



Minding the Ethnic Heat-Vulnerability Gap

Identifying Heat Risks in the Ethnic Elderly

The Problem

Older people particularly over 75 years disproportionately experience illness and death from heatwaves.

Examples of Heat Risks that make the Elderly Vulnerable

| Urban Environment Heat Risks | Inherent Risks |
|------------------------------|----------------------------------|
| Urban Heat Island | Age, Frailty |
| Urban Density | Medical/Cognitive Illness |
| Amount Green Space & Water | Lower Socioeconomic Status |
| Thermal Properties of Home | Self perception of Vulnerability |

Don't Trip Over the Gap!

- Ethnic groups are more vulnerable to death and illness, an identified research gap.
- Most research has been done in US cities where heat vulnerability modelling correlates ethnicity with poverty and less green space.
- In Australia, CRC modelling shows ethnicity, age, living alone and aged care facilities are correlated within city suburbs.

Australia: The Problem with Population Data

1. Studies show cultural heat vulnerabilities across different ethnic groups with no discernable pattern explored between groups.
2. CRC population vulnerability modelling and studies to prioritise green infrastructure assume ethnicity is a sound indicator of heat risk, effectively targeting vulnerable people and places for intervention.
3. The *'CALD' definition of ethnicity biases research towards new migrants and lower socio-economic groups, and is very narrow in definition. It excludes Australian born people of migrants.

*Culturally And Linguistically Different

The Melbourne Jewish Elderly as a Case Study

- Elderly migrants in established communities have been identified as vulnerable in Australia.
- CRC vulnerability modelling (Fig.1) shows 'high risk' suburbs where high proportions of Jewish people live.....but the modelling may have missed some vulnerable groups (Table 1.).

Figure 1. Heat-Related Vulnerability Index – South-East Melbourne, Australia (Loughnan et al. 2013a)

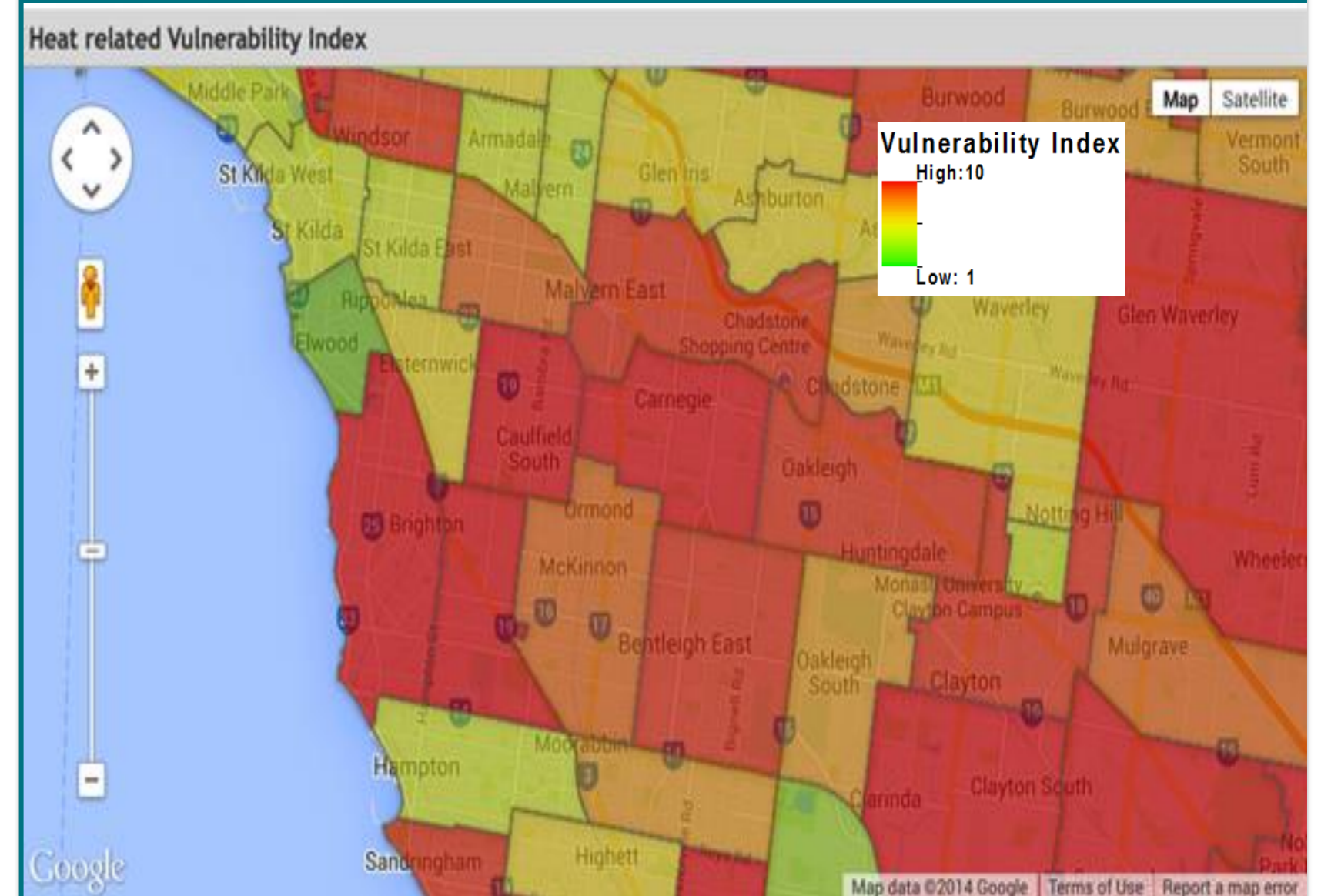


Table 1. Heat Vulnerability Risk in Suburbs of where the Melbourne Jewish Community Resides

| Suburb | Proportion of Jewish population in suburb from atten. 2011 Census data (Markus, 2014) | Vulnerability Classification (Loughnan et al., 2013a) | Potential at Risk Elderly Ethnic Groups (Jewish Care Victoria, C-Care pers. com) |
|-----------------------|---|---|--|
| Caulfield North | 51.6% | Very High Risk (Decile value (DV) 10) | |
| Caulfield South | 44.4% | Very High Risk (DV=10) | |
| Caulfield | 52.4% | Very High Risk (DV= 10) | |
| St Kilda East | 32.1% | Slightly above Medium Risk (DV=6) | Ultra-Orthodox Chabad Community |
| Elsternwick/Ripponlea | 21% | Medium Risk (DV=5) | Ultra-Orthodox Adass Community |
| South Melbourne | Not measured | Slightly above Medium Risk (DV=6) | 200 Elderly Former Soviet Union Jews in housing development high-rise. |

Potential Lowering of Local Biophysical Thermal Risk as Longer-Term Adaptive Strategy (e.g. WSUD)

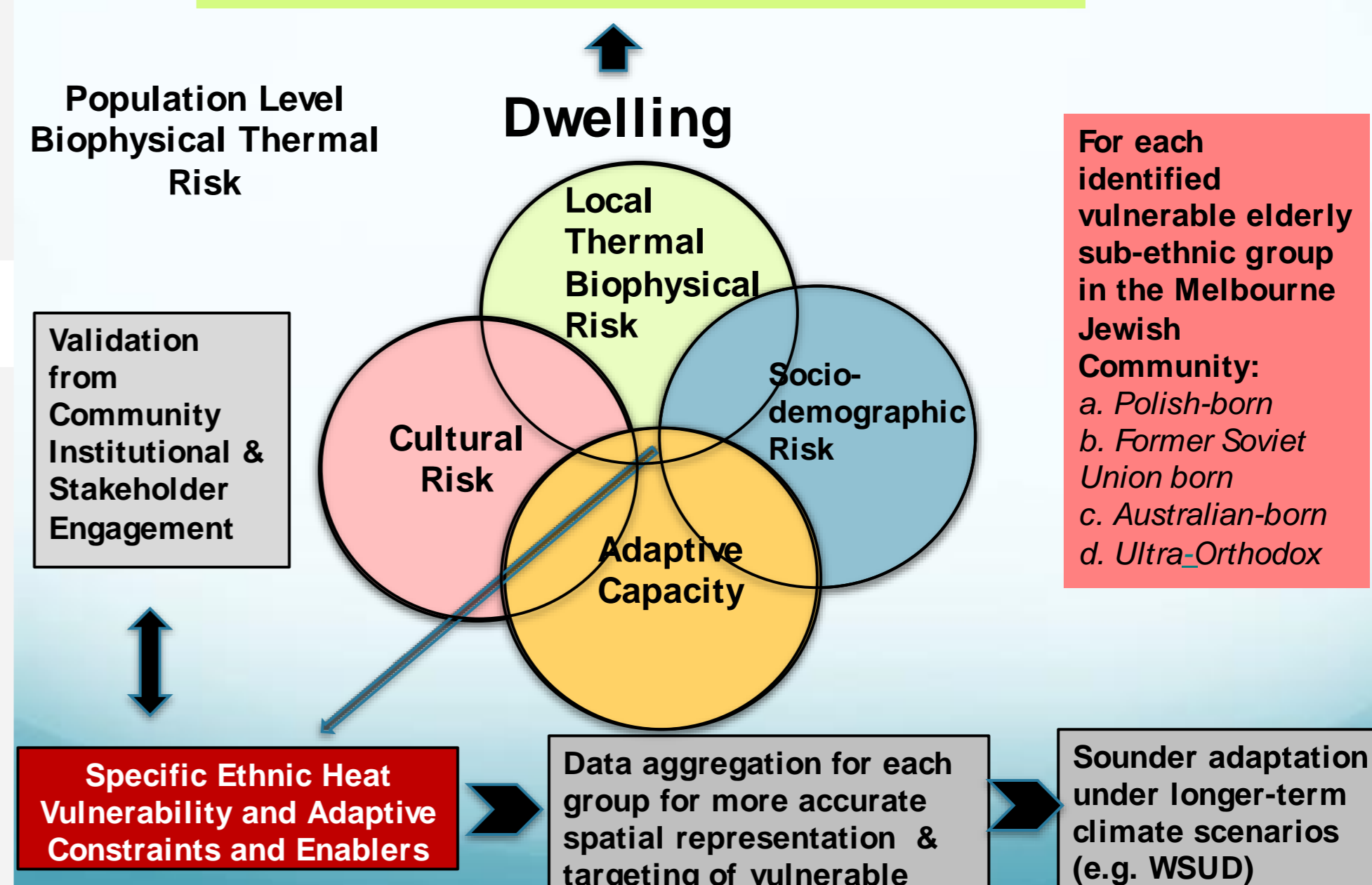


Fig 1. Approach to Quantify Sub-Population Ethnic Heat Vulnerability and Adaptation Barriers in the Melbourne Jewish Elderly

Partnering with NGO's to answer

"How do the particular vulnerabilities associated with heatwaves impact on elderly Jewish Australians and how are these vulnerabilities heightened?"

1. "What are the thermal biophysical factors that increase heat health vulnerability to the Melbourne Jewish Elderly at the dwelling level?"
2. "What socio-demographic factors are specific to the Melbourne Jewish Elderly and how do these factors potentially increase risk to heatwaves, and who is most at risk?"
3. "Do culture, customs, language, religious practices, pre-immigration experience and time of arrival in Australia increase or decrease heat health vulnerability and risk perception and how?"