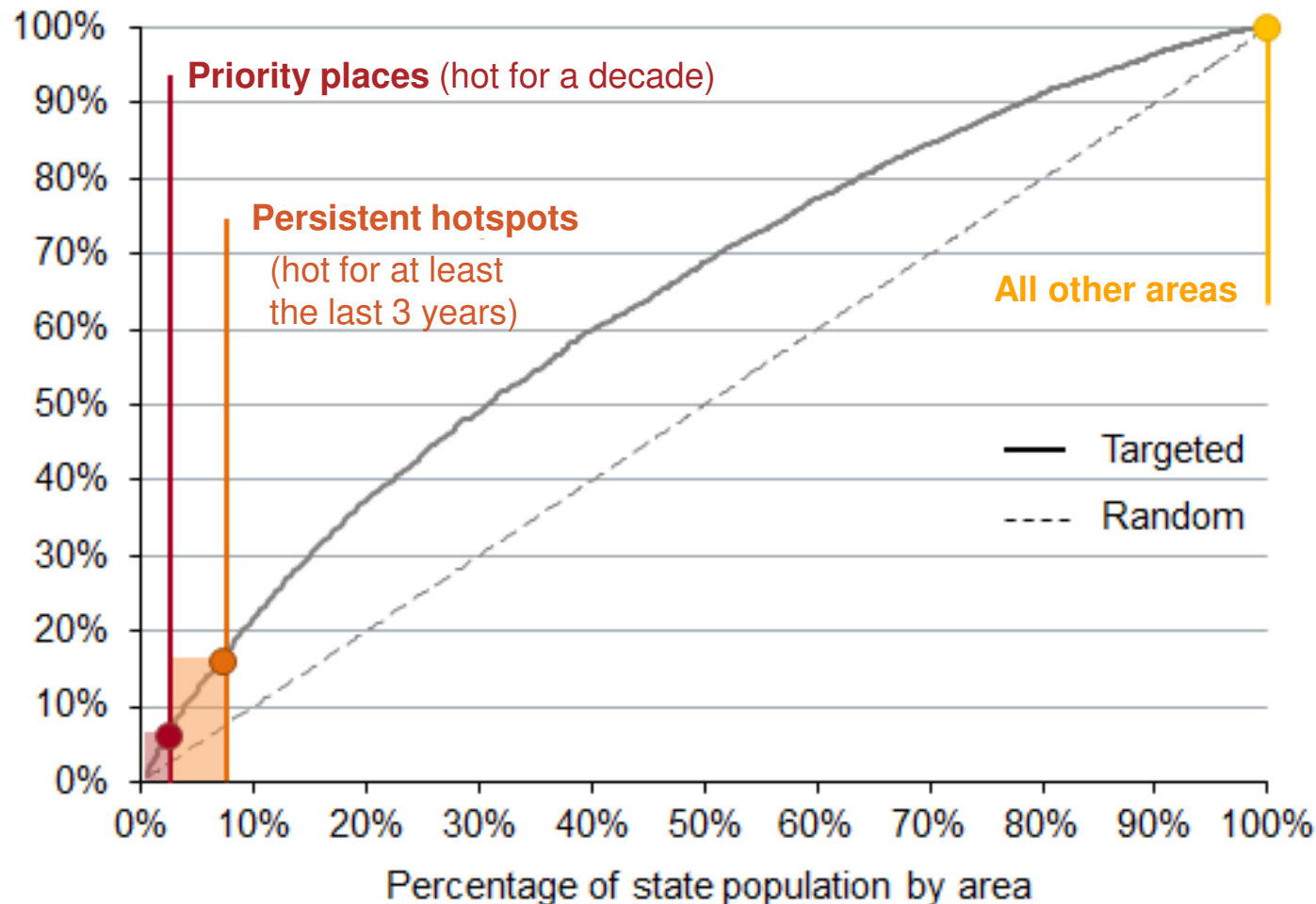
Finding 2: Disadvantaged areas are more likely to experience health inequalities, but most do not



Notes: "Hot" or "high rate" refers to rates at least 50% higher than state average for one or more conditions where hospitalisation is preventable or reducible. Sources: Grattan Institute analysis of state hospital admissions datasets - QHAPDC and VAED

Finding 3: This is just the first step – targeting hotspots alone will **not** substantially reduce hospitalisations

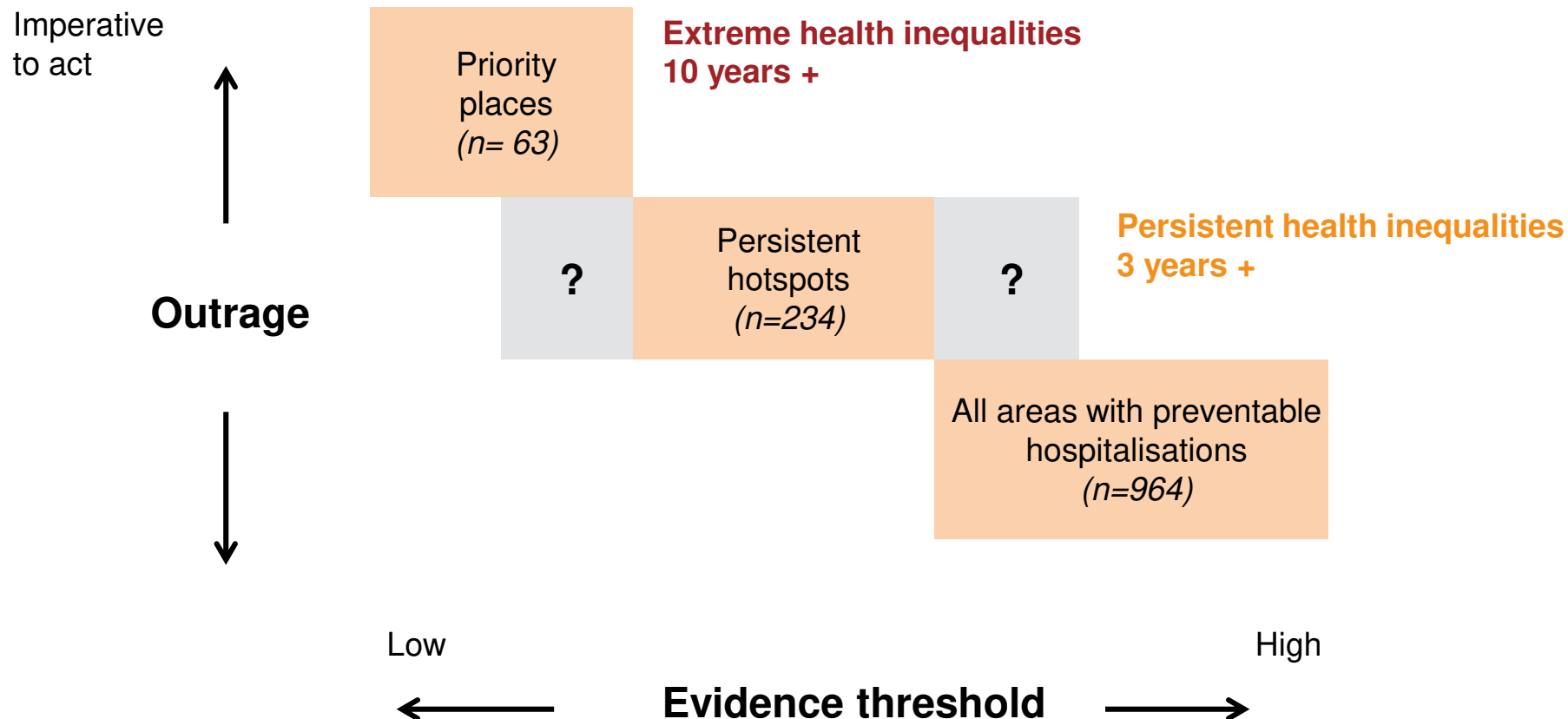
Cumulative percentage of hospitalisations by area for COPD in Queensland



- Likely to be cost-effective for a small part of the problem
- Need to combine with other approaches to really bring down hospitalisations

Given the evidence, what are the options?

Balancing outrage and evidence in determining where and when to intervene



- Does place-based intervention reduce health inequalities?
- How reducible are potentially preventable hospitalisations?
- Cost-effectiveness

What we recommend

Recommendations for Commonwealth government and Primary Health Networks

1. PHN needs assessments must be based on more than one year of data
2. A 3-5 year intervention trial in priority places
 - Funding for relevant PHNs should be adjusted to provide resources for the trial
 - Evidence for what works is limited, need rigorous evaluation – this should be an explicit objective
 - Results will inform activities of all PHNs
3. Strengthen and expand efforts as evidence builds and capability grows
 - Develop the data architecture for more precise needs-based targeting
 - Expand successful, cost-effective interventions within and beyond priority places
 - Adapt approaches to include individually-targeted prevention

Recommendation for AIHW

- Intervention trials need a *multi-year* baseline, we recommend national tracking of potentially preventable hospitalisations *at the small area level (SA2) and over time*

Possible state action

- Local health districts to work with PHNs / local communities in identifying causes and developing cost-effective options
- State health departments should be involved in evaluating initiatives

Implications

1. Watch out for your ingoing assumptions
2. Regression to the mean is everywhere!
3. Different places have different issues
4. Addressing significant disadvantage is not the same as fixing the problem
5. Beware of assuming identifying a problem means you know how to fix it – the evidence base of what works can be weak