



# Extreme heat and climate change: Adaptation in culturally and linguistically diverse (CALD) communities

Final Report

Alana Hansen, Peng Bi, Arthur Saniotis, Monika Nitschke, Jill Benson, Yan Tan, Val Smyth, Leigh Wilson and Gil-Soo Han



## Extreme heat and climate change: Adaptation in culturally and linguistically diverse (CALD) communities

The University of Adelaide

## **AUTHORS**

Alana Hansen (The University of Adelaide) Peng Bi (The University of Adelaide) Arthur Saniotis (The University of Adelaide) Monika Nitschke (South Australian Department of Health) Jill Benson AM (The University of Adelaide) Yan Tan (The University of Adelaide) Val Smyth (South Australian Department of Health) Leigh Wilson (University of Sydney) Gil-Soo Han (Monash University)





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## TABLE OF CONTENTS

ABST	RACT	1
EXEC	UTIVE SUMMARY	2
1.	OBJECTIVES OF THE RESEARCH	4
1.1	Introduction	4
1.1.1	Ethnicity and vulnerability to heat	4
1.1.2	Multicultural Australia	5
1.1.3	Rationale for the study	6
1.2	Objectives	7
2.	RESEARCH ACTIVITIES AND METHODS	8
2.1	End-user Engagement Plan	8
2.2	Ethics approval	8
2.3	Literature review	8
2.4	Research Reference Group	8
2.5	Qualitative data collection	9
2.5.1	Recruitment	9
2.5.2	Interviews and focus groups	10
2.6	Data analysis	11
2.7	Extreme Heat and CALD Communities Workshop	12
2.7.1	Aims	12
2.7.2	Organisation	12
2.7.3	On the day	12
3.	RESULTS AND OUTPUTS	13
3.1	Respondents	13
3.2	Findings	13
3.2.1	Vulnerability factors	13
3.2.2	Adaptation and behaviours	32
3.2.3	Climate change issues	36
3.2.4	What needs to be done?	39
3.3	Extreme Heat and CALD Communities Workshop	46
3.3.1	Attendees' areas of interest	47
3.3.2	Group sessions	47
3.3.3	Recommendations from the Workshop	49
3.3.4	Workshop reports	50
3.3.5	Feedback	51
4.	DISCUSSION	52

4.1	Cultural, socioeconomic, linguistic and environmental factors		
4.2	City-specific issues	55	
4.3	Recommendations	56	
4.4	Limitations	57	
4.5	Conclusion	58	
REFERE	ENCES	61	
APPENI	DIX 1	69	
APPENI	DIX 2	71	
APPENI	DIX 3	72	
APPENI	DIX 4	97	
APPENI	APPENDIX 5		

## LIST OF FIGURES

Figure 1	Ashfield in Sydney's inner Western suburbs	. 27
Figure 2	Woman wearing burqini swimwear	36
Figure 3	Workshop program	.46
Figure 4	Extreme Heat and CALD Communities Workshop	. 47
Figure 5	Interests indicated by 30 of the Workshop attendees	.47
Figure 6	First task for group discussion at the Workshop	48
Figure 7	Second task for Tables 2 and 3	.48
Figure 8	Second task for Tables 4 and 5	49
Figure 9	Second task for Tables 6 and 7	.49

## LIST OF TABLES

Table 1	Details of the study locations	.9
Table 2	Numbers of respondents in each city and affiliations	13
Table 3	Vulnerability factors 1-4 (Adelaide)	.18
Table 4	Vulnerability factors 5-8 (Adelaide)	.19
Table 5	Vulnerability factors 9-13 (Adelaide)	.21
Table 6	Key issues contributing to vulnerability in new arrivals and older migrants	23
Table 7	Vulnerability factors 1-4 (Melbourne)	.26
Table 8	Vulnerability factors 5-7 (Melbourne)	.26
Table 9	Vulnerability factors 1-3 (Sydney)	30
Table 10	Vulnerability factors 4-6 (Sydney)	.31
Table 11	Summary of barriers and enablers	.45

## ABSTRACT

*Background*: Several overseas studies have identified that people in ethnic minority groups are at greater risk during heatwaves. However, there is a paucity of information on this issue in Australia. With a highly multicultural society, it is important that vulnerable subpopulations and minority groups are recognised and considered in climate change discussions and the formulation of adaptation strategies.

*Objective:* To identify cultural, socioeconomic and linguistic factors affecting vulnerability to heat and climate change in culturally and linguistically diverse (CALD) communities, to identify vulnerable subgroups, and where appropriate to recommend ways to increase adaptive capacity.

*Methods*: Interviews and focus groups were conducted with stakeholders from the government sector, non-government organisations, the health sector and CALD communities in Adelaide, Melbourne and Sydney. Data were analysed using thematic analysis and framework analysis. A workshop was also held to engage with and seek recommendations from stakeholders.

*Results:* For socio-cultural reasons subgroups within CALD communities do not cope well with Australia's extreme heat which can differ from heat experienced elsewhere. Those at risk include older migrants and new arrivals, people in new and emerging communities, and low income migrants who lack English proficiency skills. Socioeconomic disadvantage, linguistic barriers, poor quality housing and cultural issues contribute to vulnerability. At present the needs of many are unmet in terms of knowledge about harm minimisation strategies during extreme heat. To facilitate climate change adaptation for the broader population and minimise potential heathealth disparities, there needs to be equity in access to resources that can aid in building resilience. This will require a suite of communication tools to cater for Australia's growing number of residents with diverse cultural, linguistic and religious backgrounds. The social capital existing within networks and the high adaptive capacity of migrants are enablers in the adaptation process.

*Conclusion:* Providing information to new migrants and refugees about climate change risks in Australia and ways to sustain health during extreme heat will assist in overcoming barriers in vulnerable sectors of communities. Promoting social connectedness will also facilitate a more inclusive approach to climate change adaptation. An outcome from this translational research has been an increase in awareness amongst policymakers of the need for broader communication of heathealth messages.

## EXECUTIVE SUMMARY

High environmental temperatures can be harmful to human health and may lead to serious and potentially life-threatening conditions. With compelling evidence that global temperatures will continue to rise and heat extremes will become more frequent, the need for the identification of at risk populations and appropriate preventive strategies intensifies.

Migration has shaped Australia's multicultural society to the extent that currently more than one quarter of the nation's population was born overseas. Moreover, migrant numbers will increase in the future and first generation migrants will become part of Australia's ageing population. Studies in the United States point to a disparity in the risk of heat-related illness in people from ethnic minorities. However, despite Australia's harsh summers, no Australian study has specifically investigated vulnerability to heat in overseas-born people. The aim of this study was therefore to investigate risk factors in people from culturally and linguistically diverse (CALD) backgrounds during extreme heat and the implications for longer term climate change adaptation.

Interviews and focus groups were conducted with stakeholders involved with, and part of, a range of multicultural communities. Key informants and service providers from state and local government, non-government organisations, the health sector and community groups were included. In total, there were 36 respondents (21 from Adelaide, 6 from Melbourne and 9 from Sydney). Interviews were recorded and transcribed, and standard qualitative data analysis techniques were utilised.

Our findings showed that people who settle in Australia from overseas have a high adaptive capacity. Nevertheless, a number of inter-related factors were identified that may place some people in the communities at increased risk during extreme heat. These relate to socioeconomic disadvantage; cultural factors; health issues; poor housing conditions and limited access to air conditioning; linguistic and social isolation; and language barriers and low literacy rates limiting access to health warnings. People in CALD communities who are reportedly at risk during extreme heat tend to be older people, new arrivals and people in new and emerging communities. Risk in the vulnerable can be compounded by language barriers, cultural factors and lack of acclimatisation to local environmental conditions. Unfamiliarity with the 'different' type of dry heat was a factor in Adelaide and Melbourne, whereas in Sydney gambling can be a problem for people seeking a cooler environment in the many sporting and service clubs.

Older, first generation migrants are vulnerable for reasons applicable to the aged in general, including declining physical and cognitive health, overdressing, lack of thirst and high risk of dehydration, limited transport, and importantly, the fear of high power bills manifesting in reluctance to use air conditioning. Additionally, cultural factors can add to vulnerability, particularly for those with poor English proficiency or who revert to their primary language and culture with age. Linguistic and social isolation may result, limiting access to heat-health warnings and prevention messages disseminated in English.

People who have recently settled in Australia are also reportedly at risk. Being unacclimatised to local environmental conditions and lacking awareness of adaptive behaviours can lead to increased vulnerability, particularly for the old and the very young. Members of new and emerging communities have often arrived from refugee camps and can have underlying health issues, poor educational attainment and poor proficiency in English. Socioeconomic disadvantage and poor quality rental housing can result in limited access to air conditioning, and an inability to afford the associated high running costs. Wearing garments more suited to cooler weather and not being used to drinking water can add to vulnerability. Some are reluctant to spend time in publicly cooled spaces such as shopping centres; and beaches and swimming pools can pose a safety risk for those unable to swim. Additionally, new migrants may be unaware of and unprepared for the extreme conditions of a typical Australian summer. The uniquely dry searing heat reportedly causes discomfort, anguish, sunburn and the potential for severe health impacts.

This study has recognised the unmet needs of migrants in terms of information about extreme heat and ways to minimise the risk of harm during heatwaves. Respondents recommended that this information be delivered in a number of culturally appropriate ways to people of non-English speaking backgrounds. Firstly, newly arrived migrants should be supplied with information about extreme heat as part of their orientation information. Secondly, messages during heat (and other) emergencies should be accessible to people of non-English speaking backgrounds. Thirdly, it was recommended information sessions about climate risks associated with climate change and extreme heat be organised for people in CALD communities. It was suggested a range of approaches be considered to facilitate information transfer including bi-cultural community engagement, translated fact sheets, multi-lingual media broadcasts, or messages via community leaders or schoolchildren. Funding limitations are a barrier for organisations with strategies in place.

Adaptation to extreme heat and more frequent heatwaves associated with climate change will require approaches that are inclusive of people with CALD backgrounds. Breaking down socio-cultural and linguistic barriers will assist in reducing inequalities and improving access to information. Additionally, encouraging a more socially inclusive and accepting society will bolster adaptive capacity in the broader Australian population.

In conclusion, it has been identified that barriers exist which can compound heatrelated risks in vulnerable people within CALD communities. These include social, cultural and economic factors, lack of acclimatisation, and heat-health information not being effectively communicated in suitable formats. Enablers are the high adaptive capacity and connectedness within migrant communities. With equal opportunity and access to risk communication and emergency information, potential disparities in vulnerability to extreme heat and climate change will be minimised. This will require a suite of socially inclusive communication tools to cater for the growing number of residents with diverse cultural, linguistic and religious backgrounds.

This study has policy implications and has opened the dialogue amongst health and emergency services policymakers about the need to broaden the scope of heat-health promotion based on extensive community engagement and consultation with people in CALD communities. More participatory action research on climate change adaptation within minority groups is required to build upon these findings.

## 1. OBJECTIVES OF THE RESEARCH

## 1.1 Introduction

High environmental temperatures can be harmful to human health by exacerbating existing health conditions or triggering acute and potentially life-threatening heat-related illnesses (Bi *et al.* 2011). For individuals at risk, these adverse health effects can often be prevented by simple adaptive behaviours. Population composition and social characteristics are important in determining the vulnerability of local populations to environmental stressors but can be neglected factors in the process of policy-making and service guideline developments (Yardley *et al.* 2011). With climate change scenarios predicting greater frequency and intensity of heatwaves, the need for identification of at risk sub-groups and evidence-based adaptation strategies to build resilience, intensifies.

#### 1.1.1 Ethnicity and vulnerability to heat

Some international studies have identified increased vulnerability in certain non-White ethnic groups when exposed to extreme heat (Basu 2009; O'Neill *et al.* 2003; Yardley *et al.* 2011). Most evidence stems from heatwave studies in the United States which have demonstrated high heat-susceptibility in African American people. The mortality rate of African American residents during a Los Angeles heatwave was nearly double that of the city's average (Shonkoff *et al.* 2009), with similar findings from heatwave studies in other U.S. cities. However, for people of Hispanic backgrounds this increased vulnerability has not been consistently demonstrated (Basu *et al.* 2008; Henschel *et al.* 1969; Klinenberg 1999; Whitman *et al.* 1997).

Although the underlying reasons for the disparities in vulnerability are not clear, it is known that socioeconomic status (SES) and ethnicity are contributing factors (Matthies et al. 2008). The former is likely to be the more influential (Mechanic et al. 2007) as low-income immigrants have been shown to be particularly vulnerable to extreme heat and climate change (Cheng et al. 2010). The social determinants of health are main contributors to health disparities as minority ethnic groups tend to be less educated, are more likely to be socioeconomically disadvantaged, and more likely to work in hazardous jobs (Betancourt et al. 2003). In a 1980 heatwave in St Louis and Kansas City, higher rates of heat stroke were observed in non-Whites, but the effect of race could not be dissociated from the potentially confounding effect of low SES (Jones et al. 1982). Living in low socioeconomic areas has been shown to modify risk in U.S., European and Australian studies (Jones et al. 1982; Kosatsky 2005; Zhang et al. 2012) whilst other studies have shown no modifying effect of SES on temperature-mortality associations (Yu et al. 2010). Studies in the U.S. have shown that ethnic minorities may be more likely to live in environmentally hazardous areas (Betancourt et al. 2003) and warmer neighbourhoods, but can lack the social and material resources to cope with high temperatures (Luber et al. 2008). Overcrowding, poor housing conditions, and poor general health, as well as a lower overall SES, are likely to be contributing factors (Henschel et al. 1969).

Having a working air conditioner is a major protective factor during times of extreme heat (Naughton *et al.* 2002; O'Neill *et al.* 2005) and a previous study showed the prevalence of central air conditioning among African American households to be less than half that of White households (O'Neill *et al.* 2005). Additionally, high numbers of heat distress calls during hot seasons in the U.S. have been reported in low income Hispanic neighbourhoods where there was a high proportion of linguistically isolated residents and few homes with centralised air conditioning (Uejio *et al.* 2011). The reported differences in the incidence of heat-related deaths by race and ethnicity may

therefore reflect lack of access to air-conditioning due to economic considerations (Greenberg *et al.* 1983) as the rising cost of electricity required to run air conditioners can make them unaffordable for those in lower SES brackets (Yardley *et al.* 2011).

As identified above, studies in the U.S. commonly use the terms "Black" or "African American" and "White" to describe race, and "Hispanic/Latino" to describe persons of ethnic background. "Migrant" can refer to people from Mexico, some of whom are illegal migrants who enter the country via the U.S.-Mexico border. In terms of heat risks for migrants, many 'undocumented border crossers' reportedly die due to heat exposure when crossing the Arizona desert (Ruttan *et al.* 2012).

#### 1.1.2 Multicultural Australia

In a warming climate these issues have considerable public health implications, particularly for countries such as Australia with its highly multicultural society and long history of immigration. However, defining multiculturalism, ethnicity and race in Australia is complex when considering notions of whiteness and migrancy (Schech *et al.* 2001). Hence, there can be a disconnect between the international literature on ethnicity and heat-related risk, and the Australian context.

Although the terms "ethnicity" and "race" can often be used interchangeably, the former generally relates to cultural background and the latter to physical appearance. 'Ethnicity' is referred to by the Australian Standard Classification of Cultural and Ethnic Groups as "shared identity or similarity of a group of people on the basis of one or more factors" and relates to a common ancestry, identifiable culture, or people "who are migrants or descendants of migrants and whose first language is not English" (Australian Bureau of Statistics 2011a). As the focus of this study is mainly overseas-born people, these definitions of ethnicity will be assumed.

In terms of race, a question in the Australian Bureau of Statistics census which once used the words "racial origin" has been replaced with "Is the person of Aboriginal or Torres Strait Islander origin?" (Australian Bureau of Statistics 2010). The investigation of vulnerability to heat and climate change in terms of race in the Australian context is outside the scope of the present research.

#### 1.1.2.1 Migration

As at 2011, the proportion of Australia's estimated resident population who were born overseas was 27%, compared with 23.1% ten years earlier (Australian Bureau of Statistics 2012a). In recent years, migration has been the greatest contributor to Australia's' population growth, outweighing natural increase (Australian Bureau of Statistics 2012b).

In the early post-war years the majority of migrants were from the British Isles and Europe (Garnaut *et al.* 2003) but the abolition of the White Australia Policy saw the intake of migrants from other, particularly South-East Asian countries in the 1960s and 1970s. By the 1990s a higher proportion of migrant arrivals were from Eastern Europe, the former Soviet Union and the Middle East (Garnaut *et al.* 2003). In the first decade of the twenty first century, there was a high intake from Nepal, Sudan, India, Bangladesh, Zimbabwe and Pakistan (Australian Bureau of Statistics 2011b). Most (76%) of recent migrants originate from "other than main English-speaking countries" (Australian Bureau of Statistics 2012c). According to the 2011 Census, 49% of longer-standing migrants and 67% of recent arrivals reported speaking a language other than English at home, with 3.1% of recent arrivals speaking no English at all (Australian Bureau of Statistics 2012b).

The Humanitarian Program of Australia's permanent immigration program provides options for people who are refugees from their home countries due to armed conflict, human rights abuses and persecution (Australian Bureau of Statistics 2012c). The Humanitarian Program has seen the arrival of many people from the Middle East and African countries. A 2003 report stated that the formal refugee programme was set at about 15% of the Government's average target for total immigration (Garnaut *et al.* 2003). Over the past 35 years people seeking protection in Australia has increased from approximately 2,000 in the period 1976 to 1981, to almost 12,200 in the period 1999 to 2001 (Australian Bureau of Statistics 2012c).

Migrants generally have incomes commencing below those of native Australians (Garnaut *et al.* 2003). Unemployment rates for recent migrants are higher for those from non-English speaking countries (10%) compared to those from English speaking countries (5%) (Australian Bureau of Statistics 2012c). Unemployment slows the acquisition and improvement of English language skills and socialisation into the community (Garnaut *et al.* 2003) and 33% of recent migrants have reported language being a barrier when trying to gain employment (Australian Bureau of Statistics 2012c).

Immigrants to Australia who are not refugees need to meet certain health requirements for selection and this contributes to the 'healthy migrant effect' phenomenon (Australian Institute of Health and Welfare 2010). Hence, migrants can have better health than the Australian-born population, although this advantage tends to decline with length of residence (Anikeeva *et al.* 2010). However, this theory is unlikely to be true for those who have been forced to flee their homeland who arrive via the Humanitarian program (Renzaho *et al.* 2012), as refugees and asylum seekers have often suffered experiences which impact on their physical and mental health, and nutritional state (Burnett *et al.* 2001).

#### 1.1.3 Rationale for the study

Despite Australia's harsh summers, there is a paucity of information regarding adaptation to heat in CALD communities. However, the Heatwave Plan for Victoria identifies non-English speaking people as being amongst the most susceptible to heat-related illness (Department of Health 2009). Figures from an Adelaide study show that during an extreme and unprecedented heatwave in 2009, 37% of patients hospitalised with direct heat-related illnesses were non-Australian born (Zhang *et al.* 2012) although only 25.1% of Adelaide's population was born overseas (Australian Bureau of Statistics 2011c). This indicates that a disproportionate number of people affected by the heat were not born in Australia. The reasons for this remain to be explored. It is possible as well, that this could be an under-representation of the true effect as overseas-born people can be reluctant to seek health care. Barriers to accessing health care have been reported in a study of newly settled refugees in Sydney, and these include "language barriers, financial handicap, lack of health information, not knowing where to seek help, and poor understanding of how to access health services" (Sheikh-Mohammed *et al.* 2006).

Migrants are often under-represented in health research for a number of methodological reasons, and those from non-English speaking backgrounds are not adequately recognised in terms of health promotion programs (Renzaho *et al.* 2012). This is the case for heat-health research which has not to date focussed on Australia's overseas-born population. Consequently, it is unknown how persons new to Australia cope with periods of extreme heat or if there is an awareness of the potential health risks. This highlights a gap in knowledge which needs to be addressed in the face of projected changes in climate and demographic profile over the coming decades.

Patrick et al (2011) state that climate change "exacerbates existing health inequities, impacts on the social determinants of health and disproportionately affects vulnerable populations" (Patrick *et al.* 2011). There is therefore a clear need for Australian research into socio-cultural barriers to extreme heat and climate change adaptation in CALD communities. This may be useful in order to develop strategies to ensure equity in access to preventive information and assist population adaptation to a warmer climate.

#### 1.2 Objectives

The objectives of this research were:

- (a) To identify cultural, socioeconomic and linguistic factors affecting vulnerability to heat and climate change in CALD communities in three Australian cities
- (b) To identify vulnerable subgroups
- (c) To make recommendations on ways to increase adaptive capacity in CALD populations

The research questions to be addressed were:

- What are the experiences in various CALD communities of extreme heat in Australia?
- What adaptive strategies are undertaken by migrants and refugees during extreme heat?
- Which subgroups in CALD communities are most vulnerable to heat and climate change?
- Are there cultural-specific social, economic, institutional, linguistic, structural, physical or spatial barriers to adaptation?
- What are the perceptions, concerns and understanding of climate change in CALD communities?
- What can government and service providers do, from a policy and guideline level, to limit inequities in the uptake of adaptation strategies and ensure that CALD individuals will not be disproportionally affected by climate change?

## 2. RESEARCH ACTIVITIES AND METHODS

The research proceeded in a number of stages, namely: the formulating of an NCCARF End-User Engagement Plan, ethics approval, literature review, the establishment of a Research Reference Group, qualitative data collection, data analyses and finally, the Extreme Heat and CALD Communities Workshop.

## 2.1 End-user Engagement Plan

In accordance with requirements, an NCCARF research End-user Engagement and Communication Plan was formulated, identifying the end-users as policy makers, service providers to migrants and refugees, and persons in CALD communities. It outlined that end-user engagement would involve meetings, regular newsletters, and the Extreme Heat and CALD Communities Workshop to present study findings and invite recommendations from stakeholders.

## 2.2 Ethics approval

The lead organisation for this project was the University of Adelaide. Partner organisations were Monash University, the University of Sydney and the South Australian Department of Health. Ethics applications were submitted to the relevant Human Research Ethics Committees via a National Ethics Application Form, a webbased tool aimed to simplify the submission of proposals to multi-centre human research ethics committees. Ethics approval was subsequently received from all centres except one which did not deem approval necessary from their perspective as a partner organisation.

### 2.3 Literature review

A literature review was conducted to investigate the underpinning factors which may explain ethnicity as a risk factor for susceptibility to extreme heat; and to put this in the context of Australia's warming climate and increasingly multicultural society. Bibliographic databases including PubMed, ScienceDirect, Scopus and Google Scholar were used to search the peer-reviewed scientific literature. Keywords included at least one of: heat, heatwave, extreme temperatures, extreme weather, hot weather, high temperature, climate change, heat adaptation, heat tolerance, heat stress, heat stroke, heat exhaustion, heat injury 'AND' at least one of: migrant, ethnic, ethnicity, CALD, race, racial, culture, black, minority, cross cultural, ethnic groups, migrant groups, refugee. The terms: death, mortality, morbidity, hospital, adverse health outcomes, determinants were occasionally used. The retained publications included epidemiological studies, case studies, and reviews. The search strategy also involved searching grey literature such reports from government departments and non-profit organisations. Reference lists of relevant articles were also perused for potential studies. Articles and reports in languages other than English were excluded.

## 2.4 Research Reference Group

A Research Reference Group was established to provide guidance and advice in the research process. The group was comprised of the Chief Investigator (Professor Peng Bi) and co-investigators (Dr Alana Hansen, Dr Arthur Saniotis, Dr Jill Benson, Dr Yan Tan, Dr Monika Nitschke, Dr Leigh Wilson, Associate Professor Gil-Soo Han, and Ms Val Smyth); and three experienced experts in the field of multicultural health (Ms Christine Andrews, Ms Teresa Burgess and Dr Lillian Mwanri).

An initial scoping meeting was held at the outset and two further meetings were held throughout the study period. On two occasions Dr Leigh Wilson and Associate Professor Gil-Soo Han joined the meetings by telephone link from Sydney and Melbourne respectively; and attended a full-day meeting in person at the University of Adelaide in May 2012.

## 2.5 Qualitative data collection

In order to gain a perspective of heat-related issues affecting migrants in central and eastern Australia, qualitative data were collected at three study sites: Adelaide, Melbourne and Sydney, the capital cities of the states of South Australia, Victoria and New South Wales respectively. Geographic, meteorological and demographic details of the three cities are displayed in Table 1 which shows that compared to Melbourne and Sydney, Adelaide has the smallest population, the warmest summers and the lowest annual rainfall. Melbourne has the highest proportion of overseas-born people in its population and the highest proportion who speak a language other than English at home. The main study area in Sydney was the inner west and western suburbs - a highly multicultural area where 30% of people are from countries where English is not the first language (profile.id 2012).

Details	Adelaide	Melbourne	Sydney
Latitude	34°55' S	37°48' S	33°52' S
Longitude	138°36' E	144°57' E	151°12' E
Calculated average mean maximum temperature for summer (Dec-Feb)	28.6°C	25.3°C	25.6°C
Mean annual rainfall (mm)	546.8	650.0	1213.3
Population (million)	1.2	4.1	4.6
Overseas-born population (% of total)	25.1	48.6	34.4
Speaks a language other than English at home (% of total)	15.9	39.0	31.4

Table1: Details of the study locations

Source: (Australian Bureau of Statistics 2011c, 2011d, 2011e, 2012c; Bureau of Meteorology 2012).

## 2.5.1 Recruitment

Australian society is highly culturally and linguistically diverse and hence engagement with all ethnic sectors was impractical within the limitations of the project. Moreover, stratified sampling based on geographic region, age, or length of stay in Australia was thought to be restrictive. Consideration was therefore given to the most effective means of gaining rich and informative data about people from a broad range of ethnic backgrounds. It was thus decided that the scope of the study could be maximised by recruiting key informants involved with a range of migrant and refugee groups. [It should be noted that although "culturally and linguistically diverse" can have several connotations, this study focussed on members of the population from another, usually non-English speaking country.] Potential respondents were identified from information provided by the Research Reference Group as well as a comprehensive internet search to source stakeholders and organisations from three main sectors:

- (1) State government departments and local councils
- (2) Non-government organisations and service providers
- (3) Migrant and refugee health services

Lists were made of organisations, their telephone numbers and/or email addresses, and where possible the name of a key contact person. Introductory telephone calls were made to the organisations to explain the study and to source interested persons. If requested, the call was followed up with an email and a study Information Sheet (Appendix 1) explaining in more detail the aim of the study, what participation would involve and that confidentiality would be assured. On occasions an email was sent without a prior telephone call. Notes were kept to track the recruitment process for each organisation as at times several attempts were made to establish contact with a key person or a secondary contact. The numerous methodological problems that can be associated with cross-cultural qualitative research including the need for translators, recruitment difficulties, and people's mistrust of authorities (Liamputtong 2010; Renzaho *et al.* 2012; Yelland *et al.* 1995) were largely avoided by employing this recruitment of members of a community group and a family of recently arrived refugees.

Potential respondents were given the option of participating in a focus group (defined as more than one participant being present) or one-to-one interview, at a time and place of their choosing. Those recruited were followed up by email and/or telephone to confirm interview details.

#### 2.5.2 Interviews and focus groups

Data collection was purposely undertaken in the warm months between December 2011 and April 2012. The study was based in Adelaide where interviews and focus groups were conducted between December and March. Participants attending focus groups at the University of Adelaide were offered reimbursement of travel costs. In the event that there was more than one person recruited from an organisation or community, the focus group was usually held on site at the organisation. Interstate interviews were held in Melbourne on two consecutive days in February 2012; and in Sydney on two consecutive days in April 2012. All interviews/focus groups interstate were held at the respondents' place of employment, meeting place, or in one case, at a family home.

Prior to the commencement of the interview session, respondents were emailed or handed an Information Sheet; a topic guide with the interview questions; a form to be used if they wished to lodge a complaint about the research process; and two copies of a consent form giving permission for the interviews to be audio-recorded. One (signed) consent form was returned to the researcher.

For one community group whose first language was not English, the Information Sheet and Consent Form were translated (into Vietnamese) by the South Australian Interpreting and Translating Centre. A bi-lingual speaker assisted with the focus group. Cross cultural research has its challenges and two community members chose to leave after receiving the information. The reasons for this remain unknown but may have been related to low literacy levels or mistrust of consent forms (Liamputtong 2010). The interview topic guide appears in Appendix 2. Questions were informed by the literature review and the expert advice of the Research Reference Group. Questions related to experiences with extreme heat in the communities, perceived factors contributing to vulnerability, adaptive behaviours, knowledge of heat-health warnings and plans in place, social connectedness and climate change adaptation. The same topic guide was used for focus groups and one-to-one interviews. Whilst the questions for community members were essentiality the same, the wording was modified slightly.

Interviews were semi-structured with respondents encouraged to use the questions as a guide only and to expand on points of interest. At the conclusion of the session, respondents were given a small gift or gift voucher in appreciation of their time. All except one interview was digitally recorded and subsequently transcribed by either the researcher or an independent service. Field notes with details of the interviews were subsequently compiled.

#### 2.6 Data analysis

Transcripts were imported into the qualitative data analysis software package NVivo 9 (QSR International Pty Ltd. Doncaster, Victoria). Data were analysed in two ways: thematic analysis (Braun *et al.* 2006; Green *et al.* 2007) and the framework approach (Ritchie *et al.* 1994; Smith & Firth 2011). Data for Adelaide, Melbourne and Sydney were analysed separately.

Thematic analysis involved immersion in and familiarisation with the data, followed by sorting and coding passages of text into categories representing repeated patterns in the data. These were assigned relevant headings according to the context. Passages were coded to as many relevant categories as possible to reduce the likelihood of missing key points in the data. Similar categories were collated into identified themes (Braun *et al.* 2006; Green *et al.* 2007). The analysis was both deductive, with categories derived from prior knowledge, and inductive, with categories emerging purely from the data (Moretti *et al.* 2011).

The framework approach was used for sections of the data to enhance rigour. transparency and validity of the analytic process and the study findings (Smith & Firth 2011). Framework analysis, described by Ritchie and Spencer (1994), uses a systematic approach to provide coherence and structure to qualitative data, specifically in the context of applied policy research. This was considered to be particularly relevant to the current research with its implications for policy and practice. Further to familiarisation with the data, categorising and identifying themes as per thematic analysis, the framework approach incorporates a system of charting, mapping and interpretation as a means of data management (Pope et al. 2000; Ritchie et al. 1994). The approach involves abstraction and synthesis of the data in a chart or matrix format using headings and subheadings identified from the thematic analysis (Ritchie et al. 1994). With framework analysis being more deductive and less inductive than some qualitative approaches, it can be useful when the aims and objectives of the research are predefined (Pope et al. 2000). In our case we wished to specifically explore vulnerability factors in people from CALD communities, and found the methodology to be particularly useful for this aspect of the data. This asserts the views of Smith et al (2011) that qualitative methods should be flexible in order to achieve the research objectives when complex social phenomena are being investigated (Smith, Bekker, et *al.* 2011).

## 2.7 Extreme Heat and CALD Communities Workshop

#### 2.7.1 Aims

The Extreme Heat and CALD Communities Workshop was organised to engage with end-users and stakeholders; and to present the findings of the research. Additionally, the aim was to seek recommendations on ways to minimise the risk of harm for migrants and refugees during extreme heat, how best to provide information regarding preventive measures, and ways to assist adaptation to extreme heat and climate change in CALD communities.

#### 2.7.2 Organisation

Planning for the Extreme Heat and CALD Communities workshop started well in advance of the event. At a full-day planning meeting of the Research Reference Group in May 2012, the format of the Workshop was discussed and a date finalised. Organisation of the venue, speakers and catering followed, and an online event registration system was initiated through Eventbrite (http://www.eventbrite.com.au). Information together with the registration link was emailed to stakeholders and organisations with a request to forward to interested persons. Follow up information about the Workshop was provided in the August "Heat and CALD" study newsletter to stakeholders which formed part of the End-user Engagement Plan (see section 2.1).

A six person Workshop Organising Committee was established and met four times to discuss the logistics of the Workshop and to liaise with a professional facilitator. The Workshop program was finalised to include a balance of speakers, panel discussions, networking and group activities. The Hon. Jennifer Rankine MP, South Australian Minister for Multicultural Affairs, Minister for Emergency Service, Minister for Police, Minister for Correctional Services, and Minister for Road Safety, was sent and accepted, an invitation to open the Workshop.

Registered attendees were contacted two weeks prior to the scheduled date to ask permission to have their details listed in an attendee list to be distributed at the Workshop, and to indicate their areas of interest (see Section 3.3.1).

#### 2.7.3 On the day

The Workshop was held at the University of Adelaide on Monday October 29, 2012. When registering on the day attendees were provided with information including:

- Workshop program
- Attendee list
- Speakers' biographies
- A4 copy of the poster presented at the NCCARF conference entitled 'Heat and CALD: Barriers to Climate Change Adaptation in Culturally and Linguistically Diverse Communities'
- Feedback sheet
- Executive summary of the study findings

Seating was assigned for attendees so that at each table there was a heterogeneous mix of stakeholder backgrounds and a relatively consistent male:female ratio. A nominated scribe took written notes of discussions during the group activities. The scribes later summarised their notes which were then collated, forming a source of rich qualitative data. A thematic analysis of the data was undertaken jointly by the Research Officer and the Workshop facilitator.

## 3. RESULTS AND OUTPUTS

## 3.1 Respondents

For the qualitative component of the study there were a total of 36 respondents across the three cities, with the majority (21) being from Adelaide. As shown in Table 2, the respondents were from four main sectors: state and local government; non-government organisations (NGOs); the health sector and community members. There were 25 females and 11 males in total, and most were involved in service provision to and liaison with, clients in migrant and refugee communities. Many were themselves from migrant backgrounds with nationalities including: African, Bruneian, Iranian, Nepalese, Bhutanese, Polish, Egyptian, Vietnamese, Chinese, Indian, Filipino, Greek and Italian.

Focus groups comprised between 2 and 5 participants. The number of focus groups conducted in Adelaide, Melbourne and Sydney were 5, 1 and 3 respectively. Additionally, 4 interviews were conducted in Adelaide, 3 in Melbourne and 3 in Sydney.

Sector	Adelaide	Melbourne	Sydney
State and local government	7	2	4
NGO	10	1	2
Health sector	4	0	1
Community members	0	3	2
TOTAL	21	6	9

 Table 2: Numbers of respondents in each city and affiliations

## 3.2 Findings

Although data for each city were analysed separately, common themes emerged, each of which had subthemes. Broadly, the common themes were: (1) 'Vulnerability factors'; (2) 'Adaptation and behaviours'; (3) 'Climate change issues' and (4) 'What is needed'. Findings from each city are presented within these themes. City-specific issues are also shown.

## 3.2.1 Vulnerability factors

Respondents discussed the barriers and issues facing migrants and refugees when faced with extreme heat in Australia. Narratives relating to vulnerability were categorised into a number of subthemes. These are presented below for Adelaide, Melbourne and Sydney respectively.

## 3.2.1.1 Adelaide

In total there were 13 subthemes which emerged from the nine Adelaide narratives. A concise summary of respondents' comments is presented in chart format as per the framework method (Ritchie *et al.* 1994). In alphabetical order, Table 3 displays the first four sub-themes under the heading of 'Vulnerability Factors' i.e.: 'Clothing', 'Cultural factors', 'Fluid intake' and 'Health issues'. Table 4 shows sub-themes 5 to 8: 'Heat is different', 'Housing', 'Isolation' and 'Language barriers'. The remaining sub-themes 'Low literacy', 'Power costs', 'SES', 'Transport' and 'Who is vulnerable' are displayed in Table 5. This demonstrates the complexity of socio-cultural issues that can affect the

ability of vulnerable people within CALD communities to cope and adapt during periods of extreme heat in Adelaide.

(1) <u>Clothing</u>: Many issues overlapped between sub-themes as shown in Tables 3 to 5, with clothing and cultural factors being an example. These were interconnected, as wearing heavy dark-coloured garments can be part of cultural and religious norms with attire not varying according to the weather. Older people can often overdress in hot weather. Respondents noted however, that dress can be a particularly culturally sensitive issue. Although many migrants adapt quickly, some can be unaware of the need for adults and children to dress lightly during the heat:

"And there are situations as well when people's clothing [...], they'll put on heavy garments you know - there's their kids in heavy clothing even though its warm you know, even though it's hot [...] it's just out of not really knowing how to dress as well like how to dress for the for the heat."

A38, Coordinator

- (2) <u>Culture-specific-barriers</u>: One issue raised concerned people using shopping centres as cool retreats during hot weather. Some people of colour did not feel comfortable "hanging around" in shopping centres because "you stand out when you're different". The period of Ramadan was mentioned, and that being unable to drink during daytime can be a problem during hot weather. Having cold foods in summer was said to be something that was not acceptable to some people. It was reported that older people generally lived with their families and are not cared for in air conditioned nursing homes, but this situation may change in future years. Respondents highlighted that due to previous experience in their home countries, many migrants are wary of governments and local government officers offering assistance. Finally, access to emergency health care can be a cultural problem for women of some religions who would not be able "to be touched by a male doctor".
- (3) <u>Fluid intake</u>: Restricted fluid intake by some can also have a cultural basis. Some migrants do not drink enough water for a number of reasons including a dislike of the taste or temperature, or a lack of awareness about the need to keep hydrated. It was mentioned that for older people, a reluctance to drink water can be related to incontinence issues and that people are unaware of how easily seniors can become dehydrated. One respondent spoke of some migrants who have built up a "resistance" to lack of water because of past experiences, for example "cattle herders" who can "go for hours without water".
- (4) <u>Health issues</u>: Health care providers and others spoke of insufficient fluid intake in the heat leading to health issues such as kidney stones, gall stones, headaches and constipation. A physician mentioned that people in new and emerging communities can have a range of co-morbidities, nutritional deficiencies and mental health issues which can affect vulnerability. Also mentioned was the mental anguish that can be experienced by some in migrant communities during periods of extreme heat. One respondent said the confinement of not being able to leave the house due to the heat was "emotionally disturbing" and another said the heat can be "tormenting":

"For others now who are migrants who are new here they don't have cars the air condition and they don't have air condition in their homes and they live on Centrelink, and they don't have enough information about .[..].cooling when it's hot. They really feel the heat more than you know and it's really a torment it torments for people when it's really hot it's very tormenting like, you know."

A38, Coordinator

Other related points included a dislike by some of fans blowing directly on them, as this was perceived to be unhealthy. Additionally, the issue of sunburn was raised by several respondents. Issues about heat were not considered to be of importance to those with more pressing problems at hand:

"It comes last for them to know: oh, okay, the sun is burning me or I have to drink water - who cares if I have to drink water or not if I don't have money to pay my bill, you know, that comes not being essential in a priority."

A37, Health Worker

(5) <u>Heat is different</u>: Many respondents, including those from hot countries, commented that the heat in South Australia was different to that with which they were familiar. They spoke of the dry heat, that the temperature often does not cool down at night, and that the sun causes people to burn easily. It was also mentioned that Australians readily make assumptions about people from hot countries and their ability to cope with the heat.

"The problem we have as Africans in the heat is that the sun here you can actually feel it burning your skin where our sun does not burn your skin." [.] ...most Australians think that, especially African, we are used to heat. [...] But, as I said before it is a different type of heat..."

A37, Health Worker (1)

"You know, the heat in Nepal it is there, it is very hot the temperature goes as high as here but I think that, you know, you don't feel it like that. But here it is very direct and very, you know - very dry and uncomfortable."

A37, Health Worker (2)

- (6) <u>Housing</u>: Quality of housing was an issue mentioned by most respondents. It was reported that for the first six months after arrival rental housing is very basic for migrants. Usually houses have no air conditioning and may not have fans. Some asylum seekers have no secure accommodation or benefits and are "couch surfing". Sometimes migrants stay in public housing as they age and their vulnerability increases, especially as they spend more time at home. The unfamiliarity of some new arrivals with household electrical goods was also mentioned.
- (7) <u>Isolation</u>: Social isolation can contribute to vulnerability. Social and family connection in CALD communities can be strong but certain factors can lead to individuals or families becoming linguistically or socially isolated. Although some asylum seekers were said to lack connections with other groups in the community, isolation was mainly spoken about in the context of older people i.e. ethnicity can contribute to isolation in older people, particularly if they have no family connection or friends and do not know their neighbours:

"And we do have clients that don't have English and they are living on their own and some cases they are the only ones in the country. We even have clients who don't have any other relatives, so that really isolates them."

A44, Service Provider

(8) <u>Language barriers</u>: It was noted that language barriers were issues for not only new migrants from non-English speaking countries, but also older first generation migrants in whom reversion to their first language occurs later in life due to ageing or neurological conditions. This can affect vulnerability to heat in a number of ways. People can refuse to access services if they are not in their langauge and can become more isolated. Older, recently arrived people find it particularly difficult to learn English and sometimes can only communicate with people their age as the younger generations do not speak the traditional dialects:

"So, there are so many women in the community that don't even have the English language. They don't have the skills. They are stuck on their, their traditional language, they speak dialects, we speak dialects in our country. The children would not be able to speak the dialects. Because the children they not grow up in Africa. The children did not grow up in their country of birth. The children grew up in refugee camps, [...] So, if there is some older person in that family, that older person will be able to communicate with that older woman. Other than that, nothing, not the children, nothing. So you see how difficult it is. [...] That makes them very vulnerable. They can't communicate and communication is very important."

A33, Project Officer

(9) <u>Low literacy</u>: Literacy and language barriers are clearly linked. Low literacy levels can affect the transfer of information, the uptake of heat-health messages and the ability to read safety signs (e.g. at the beach) as mentioned by one respondent. However, even if information is written in other languages, low English and native language literacy can be a problem as many older migrants and humanitarian entrants have had minimal if any, schooling and cannot read well:

"You can't assume a level of literacy in their own language either that's sophisticated because some people, especially the ones that came post-World War II, a lot of them really were not educated beyond whatever - a couple of years of school."

A44, Service Provider

(10) <u>Power costs</u>: Concerns about power costs were prominent. Of those in the communities with access to air conditioning, many cannot afford the associated power bills and hence will not turn on their cooler. This applies not only to older migrants and people in new and emerging communities, but the community in general. This could affect well-being as pointed out by the following respondents:

"....This is not just for the Greek and Italian community, this is the community in general [....] the increasing rising costs of electricity is a huge issue and factor. [...] People still will make that decision consciously not to put their air-conditioner on because they don't want the stress and the worry about getting that bill."

A35, Coordinator

"Through this program we have seen - come across situations where people have died and it is - if they had had their air-conditioner on that would have cost them \$6 for the whole day or whatever the cost of it is."

A36, Team Leader

(11) <u>Socioeconomic status</u>: SES is clearly linked to the previous category (power costs) and poor housing conditions. Narratives revealed that on arrival, migrants and refugees may rely on Centrelink payments and are often unemployed, causing financial constraints. Some also feel a strong sense of "obligation" to send money to their families in their home country, adding to financial stress. First generation migrants can be "asset rich, cash poor" and have limited

disposable income. As one respondent pointed out, people with more income have better access to information and more choices available to them.

(12) <u>Transport</u>: Getting to cooler places can be a problem for people without ready access to transport. This can add to social isolation and hence vulnerability during extreme heat. It is unwise for older people to use public transport and stand at bus stops in the heat and respondents spoke about community buses being available in some areas. Public transport may be the only means of transport for humanitarian entrants who don't drive and don't own a vehicle.

Trans cript	1. Clothing	2. Cultural factors	3. Fluid intake	4. Health issues
A31		To some it may not be culturally acceptable to pick up pamphlets – they have to be given. The majority in new & emerging communities may not be able to read them at first.	Messages should specify that people need to drink water, not just liquid. Incontinence issues can be a problem when encouraging older people to drink more.	Many in new & emerging communities have high blood pressure, mental health problems, kidney problems, long term nutrition deficiencies. There can be problems with hospital discharge if patients are isolated & have no air conditioning. One client has faux episodes to get admitted. Incontinence issues can affect fluid intake. Health issues with older people. For those with grief and loss issues looking after themselves isn't a priority.
A32		Liberian women may not have literacy but are open to education and will pass information to other women in the family. Middle Eastern girls are veiled – hence a concern over heat exhaustion. Markets, fairs and festivals are good avenues for getting messages out.	Middle Eastern men don't drink enough water and kidney stones are common.	The clients use mainstream medical services well. Vitamin D deficiency is common, particularly in Middle Eastern females. Also people are fearful of skin cancer so they don't go out in the sun – a balance is required. Middle Eastern males often have kidney stones.
A33	For some people in new & emerging communities weather does not influence choice of clothing. Education is needed about dressing for hot weather.	Some from Africa were farmers who could cool off in streams when hot. Here, they just sit inside a hot house or in shade. The children can't speak their dialects. Education is needed about clothing. Older African people can't keep cool in traditional ways.	Cold water can hurt teeth. It is different from water in Africa.	Not being able to go anywhere is very emotionally disturbing. There can be a belief that it is unhealthy to have a fan blowing directly on a person.
A34	First culture reversion in older persons can affect what they wear. Older people can overdress for summer. Education is required about clothing and fabrics to wear during heatwaves.	Cold food is not eaten much in some cultures. Having hot food heats up the house. Food spoilage can be an issue. Some fabrics not suitable to wear in the heat. Going from hot to cold environments is often not acceptable. 'Climate change' may not be readily translatable. Asian women use umbrellas in the heat.	In some cultures drinking water is more acceptable than in others.	If people are not feeling well they won't put the air conditioner on because they don't want to be exposed to the chill. In Asian culture diet is not related to the weather.
A35		Many in Greek and Italian communities are wary of Local Government. Religion a big part of Greek culture – church representatives may be able to educate people about heat. Lush gardens help shade homes. Family culture means less isolation. There will likely be more Asian people in nursing homes in the future.		Older people think they can cope as they did when they were younger. Visual impairments in the aged can lead to air conditioners being set to heat not cool
A36	Children of some can be dressed in heavy winter clothes in hot weather. Education required about suitable clothing. Heavy clothes can be worn during Ramadan even if it is hot. Dark heavy clothing may be worn by Italian women during grieving period.	Ramadan can be an issue if it falls in hot weather. Older Asian people may expect their families to look after them but things may differ here. Cultural sensitivity is required re the wearing of cultural garments.	Some people prefer to drink hot water, rather than cold water.	Clients have presented in Ramadan with four layers of clothing, not drinking, looking like they are about to faint. Heat issues are not only restricted to summer. Shopping centres have removed seating as people were collapsing after travelling there in the heat. Trained medical staff required. Access to air conditioning can save your life. Client turned on air conditioner and the dust made her unwell so now she won't use it.

## Table 3: Vulnerability factors 1-4 (Adelaide)

Table 3 (continued):	Vulnerability factors 1-4 (Adelaide)
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Transc ript	1. Clothing	2. Cultural factors	3. Fluid intake	4. Health issues
A37	Muslim women may have dress codes that may not be	Muslim women can suffer in the heat because of	Some in new and emerging communities	Sun here burns the skin. It is common for new migrants to not drink water. Gallstones can be common. It is difficult for them to
	ideal for hot weather.	who have been in refugee camps. People adapt, but	can get dehydrated. Cultural issues exist	grasp the connection between lack of water and constipation or
	Bhutanese have a heavy	many things fall from their culture. Cultural issues	around drinking water. Some have built up	headache. People had to boil water in refugee camps where
	costume. Some try to adapt	with water intake (also in Ramadan). Middle Eastern	resistance to lack of water. People don't	diarrhoea was a problem. If a CALD woman seeks health care
	after a few months. For	women don't swim. Younger people can be	understand and need to be told to drink.	due to dehydration, there can be religious and cultural barriers
	people of other cultures,	controlling of older ones with no English. Many	Some don't like the taste. Water had to be	with treatment in emergency departments.
	cotton, flowing clothing is	Afgnan women are widows. People can't socialise	bolled in refugee camps. No drinking in the	
	most suitable.	well with neighbours here.	daytime during Ramadan.	
A38	Children can be dressed in	West Africans might feel the heat more because of	Many don't enjoy drinking cold water.	Opened doors when it is hot can be dangerous for babies in the
	heavy clothing - people don't	different climate. People can feel a responsibility to		house. Those without air conditioning at home or in car and who
	know how to dress for the	financially support family in their home country.		lack information about the heat can find it very tormenting.
	heat.	Some feel as if they stand out in shopping centres.		
A44		Related a story of an African girl who was unable to		Cognitive impairments add to vulnerability. People are unaware
		interpret drawings in two dimensions as flat paper		of the impact heat can have on them and how an elderly person
		was a new concept.		can easily get dehydrated. Education is needed. Electricity
				concessions are available for people with medical conditions.
				i nose with chronic conditions are vulnerable.

#### Table 4: Vulnerability factors 5-8 (Adelaide)

Trans cript	5. Heat is different	6. Housing	7. Isolation	8. Language barrier
A31	Climate is different (very dry) even for people who have come from hot areas. It cannot be assumed they will be OK here in a heatwave.	Many migrants have adapted their houses to suit the Australian climate. This is less likely for those that rent. In poor areas, fear prevents people opening up their house or sitting outside at night. SA Housing properties have no air conditioning supplied, & have short-term residents.	Some older people are quite isolated. Ethnicity can add to feeling of isolation. Difficult to get information to the isolated. Some have no family, don't know their neighbours & have no support network.	Language a big barrier in new CALD populations. Not only the language but the context can be problem – e.g. the concept of 'heatwave' can be unknown.
A32	Heat is very different to Sudan - so dry it pierces. No one had told him about the heat. Assumptions can be made about people's heat tolerance.	Mothers on Women at Risk visas in low quality rental housing pull down the blinds, open up house, use fans.	Clients are well connected with their extended families so isolation should not be a problem.	Some young female Liberian immigrants are not literate in their language.

Transc ript	5. Heat is different	6. Housing	7. Isolation	8. Language barrier
A33	Not as hot in Africa as in Australia. People who work on farms in Africa jump in streams to cool down. Here they just sit in the house.		Confinement in the house when it is hot can be emotionally disturbing.	Much harder for older people to learn a new language. Older people can only communicate with others their age - the African children don't speak the dialects. People can't understand English. Lack of education. Some common dialects could be used on radio.
A34	Temperature is variable here. There is a different climate pattern here than in Europe. Doesn't cool down in evening. Assumption that people from hot climates can adapt. Drier heat here. Sunburn mentioned.	Past issues recalled about new migrants not knowing what appliances were and how to use them e.g. fridges, toilets, stoves.		First language reversion is very common in the elderly. This can affect readability in English and their own language. It can occur with age, dementia, or stroke. For older migrants there is less need to use English as they age.
A35		Italian and Greek people have lush gardens and significant trees that shade houses.	Older people can be socially isolated, unable to access transport	Not having a good grasp of English presents a huge barrier. Elderly people can revert to their first language. Information is needed in other languages.
A36	Here it is different to W. Africa where it is tropical, with a cool wind. The newly arrived don't know how hot it gets. The heat is dry here. Middle Eastern people relate to the heat more. People from SE Asia and Africa find heat different here. Also a difference between states.	Many live in homes without air conditioning. European clients can live in old, big homes that take days to cool down. In first 6 months accommodation is very basic, often crowded. Asylum seekers can be homeless, no secure accommodation, and have to walk the streets trying to find a cool place.	Some have no family and friends and Meals on Wheels may be their only contact. Asylum seekers are not connected to any group. The newly arrived don't know who they can contact for help.	Language-specific radio stations are good for elderly people.
A37	Sun in Aust burns the skin, not so in Africa. Here it doesn't cool down at night. The heat is very direct, dry, and uncomfortable, unlike Nepal. Different type of heat here. Australians are under the misconception that African people are used to the heat	Refugees from camps are not familiar with household appliances. Very important that houses are in good condition. Generally they're not. There should be fans in each bedroom. The house is a refuge. If their house is hot people will go to shopping centres.	Neighbours don't socialise here.	Language the main thing. Information not in their language can't be understood. Being dependent on younger ones makes older people miserable. Lack of interpreter is barrier to health care.
A38	Hotter, drier here than in Africa. Even the breeze is hot.	Some refugees buy fans but have windows & doors open so just hot air blowing. Houses don't have air conditioning.		People won't get messages if they're in English. But not practical to have them in all dialects. Need information at orientation instead.
A44		Some Housing Trust homes are very old and have no air conditioning. Heating and cooling should be provided. Some live in own homes that are old, have no insulation, no air conditioning. They spend most of their time in the house. Focus should be on improving housing for the most vulnerable with the least income.	Those with no family connection are isolated and vulnerable. People can be invisible in the community. Regeneration in the suburbs disconnects people. The older people left when neighbours move on, feel isolated.	Clients might refuse Red Cross calls if not in their language. Language is very important. Clients can't access services in English and this can lead to isolation. Translating written material is ineffective. Phone contact best - interaction is the key. First language reversion occurs with dementia.

#### Table 4 (continued): Vulnerability factors 5-8 (Adelaide)

Trans cript	9. Low literacy	10. Power costs	11. SES	12. Transport	13. Who is vulnerable?
A31	With low literacy levels, CALD populations may not read or understand the information. Majority in new & emerging communities can't read. There are many obstacles to getting literature translated.	People won't put their air conditioner (AC) on if they can't afford it, no matter what their nationality. The over 65s won't put on the AC because of the cost. People in new and emerging communities have low SES and can't afford to use AC. Also, older people tend to stay at home.	If people are of low SES, they won't use air conditioning. Older migrants are frugal. Refugees have lower SES, can't afford air conditioning. Often they are in rental accommodation.	Not all councils have community transport to get people to community centres. Messages could be disseminated via TV on buses. Council programs are cancelled when it is too hot, due to transport issues.	People in new and emerging communities especially refugees (low SES, can't afford air conditioning, have health conditions). Older people who are poor and isolated regardless of ethnicity. People from Bhutan (cold climate). People with mental health problems. The socially isolated. Babies and young children in new and emerging communities. Humanitarian entrants - especially sole female headed families. Sudanese refugees.
A32	Young Liberian mothers don't have good literacy and can't access warnings. African culture can be a more verbal- oral tradition.	Young refugee mothers with babies won't use AC as they can't afford the cost of electricity. Service providers can't supply an AC if people can't afford to use them.	People can't afford the cost of electricity	Most refugees don't drive. They have to use public transport and stand at bus stops without shelters in the heat.	Teenage Liberian mothers with babies – often they lack literacy skills to access warnings. Middle Eastern girls who are veiled and have layered clothing. New arrivals who acquire sub- standard items and cars.
A33		People don't want to use the AC because of the financial aspect	People can't afford to register at a swimming pool. Financial barriers discussed.	Refugees don't drive and don't have vehicles. It is difficult for older ones to learn to drive.	Older refugee people who stay at home. Older African people who can't communicate with others are very vulnerable.
A34		People aren't familiar with air conditioners. Also can't afford power costs and with AC, they fear getting exposed to the chill if not feeling well.	More money equals better rights to information and more choices		Older people. People from cool European climates
A35	People might not be literate in English or their own language. Many older migrants had low literacy skills when they emigrated.	The increasing cost of electricity and power is a huge issue for older people. They won't put on their AC because they don't want the stress and worry about getting the bill.	Older people can be asset rich, cash poor so will not get new air- conditioning or get their old one fixed.	Older people can be socially isolated, and unable to access transport	Newly arrived migrants, refugees, humanitarian entrants. Persons with a disability. Persons with poor English or those in more than one of these categories.
A36		The elderly, even if they have AC, won't turn it on because of the cost. They will put up with a few days of heat rather than waste the money.	SES is a key factor (re air conditioning, housing). People have basic, crowded, accommodation in the first 6 months. Asylum seekers may have no income, Medicare, house, phone or TV.	Caution required when recommending older people leave home in the heat if they have to get a bus. Council's community buses can take them to library.	Low SES people, especially asylum seekers who receive no government support or secured accommodation and may not speak English. The homeless.

#### Table 5: Vulnerability factors 9-13 (Adelaide)

Table 5 (continued):	Vulnerability factors 9-13	(Adelaide)
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Trans cript	9. Low literacy	10. Power costs	11. SES	12. Transport	13. Who is vulnerable?
A37	Pamphlets a problem – some migrants have never been to school and can't read them.	Many are concerned with the electricity bill and are afraid they are using food money on electricity so they won't use fans.		Difficulties using public transport with babies, prams. Some drivers can be unhelpful.	Older people are more vulnerable
A38		If low income refugees have air conditioning they can't afford to run it. Most houses don't have AC and people can't afford to buy AC. They will open windows instead.	Finance is an issue. Refugees go without so they can send money to family back home. There is a strong sense of responsibility to help relatives - their money is not just for them.		New migrants (those with no air conditioning, low incomes, lack of information about cooling). West Africans, South Sudanese.
A44	Translating is a problem as some people are illiterate. A level of literacy in their own language cannot be assumed. Some post WWII migrants had little schooling.	The cost of electricity is a barrier for clients	Financial assistance required for some clients to install air conditioning. Lack of disposable income a problem. The most vulnerable with the least income have inefficient heating and cooling.	Transport to appointments by air conditioned car are cancelled when the temperature is above 39 degrees as frail elderly clients dehydrate quickly. People are advised to go to cooler places but the elderly can't get there.	The frail elderly. People with chronic health conditions, multiple illnesses. Isolated clients with no English. Low income people and pensioners.

(13) <u>Who is vulnerable?</u>: As shown in Table 5, some respondents mentioned that people from areas in Africa, Bhutan, the Middle East and cool European countries were at risk. Also mentioned were asylum seekers, mothers with babies, young children, people with low SES and low income, the homeless, people with a disability, persons with poor English, people with mental health problems and multiple chronic illnesses, the isolated, and sole female-headed families in CALD communities.

Most often mentioned however, were older people in migrant communities, and newly arrived migrants. Table 6 summarises the similarity in issues that can arise for these two groups. In this context 'new arrivals' collectively refers to people in new and emerging communities, asylum seekers and refugees. It follows that for older people in new and emerging communities, risk would be multiplied.

Issues	New Arrivals	Older, long-term migrants	
Coping with heat	Not used to the dry heat and are unaware of adaptive behaviours	Think they can cope in the heat as they did when they were young	
Air conditioning (AC)	Cannot afford power bills associated with AC	A frugal generation, reluctant to use AC	
Poor housing Poor quality rental housing with no AC		Often older, less efficient housing	
SES	Low SES, financial hardship	Pensioners have low incomes. Can be asset rich, cash poor	
Language barrier	Many do not speak English	First language reversion can occur later in life	
Low literacy levels	Many are illiterate	Low literacy levels in many older migrants	
Many do not drink water	Not accustomed to drinking tap water	May have incontinence issues	
Health conditions	Poor mental health, Vitamin D & nutrition deficiencies	Dementia, age-related chronic conditions and disabilities	
Clothing	May wear heavy or layered garments	Often over-dress, wear traditional clothes	
Isolation	Asylum seekers are not connected to any group.	Many older persons live in isolation	
Transport	Many don't drive and cannot easily get to cooler places	Mobility issues re access to cooler places	

Table 6: Key issues contributing to vulnerability in new arrivals and older migrants

#### 3.2.1.2 Melbourne

Compared with Adelaide, fewer stakeholders participated in the study in Melbourne (21 and 6 respectively). The vulnerability factors identified from the narratives were also fewer, totalling 7 as compared to 13 in Adelaide. They were: 'Cultural factors'; 'Fluid intake'; 'Health issues', 'Heat is different'; 'Housing', 'Language barriers' and 'Who is vulnerable' as shown in Tables 7 and 8.

(1) <u>Cultural factors</u>: Among the culture-specific factors, strong family connections and social networks were mentioned. These can be beneficial during the heat, particularly for older people in CALD communities who are cared for by the family. A cultural factor that was similar to that mentioned in Adelaide, concerned the reluctance of people to go to shopping centres to get relief from the heat if they were of a different physical appearance:

"If their place it is too hot - places like shopping centres like [...] where they have got this cooler [...] then people do go there but sometimes it looks awkward for them going and staying there because they think - because when you are there you are supposed to take a cup of tea or to take something like that. So for them they feel that they look a bit awkward."

M43, Settlement Officer

However, a refugee from Bhutan said that going to shopping centres was a more practical alternative than cooling off at swimming pools due to cultural reasons:

"... Swimming pool - it's not, what to say, accessible to all people because in camp there was no swimming pool and 95% of Bhutanese they don't know how to swim so that is not a good alternative for them so only shopping centre is a good alternative."

M40, Community member

(2) <u>Fluid intake</u>: Narratives regarding fluid intake were mixed. Respondents said that drinking was a way to keep cool, and one person said that he drinks more water now than when he was in Africa. However, others mentioned that messages about dehydration for older people and young children need to be reinforced:

"But I still think a lot of the key messages in keeping hydrated and what to do when working with young children or caring for young children, some of those messages I don't think are still reaching the communities."

M42, Diversity Officer

(3) <u>Health issues</u>: Several respondents spoke about the effect of the dry heat causing people to "feel exhausted and tired" and that chronic health conditions influence vulnerability. Valuable information about heat and its effect on the health of new arrivals was gained from discussion with a refugee family. When asked if very hot weather affects how people feel, the respondent answered that it was "affecting the total health of the people". Headaches, feeling lazy, itchy skin rashes and sunburn were mentioned. The respondent and his son went on to explain about the lack of acclimatisation and underlying health problems that could be contributing factors:

*"For new arrivals it is very difficult because their body is not used to it compared to the people who have already lived in Australia for a longer period."* 

M40, Community member (1)

"And they came from refugee background so they never had proper amount of nutrition food in their camp life and lack of light so they lack vitamin D as we too so they don't have a high resistance capacity of all those things..[...]. This community is facing a high problem there as the light was there in refugee camp was some kind of terrible lack of nutritious food, lack of good er water.[...] and lack of medical capacities."

M40, Community member (2)

(4) <u>Heat is different</u>: Melbourne respondents mirrored those in Adelaide, saying that the heat was different in Australia. One from Africa said that it was actually hotter in his home country, although not as dry. Another said that he was not aware of the climate in Melbourne before coming to Australia, and compared to Bhutan, he found it "extremely hot, extremely hot". (5) <u>Housing</u>: Whilst there were similarities to Adelaide in terms of the discourse about housing, there were also some differences, with a lower penetration of air conditioning in Melbourne:

"It was felt well, that you can cope if you sort of - and a lot of people are in that situation - and obviously because of the changing weather and more days, more hot days, people are installing air conditioning."

M39, Coordinator

According to one respondent, even if people did have cooling systems they can be non functional, particularly in old houses. Unlike much of Adelaide, public housing in Melbourne for new arrivals can be multi-story apartment buildings without air conditioning, with strategies for extreme heat under consideration:

"But I know [...] have been working on strategies as well in their towers whether they have cool spaces that people can go to in times of extreme heat."

M42, Diversity Officer

(6) <u>Language barrier</u>: As in Adelaide, lack of proficiency in English was identified as a vulnerability factor and a barrier to receiving information about extreme heat. It was mentioned that information should be in languages other than English.

"Only few people in the family, one or only two in the family or in some families not at all they understand the language so it is a real barrier and what information is given they are not able to catch it".

M40, Community member

(7) <u>Who is vulnerable?</u>: The sub-populations that were said to be vulnerable were similar to those mentioned previously including babies and/or young children, new arrivals who are not acclimatised, and older migrants whose first language is not English. One respondent mentioned older people in the community who had health conditions such as breathing difficulties, high blood pressure and diabetes. Another mentioned that older people try to be stoic in the heat:

"The older ones are particularly vulnerable because of the language and other cultural issues and [...] - there is an attitude of: we are going to stick it out and cope with it. They don't think through what other things they can do too to help." M39. Coordinator

#### Table 7: Vulnerability factors 1-4 (Melbourne)

Transc ript	1 Cultural factors	2 Fluid intake	3 Health issues	4 Heat is different
M39	Older migrants are vulnerable due to cultural issues. Mothers at home with young babies in the African and Muslim communities can be vulnerable. Older European people think they can cope in the heat.	Older people don't realise they need to keep drinking	Older people don't realise they need to keep drinking to avoid dehydration. People can get distressed in the heat and may not know what to do in an emergency.	Newcomers are not familiar with the climate
M40-41	Bhutanese refugees lack Vitamin D. Information through TAFE an option for this group.	Bhutanese refugees drink to keep cool	People in the community experience headaches, laziness, skin rashes, sunburn. The refugees can have poor health and low resistance - poor nutrition, low Vitamin D (lack of light, medical facilities, nutritious food & clean water in camps)	Respondent not aware of heat before arrival. Extremely hot here compared to Bhutan
M42	There can be culture clash with older African children and their parents which can be a barrier to sharing heat information.	Keeping hydrated messages are not reaching the communities.		Newly arrived are more vulnerable because heat can be different here
M43	Africa is hotter but more humid. Most older people in the community cared for at home not in aged care. Some in new & emerging communities feel awkward in shopping centres.	Respondent drinks more water here than in Africa because dry heat causes thirst	Dry heat causes exhaustion, tiredness. Some older people in new & emerging communities have health conditions including trouble breathing, high blood pressure, diabetes. Dry heat makes them uncomfortable.	Can be hotter in Africa but a drier heat here. Heat can be a problem for people from cooler countries.

#### Table 8: Vulnerability factors 5-7 (Melbourne)

Transc ript	5 Housing	6 Language barrier	7 Who is vulnerable?
M39	Hard for older people to cope if their homes don't	Messages don't get into communities whose	Some older people cope well. The aging ones without air conditioning are most vulnerable.
	have air conditioning. Up until now people have felt	first language is not English. Older CALD	Newcomers & refugees who are not acclimatised. Those whose first language is not English
	they can cope without air conditioning in homes in	people vulnerable because of language	and who are unaware of how to get help. Older CALD people because of language issues
	Melbourne. This is changing.	ISSUES.	and their attitude of thinking they can cope. Young children in refugee families.
M40-41	Most of the homes for refugees lack cooling	Language is the main barrier for Bhutanese refugees. Importance stressed about information in own language.	Older people and children are vulnerable. New arrivals who are not used to weather and who have poor health due to conditions in refugee camps overseas.
M42	Migrants live in public housing apartment blocks (towers). Strategies are being developed for cool spaces in these towers	People will not get messages if they are not in their language.	Newly arrived are more vulnerable. Older people living alone without cooling or not using cooling because of cost. CALD families on weekends when school children don't pass on messages. CALD communities won't be vulnerable to climate change if messages can be communicated.
M43	Most have air conditioning but old houses can have cooling systems that don't work. Most are renters and move often.	Migrants not getting messages if they are only in English. They should be disseminated in different languages.	Older people in new and emerging communities who have health problems that may get worse in dry heat. Newly arrived mothers and young babies.

#### 3.2.1.3 Sydney

From the transcripts of interviews and focus groups undertaken in the western and inner western suburbs of Sydney (Figure 1), six key vulnerability factors were identified: 'Culture-specific factors', 'Housing' and 'Health issues' (Table 9); and 'Language barriers', 'Power costs' and 'Who is vulnerable?' (Table 10).



Figure 1: Part of Sydney's inner western suburbs Image: N. Hansen

(1) <u>Culture-specific factors</u>: Cultural factors were mentioned that related to nationalities not discussed in the Adelaide or Melbourne narratives – for example the Mandaean community, a religious group whose prophet is John the Baptist. The community members inter-marry, often resulting in health disorders in the offspring. Additionally, a need to live near water leads to financial problems:

"The complication of this community is huge because of the health and other related inherited diseases and mental disabilities. [...]. So that community again is subjected to the climate. The community have to live around a water stream or close to a water stream because twice a year they have to go and be baptised again to keep their faith. And that again is a challenge because living around water is very expensive. [...] Now it is different. So they live far because of the prices of accommodation and the result is they are affected more by heat particularly."

S45, Manager

Members of a Vietnamese community group spoke of traditional ways of predicting the weather. They spoke of being from a hot tropical country and there was no mention of the heat being different in Australia. Other respondents discussed the effects of the sun and sunburn on people of different nationalities including Scandinavian and Asian, and one noted that people in some cultures put on more clothes when it is hot to protect them from the sun.

One respondent mentioned that the cultural norm of having older persons living with their family may not always reduce vulnerability if they are discouraged from using the air conditioner because of the added cost to the family. Conversely, Italian and Greek grandmothers who "do child care for the family" will often choose not to use air conditioning to ensure they have money to meet costs associated with the grandchildren. (2) <u>Housing</u>: As in other study locations, housing was a common theme in narratives from Sydney. One respondent mentioned that central air conditioning should be more standard in Australia as central heating is in European houses, and that this would be more cost effective. Another spoke about the advantages of home designs that allow air flow, and that migrants in the area often used their garages as breezeways. When asked about vulnerability factors one respondent related housing issues to two main groups, older people and new arrivals:

"Housing is, absolutely. What we have got is - the two different groups who are impacted, the older people are often in old houses that don't have insulation and [...] the houses aren't good for [...] the heat. The newly-arrived are in rental properties and often at the lower end of the market too and [...] don't necessarily insulate their houses for their tenants."

S49, Coordinator

(3) <u>Health issues</u>: Consistent with other cities, health issues were identified as vulnerability factors. It was mentioned that electrical equipment "associated with the sustainability of health and well-being" such as asthma machines and air purifiers, as well as air conditioners, can contribute to high power bills. Conversely, air conditioning could also be harmful to health according to one correspondent who preferred more traditional means of cooling.

"Air-con is no good. It hurt your health."

S48, Community Worker

Sunburn and the use of sunscreen were discussed, together with the high risk of melanoma in visitors from Scandinavia. It was also noted that the "slip, slop, slap" practice of Australians is unfamiliar to migrants and that unlike in other countries, sunburn can occur easily in Australia.

"We are not used to wear sunscreen because our cultural background in our country we not have this. It is hot but not that ..[...]..I never had sunburn in my country. Even under the sun for the whole day."

S48, Community Worker

Incorporated into the health sub-theme were issues concerning fluid intake. Whereas some respondents spoke about people in their community drinking plenty of water, another commented that it was difficult to get older people to drink. Promoting water to migrants as the "standard drink" should be encouraged, one respondent said. Another told of refugees preferring soft drinks as it is seen as part of the "American dream", and of the consequences for their physical and dental health:

"And in time their teeth rot, they gain weight because the children and the young people go - it is a sign of affluence and [brand name] tastes a lot better than water. So, and I know also from developing countries that because of the influence of advertising, they tend to drink more fizzy drinks."

S47, Manager

(4) <u>Language barriers</u>: As in Adelaide and Melbourne, the issue of language barriers was commonly discussed. In particular, problems associated with older migrants not speaking English were raised by respondents who related the difficulty in
teaching a new language to those over 60 years of age and of the older Greek and Italian migrants who are now reverting to their first language. Not only do language barriers prevent the uptake of messages but they can also affect access to health care:

"If something happened, if for example - if I don't speak English my home have something happened, for example I had someone sick at home, so even if I find a place to help I don't know how to say it how to describe it, what I need."

S48, Community Worker

- (5) <u>Power costs</u>: As in Adelaide, power costs in Sydney were a major barrier to air conditioner use. An issue not identified elsewhere was that community members who gambled faced financial difficulty when power bills arise (see section 3.2.2.3). One respondent suggested a way to avert this was the possibility of paying electricity bills in fortnightly instalments. Another thought that people may be unaware about government rebates and mentioned that there was a fear associated with the power bill that is causing a change in people's behaviour.
- (6) <u>Who is vulnerable?</u>: As shown in Table 10, those considered to be vulnerable included people in the Mandaean community, people from cool countries, people on certain medications, infants and young children, immigrant female workers, guest workers on cattle farms, people with a disability and their carers, people who have been alcohol drinkers and are overweight, and older people from a non-English speaking background. Refugees and newly-arrived people were also considered vulnerable:

"The newly-arrived - the stories are they put the air-conditioner on but they don't know you close the windows and doors so they have got everything open. And so then their bills go up even higher. And it is ineffective so they turn it up. Yes. So I would suggest that the newly-arrived because they don't understand this environment in any - and they don't - they are at a loss about how to cool themselves."

S49, Coordinator

Table 9:	Vulnerability factors 1-3 (Sydney)	
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Transcri pt	1. Culture-specific factors	2. Housing	3. Health issues
S45	Senior members of Syrian community often frequent clubs. Many Mandaean refugees have health issues, are used to living near water and have problems adapting to heat.	Migrants often live in public housing without central air conditioning. Central heating is standard in houses in Europe but air conditioning is not standard here.	People in poor health can have high electricity bills. Research needed into low cost ways of maintaining health and wellbeing in the heat. Balding can be a problem with Muslim women in the cold weather. Australia's built environment should be designed for the health and wellbeing of communities.
S46	Older Vietnamese people could predict the weather by watching dragon- flies but now more difficult. No problems adapting if from warmer parts of Vietnam. Respondents didn't use air conditioning much due to cost and environmental reasons.		
S47	Trend in melanoma in Scandinavian migrants. Asian women use umbrellas in the sun to stop their skin darkening. The burkini (Australian swimwear for Muslim women) is an example of adaptation. Tibetan refugees prefer to drink Coke than water as a sign of affluence, but this has health issues. Migrants are not familiar with 'slip slop slap'.	Where people live and how much they earn impacts on adaptive capacity	Migrants don't know about protection from the sun and the slip slop slap messages. Nationality data is inconsistently collected in health statistics. Tibetan refugees drink Coke not water resulting in tooth decay.
S48	Asian people not used to wearing sunscreen. Less air conditioning in Australia than in China. Bamboo bedding that allows airflow is not available in Australia. Ample opportunities for messages in Chinese media and at festivals. Need understanding of people's culture and background for dissemination of messages.		Sun burn can be an issue for migrants who are not used to the sun and who don't use sunscreen
S49	People from cold areas have trouble adapting to heat. Older Asian people living with their family may be discouraged from turning air conditioning on. Italian and Greek grandmothers do without for the sake of their children, grandchildren and won't turn on air conditioning. Chinese people commonly read newspapers. Different nationalities have different levels of environmental awareness.	Older people may live in older houses without insulation. Newly arrived migrants are in rental properties without insulation and air conditioning.	Older Greeks and Italians will drink wine but not water. Older people feel the cold more than the heat.
S50	Vietnamese people put on more clothes when it is hot to protect from the sun. Middle Eastern men socialise together. Water safety is an issue for African migrants. Swimming pools are an issue for Muslim women.	Migrants in the area often convert garages and carports into living areas and breezeways. Home designs should allow for air movement.	Safety and security is an issue around creeks and green spaces in the area.

Transcri pt	4. Language barriers	5. Power costs	6. Who is vulnerable?
S45	Senior CALD members can be linguistically isolated if they are unknown to service providers. It is very difficult to teach seniors English. Have to provide information in their language.	Using air purifiers and asthma machines increase power bills. Having air conditioners in every room, as opposed to centrally, increases power bills. When it is hot at home, people go to clubs where it is cool but then can't pay electricity bills. Suggestion that electricity company could take instalments out of pension, with consent.	People in the Mandaean community who have health issues and are used to living near water. Older people who go to clubs and spend money leaving too little to pay electricity bill. Isolated non-English speaking older people.
S46	Many older Vietnamese people do not speak English and are shy. Information provided in English would not be understood.	Respondents don't use air conditioning because of the cost and environmental concerns. Former outweighs the latter.	Europeans, Scandinavians
S47	Migrant workers need information in their own language		Scandinavians at risk of melanoma, people on certain medications, older people, people with low literacy, infants, young children, overseas visitors, immigrant (especially Asian) factory workers and guest workers, the disabled and the isolated.
S48	Oral and written information required in a bi-cultural context with good connection with the ethnic community. Migrant communities will be vulnerable to climate change if there are language barriers and problems accessing information and help if needed. Need information in their language.	Not as much air conditioning here as in China but migrants can't afford to use it here, especially with electricity prices rising,	Older people who can't learn English and adapt to new system, migrants who can't afford to use air conditioning.
S49	Older Greek and Italian migrants are reverting to their first language.	Older Greek and Italian migrants can't afford to put on air conditioning and would rather use the money on food or grandchildren. There is a 'fear factor' amongst older people that is changing behaviours. Rebates are available.	Newly arrived migrants from cold climates (e.g. Afghanistan) and those in rental properties, older Italian and Greek migrants, newly arrived people, overweight people.
S50	Language barriers for access of information. Important to have information in own language and not on English only websites	SES and financial concerns determine whether air conditioning is used.	People who put on extra clothes when it is hot.

### 3.2.2 Adaptation and behaviours

The second of the four major themes identified was Adaptation and Behaviours, relating to actions undertaken to stay cool in very hot weather. Findings for each city are presented below.

#### 3.2.2.1 Adelaide

The use of air conditioners was a major sub-theme in the Adelaide data. Much has already been discussed in Section 3.2.1 about how inability to access a cooled environment can contribute to vulnerability. Respondents spoke about concessions and rebates; cost-effective means of using air conditioning; and of producing information for consumers about the actual costs of running air conditioners. With that knowledge it was felt people would feel more in control and may be more likely to use their cooler. Another respondent mentioned the life-saving benefits of using air conditioners. It was mentioned that refugees may have never seen air conditioners or other electrical appliances such as refrigerators if they had spent time in refugee camps, and may have to learn how to use electricity:

"And they are not used to - also, not like using electricity. When I talk about my own community - we didn't have any for twenty years. So when we came here and we had to really talk about how to use it; the electricity. Don't light all the rooms when you are not there, you know, those very basic things; loads of information we had to give."

A37, Health Worker

Consequently, people may not know how to operate air conditioners correctly. Some have doors and windows open whilst the air conditioning is on, making cooling ineffective and costly. Additionally, on separate occasions respondents mentioned the incorrect use of coolers by older people who had settings inadvertently set to 'heat' instead of 'cool'.

"This is not so much CALD-specific but aging-specific issues, so aging CALD people with a visual impairment and not being able to appropriately use the technology. So you have probably heard horror stories of people with their airconditioner on and it is on heating."

A35, Coordinator

Migrants can adapt quickly to their new environment, and within months be wearing garments lighter than the traditional ones worn in their home country. One respondent said that for refugees, the ability to adapt stemmed from experiences in refugee camps. Compared with people of an older generation, younger people with a knowledge of English have a higher capacity to adapt. For others, adaptation is more difficult, particularly in terms of adaption to heat. Several respondents mentioned that the assumption that people from warmer climates adapt well "is not necessarily the case". One interviewee told of mothers dressing their children and toddlers in warm clothing during hot weather and opening doors and windows expecting to cool the house, but instead letting in the sun and hot air. There is reportedly little information available to new arrivals about appropriate adaptive behaviours and people can therefore struggle to cope:

"So when people get here now and its start getting hot - the main thing that I want you to take note of is the fact that we really don't know how to handle it. We have no clue. Of how to handle the heat. Other than just using our own like you know common sense and now that doesn't work for us as well that much, because people try to adapt and some people [....], we open the doors, you know, thinking when you open all the doors you know some fresh air is gonna come in while it's really just hot air coming in. And I have witnessed that on several occasions and it doesn't help.[...] you open all the windows but the air is still hot and often they'll have babies inside and it's really in fact dangerous.

A38, Coordinator

According to respondents it can be culturally challenging to not let light and air into the home and that people can "feel quite oppressed by it". In some communities, members were more likely to close blinds and curtains and open up the house only at night. Security fears however, were mentioned as a barrier to ventilating homes in the evenings in some lower socioeconomic areas.

Having one's own home assisted adaptive capacity. People of Italian and Greek background have significant gardens, trees and vines on their property that shade the house. Home additions such as pergolas were also mentioned. However, for people in rental properties these options are not available.

Some older people from Africa lament being unable to cool off in traditional ways such as wading into streams and waterways on the farms in their homeland. Instead, they sit under the shade of a tree, or have baths or showers to cool off. Some migrants go to shopping centres to avoid using their own electricity for cooling, whereas others stay at home out of the heat. The use of wet towels and flannels was mentioned, as was the use of fans.

The subject of swimming raised some cultural issues. For some, swimming is not part of the cultural norm. This is particularly the case for women, although one respondent reported an interest by CALD women in learning how to swim and that finding a culturally appropriate environment was problematic. Swimming safety is an issue for migrants unfamiliar with swimming pools and beaches, and the high rate of accidents and drownings was mentioned. "Swimming between the flags" for instance, is a concept that would be unknown to new residents. One local government service provider spoke about workshops in beach safety that were organised for new migrants. For some migrants however, swimming at the beach was not a consideration because of a fear of sharks.

Respondents in Adelaide spoke of many strategies in place that aimed to increase adaptive capacity and "empower" people to cope better with the heat, particularly those of non-English speaking background. However, older established migrants can be wary of local government and service providers, thinking there will be costs involved. Some organisations put heat plans in place following a recent major heatwave, for example:

"As an organisation we responded in that we actually provided our clients with a five stage - like five hints, tips on how to look after yourself but in their own language as well. It was like a magnet that they have on their fridge and whenever we see new clients we take that with us and we also take it to our existing clients so that they have actually got reminders of how they keep cool: lighter clothing, use the fan; don't go out in the middle of the day; all of those little hints"

A44, Service Provider

This organisation provided information in 35 languages. Social connectedness between clients was encouraged, and bi-lingual service providers telephoned vulnerable clients to speak with them about keeping safe during heatwaves. Staff also suggested older

clients register with the Red Cross Telecross REDi service which calls vulnerable people up to three times a day during heatwaves (Australian Red Cross 2012). One interviewee mentioned that this service can seem unusual to those from other countries where elderly people do not normally live on their own and the need for such a service may not exist.

Cooling centres were discussed, along with the potential challenges they can pose in terms of people travelling to, and spending time in, places such as shopping centres, libraries, cinemas and bus stations where there is no access to trained medical staff, and limited toilet facilities and available drinking water. Organisations and local government staff spoke of visiting older clients during heatwaves and of ways to increase resilience by encouraging preparedness for a heatwave. Examples given included having air conditioners serviced and outdoor blinds ready for use. Databases of vulnerable clients were kept by some, but it was acknowledged that these lists are not exhaustive and that persons not known to service providers, who have no family and do not know their neighbours, are most at risk. Volunteers play an important part in these programs. However funding was required, and one respondent said that "CALD agencies are not adequately funded" for service provision.

# 3.2.2.2 Melbourne

Respondents in Melbourne spoke of similar adaptation strategies to those mentioned in Adelaide. These included using fans, closing windows, staying inside, drinking water and iced drinks, having showers, using cold towels and flannels to sleep, and going to shopping centres. Family networks were said to be important with people looking after their aged relatives at home and telephoning other community members to check on each other's welfare in the heat.

Narratives attested to the heterogeneity within communities. Whilst some established first generation European community members go to holiday homes by the coast in the warmer months, adaptive behaviours in newer communities were quite different. Some community members feel "awkward" going to shopping centres and the majority stay at home in the heat. Some open windows to keep cool but are reluctant to leave doors open. Members of a refugee family from Bhutan who did not have air conditioning said that although they used a fan it did not provide much relief, saying it "does nothing" and it was "a bit useless". Other means of cooling they employed included drinking water and taking baths. Going to swimming pools and shopping centres was also mentioned, with the latter being the preferred alternative, as most Bhutanese "don't have a practice of swimming in pools". This family thought reverse cycle air conditioning adapt without trouble, but face the problem of electricity costs:

"I think they don't have much trouble adapting to it. As far as I can see they don't have much trouble. But the only thing - they are trying to keep themselves out of the heat because this heat, as I said, is a lot dryer than normal heat. So by keeping out they keep maybe in the houses. Stay in the houses or if they stay in the house, not in a compound - if they have got some trees they go and sit under the trees..[...]. So what they do is they open their cooling system. The cooling system also has a side effect of it; because they are using gas or using electricity. So its cost is affected."

M43, Settlement Worker

As in Adelaide, beach safety in Melbourne can be an issue as many community members and their children are unable to swim. Generally, people will go to the beach only if a trip has been organised by service providers. "And even going to the beach is, on hot days for some, they don't - some are not confident with their swimming. The children do not know how to swim. So I mean that is an issue, a safety issue for a lot of them. So even if they go down the beach there is the extra kind of stress about: well, if my child goes in to the water I am not in a position to - I can't swim."

M39, Coordinator

The life experiences of migrants, their adaptive capacity and the knowledge they bring with them was acknowledged as something from which other Australians could learn:

"And I think we sometimes don't acknowledge that some migrants have come from areas of extreme heat or where there has been extreme drought and have had to adapt anyway to particular conditions and they bring that history with them and how can we also learn of how communities have adapted to save water or food preparation and so forth where there hasn't been a lot. What can we also learn from newer communities that are coming to Australia as well."

M42, Diversity Officer

Citing examples of adaptive measures, local government staff spoke of heatwave strategies, information and health alerts being sent out to residents and "community groups, community leaders and organisations that are working with multicultural communities". Although the information was in English it was able to be translated and passed on via an "email tree" to other organisations and on to community members.

#### 3.2.2.3 Sydney

As noted elsewhere, financial status can modify levels of adaptation and air conditioner usage. Whilst some respondents in Sydney said migrants are generally well adapted, one noted the associated costs which can limit adaptive capacity:

"So, people cope and adapt but there is a cost of adaptation, the cost is their finance and the finance is not there because the pension is not enough so we have a problem at the end of the tunnel."

S45, Manager

However, as well as financial reasons, an Asian community group had environmental concerns around the use of air conditioning. Instead they chose to close blinds, turn off lights, have cold baths and catch buses to shopping centres to cool off. The strong community spirit and social capital of migrant communities was evident in this group.

"Instinct" was said to help people adapt. One respondent said that the people attending her Council activities seemed to cope with heat but she was unable to comment on the adaptive capacity of others who did not attend. She noted that "most people use fans" at home and close their curtains, and if people could afford it they were starting to use air conditioning. This respondent also thought that neighbourhood education and awareness was important if people needed help in emergencies and that promoting social capital and social inclusion was important for adaptation.

Several respondents mentioned that as well as shopping centres, clubs in the area were often used by people as cooling centres, particularly on days when pension allowances are paid. With cheap membership, cheap meals and a social and cool environment, clubs were seen as an attractive alternative to shopping centres, where people did not have to pay for air conditioning. One person commented that "the clubs are full of older people" and went on to comment on the associated gambling addictions. This can result in an inability of people to pay their electricity bills:

"I noticed that a lot of people, a lot of seniors, they actually physically go to shopping centres and big clubs to spend a hot day; big clubs that is another thing, that it encourage gambling....[...] Young people go there at the weekend but it's old people, especially on Thursday, which is pension day, and the end result is they can't pay for the electricity bill. They can't pay for their lifestyle and they want to spend time and they can't spend time at home because it is hot and it is boring and it is nothing to do; so go to the club because there is no shopping centre or if there is a shopping centre go and spend money, go and spend money so the cost of living is escalating due to lack of ability to survive at home."

S45, Manager

The use of public and private swimming pools was discussed as was the issue of safety and security around creeks and green spaces. Safety was said to be an issue with pools as there had been a recent drowning. Whilst traditional swimwear is not culturally appropriate for Muslim women, one respondent spoke of the "burqini" (Figure 2) - a unique adaptation strategy that had been developed to meet this need:

"There is a young Australian, second generation Muslim born here and she invented the burka that can go in to the beach [...]. So she has adapted that for her generation and it has been sanctioned by - it was - the blessings of the Imans and all that. So that became very popular and became a hit"

S47, Manager

Additionally, one respondent provided an example of a cooling strategy that was used in China but was unfamiliar to Australians - a bamboo mat which assisted in keeping people cool as "here it is just too hot during the night".

"During summer we don't use mattress so we can put - like special mat, to keep them cool. This is I think this is a very healthy way. Australia need to learn that." S48, Community Worker



Figure 2: Woman wearing burqini swimwear Image: Giorgio Montersino [CC-BY-SA-2.0 (<u>http://creativecommons.org/licenses/by-sa/2.0</u>)] via Wikimedia Commons

# 3.2.3 Climate change issues

Narratives on climate change reflected those concerning extreme heat. Many respondents reiterated issues mentioned in the context of extreme heat and said inequalities would be reduced with equal access to climate change information.

#### 3.2.3.1 Adelaide

Overall, it was felt there were barriers which may make some people in CALD communities more vulnerable to climate change, but generally with education and information, these would be reduced or overcome. One person mentioned the barriers would be the same as those mentioned during discussions on extreme heat, and that an increase in vulnerability would result purely in having more people in CALD communities, and more who were ageing.

"I don't think the barriers will change so much. There are always going to be language issues; what might change is the number of CALD people in the CALD community is going to increase. We have got increase in asylum seekers and increase in refugees and increase in work-skilled migrants coming to Australia as well. So I think their vulnerability as a group is going to increase because of the number of people. I think their vulnerabilities and the issues are going to remain the same issues unless we can get some more education and awareness in place. But I think it is going to be the number of people in the CALD community are going to obviously start aging, like our own community, so you are going to have that added obstacle but, the actual number of people here is going to increase."

A36, Team Leader

As in previous discussions it was noted that financial and socioeconomic status may determine adaptive capacity in terms of climate change. It was noted that with higher temperatures and electricity costs increasing this would have an impact. Respondents said that education about climate change was needed and perhaps information was not getting to the "general community - let alone the ethnic communities". In some languages the term "climate change" is not even easily translatable.

It was mentioned that older people do not realise the climate is changing although heatwaves are different to those in previous decades. Consequently, they recall hot periods and activities undertaken in their youth, and expect to be able to do the same now. Additionally, older people were said to be not very concerned about climate change and are not "future planning", instead focussing on more immediate issues such as health and finance:

"It is only going to get worse and worse because money is the main driver at the moment for people making that decision whether or not to stay cool in their homes. But around a climate change I think an older person in the CALD community, that is just another thing. It is just like: oh, okay it is getting hotter.

A35, Coordinator

Education on climate change matters was discussed and it was recommended that information be of the type "that they can relate to". This includes teaching children about climate change adaptation skills:

"I think information needs to be provided in schools for example as well to the kids - because it is a skill you have got to have. I mean, adapting to climate change is a skill and children need to understand how to adapt to climate change as they would have to adapt to, in the workplace or, you know, any other sort of skill that one - it is a knowledge and competency area I think everyone kind of needs to have. So, you can use children as ways of engaging families as well. So, if you have some very isolated families it might be another mechanism to actually get in contact with those families."

A31, Policymaker

Other climate risks such as bushfires, sea level rise, storms and floods were discussed along with the importance of getting messages to people whose first language is not English, and those in new communities in the poorest and most vulnerable areas. It was suggested that "hubs" where people could go during times of heat, flood or bushfire could be created. Nevertheless, it was asserted that new migrants may adapt well to the changing environment, because a high level of adaptation and resilience already exists:

"New arrival communities are already adapting; you know, they are adaptable, they are resilient just by the nature of coming out here. [...] they are always adapting to change. They are not stuck. So I think they will go quite easily with the environmental change as well."

A32, Practitioner

#### 3.2.3.2 Melbourne

Respondents spoke of different levels of knowledge and understanding about climate change within and between CALD communities. A respondent from a refugee family knew about climate change from the television, but said generally people in his community would not know about it because of the language barrier. Another from a new and emerging community said that when he was in his home country there was never any talk about climate change, so for his community it was a new concept and they needed information about climate change. A local council was intending to run programs amongst CALD communities on climate change and adaptation. However, it was noted that it is often difficult to get participants to attend information sessions, and other forms of information dissemination may need to be utilised.

In terms of adaptive capacity, it was seen as more difficult for community members in short-term rental properties to make adaptations to their home and gardens. A respondent from a refugee family thought that addressing the health issues in his community would improve their "resistance power to live against the changing environment". Generally, it was thought those most vulnerable to climate change would be older CALD community members, along with mothers with young children and babies at home. However, one respondent said that people in CALD communities would be vulnerable to climate change only "if we are not able to get the messages to them" to allow informed decision making:

"If we can get messages to the community so that they - you get the message and understand the message I don't think they will be more vulnerable. However, if there is a communication in getting that message about an extreme weather event or whether it be flooding or storms or heat, if you can't let people know that I think then people are going to be more vulnerable. So I think communication is a real key to informing people.[...] I think communication, getting that message, if we can make sure that is getting to communities and we know that people understand that, I don't think they will be more vulnerable than another community."

M42, Diversity Officer

Another respondent had a more holistic approach, wisely saying it was not only migrants he was concerned about because everyone would be vulnerable to climate risks:

"When we are living in the same boat, if that boat sink, all of you will definitely sink! So it is a worry in Australia then all Aussies will be affected, even the CALD community will definitely be affected and I feel very concerned about the forthcoming the heat the way that climate changes is definitely a concern. And especially when watching TVs, seeing that storms and the water killing people sometime these actually also threaten the CALD community. And we hear sometimes - some of them question - is this happening in Australia."

M43, Settlement Worker

# 3.2.3.3 Sydney

Having had a prior information session about environmental issues, a community group in Sydney were particularly concerned about global warming, air pollution, greenhouse gas reduction and their carbon footprint. They told of turning off appliances and lights, using energy saving light globes and planting more trees. They also spoke of traditional means of predicting the weather and storms, by observing dragonflies and clouds and how this was now more difficult because of the changing climate. An older man said he had been in Australia for 35 years and had noticed that Sydney's weather which was once quite stable was now very changeable like that in Melbourne. He thought that in a warmer environment people from cooler countries would have more problems adapting. He kept track of the weather in his home country and said how unusually hot it had been there the previous day. He also spoke of other severe weather events occurring there more frequently than in previous times:

"But now all the time they have the disasters you know like storms or floods, something like that. That mean the weather, it change and like".

S46, Community member

This was in line with another respondent's view that older, first generation migrants would not "intellectualise" about climate change, but would instead observe changes "from an experiential point of view". Another stated that older people in general would be at risk, no matter what their nationality. Community services, training programs and promoting water drinking could assist adaptation for older people.

Some thought that language barriers would contribute to vulnerability in non-English speaking communities if there was limited access to information about keeping safe in the heat or where to get help if required. However, the concept of vulnerable migrant communities getting help to adapt was rejected by one respondent who stressed the need for people to live in a harmonious environment and help one another:

"Not only is it we migrant vulnerable or you Anglo Saxon people need to help us. I don't think so. We help each other."

S48, Community Worker

# 3.2.4 What needs to be done?

There were many suggestions and recommendations made by participants in the study about ways to facilitate adaptation. There was not a clear disconnect between extreme heat and climate change issues as it was seen that with warmer temperatures associated with climate change, an amplification of extreme heat adaptation measures would be required. In addition to extreme heat however, there were discussions about other climate risks associated with a changing climate. As above, the responses are categorised by city.

### 3.2.4.1 Adelaide

The majority of recommendations concerned increasing information about extreme heat, and education about appropriate adaptive strategies. There appeared to be an unmet need for information as some felt that consideration was not adequately given to

CALD communities:

"This should be really good you know for the government or some of the service providers to look into it because it's just something that's overlooked basically it's overlooked, extreme heat, it happens every year but nobody thinks of the migrants and how it affects them really like just OK you survive like everybody else but not everybody is prepared the same way for it and not everybody has the resources to manage that time.

A38, Coordinator

Ethnic radio was also considered a good medium to disseminate weather information and heat-health warnings that at present fail to reach people in the communities. According to respondents people would take preventive measures if they knew about them. An awareness program to pass on the importance of listening to the radio for messages during extreme heat would be "very terrific, very important". In a strongly worded discourse, a respondent said that if alerted to do so, people would certainly listen to heat warnings because after all they had been through, refugees did not want to risk the potentially fatal consequences of extreme heat exposure:

"Then if that warning is passed and then the service provider go through, if there's some health system or health situation then maybe [...] each community is informed about what's going to happen if there's a precaution start thinking, what's going to happen. People would people would people would always want to listen to it because nobody wants to die. Nobody came here after fourteen years of war in refugee camp you come here and you want to die. But the information is not passed onto the CALD communities"

A33, Project Officer

In recognition that some cultures are more oral and aural than others, messages need to be simple and communicated in a number of ways and channels. As well as radio, one suggestion for communicating heatwave warnings was via television with scrolling messages or a Hotline phone number, along the bottom of the screen in a number of different languages. It was thought key religious leaders and representatives may be able to help in risk communication as religion can play a huge part in cultural life. Others suggested messages could be passed on at festivals and markets, or by bus drivers, or from schoolchildren to their families. A heatwave flow chart in pictorial form was another suggestion that may be an option for those with low literacy levels.

There was much debate about translated printed matter and online resources and that they are often not utilised well or formatted in a culturally appropriate manner, necessitating them being rewritten. Some respondents were not in favour of translated pamphlets but others thought those simultaneously displaying information in both English and a second language were very useful. It was noted however, that pamphlets and brochures will also not be picked up by some migrants for whom it is not appropriate to take things without them being given.

The important role of local government in climate change adaptation strategies was mentioned by many participants and one suggested there could be stronger partnerships between local government and community organisations. A Coordinator from local government suggested the approach to education for migrants be structured according to their literacy levels. Information on a one-to one basis would be needed for people with low literacy levels whereas printed resources could be available for those who are literate. Extra assistance would need to be provided for those that are isolated and without family connections. Programs may require the services of community engagement project officers in local governments or NGOs and the issue of limited funding for services was highlighted.

It was also suggested that community leaders be contacted and invited to attend training sessions about heat adaptive behaviours so they can then pass information on to community members. It was acknowledged however, that there are difficulties in engaging with the isolated. Alternatively, "people that are trained by the government" could run information sessions in the communities with the assistance of interpreters. Having the trust of the community was pointed out as being essential to successful community engagement with CALD communities.

According to several respondents, it is not only information during heatwaves that is required, but also general information about heat for new arrivals. It was suggested this be incorporated into orientation packs for new migrants as they are not told about the potential dangers of extreme heat.

"It would be simple to pass on this information it should just be made [...] part of the orientation, part of the information process and should be within and then people have that sort of understanding from as soon as they arrive then maybe when the time comes they are aware that OK it's hot you know and I need to go find somewhere cooler, [...] I think that would be a good way of just trying to inform [...] people.

A38, Coordinator

It was pointed out also, that it is not only community members that need information. It was suggested during a focus group session that medical practitioners could also be better informed about how to approach heat vulnerability in the community, and that there should be clear and explicit policies for GPs about providing information to patients. A vulnerability checklist for patients could also be used, and those at risk could be referred to the Red Cross Telecross REDi service (Australian Red Cross 2012) and local government services. It was pointed out by a focus group member however, that this may not be feasible as many people do seek medical advice, and if doctors are lacking in public health backgrounds they may focus solely on the clinical problems at hand rather than preventive measures. Together with information about heat, raising awareness about other potential climate risks associated with climate change such as flooding and bushfires was seen as important to build resilience:

"An awareness type, you know, in the community about these are issues that could affect you. They may not affect you today but they could affect you. So there is actually some awareness, [...] because of the climate change issues and what that actually does to people. The bushfire stuff because you live in an area where you can be prone to [...]. And floods, because you are in a flood-prone area, and there could be, [...] people are not aware and they are not aware if they don't understand the general messages. So there has got to be some other way of doing that, whether it be through the communities, whether it be through a very simple message to those people in the area where it is going to be affected in a very simple way that: you are in an area that could be vulnerable to flooding." A44. Service Provider

As well as recommendations to increase awareness in the communities, there were suggestions for practical strategies and sustainable technologies to mitigate the effects of a warmer climate. With older people spending most of their time indoors, it was felt that infrastructure should be improved so that houses are more heat-proof and people are safe in their own homes. One respondent commented that the most vulnerable on the lowest incomes have huge electricity bills because of inefficient systems and that it

was "an absolute disgrace" that coolers are not proved in public housing for low income earners.

Some respondents spoke of "safety houses for heat", or "hubs" that are safe and cool, and one thought that a "culturally comfortable" place where CALD people could gather and socialise when it was hot would be ideal. Other suggestions included bus shelters with water and adaptation measures for homes such as effective positioning of air conditioners, pergolas and deciduous trees for shade, and information to migrants about water saving strategies. There was considerable discussion about cost saving measures, low cost adaptation strategies and financial assistance to low income earners. These included better rebates, different tariffs rates between 10.00am and 4.00pm for pensioners as an incentive for vulnerable people to use air conditioners during the day, and increasing pensions during the summer.

Finally, in alliance with the thoughts of a Sydney respondent who aspired to a more harmonious community, one local government officer stressed that as well as getting information out to people it was important to make communities "a bit more inclusive of each other and more aware of each other". It was raised in another focus group when discussing services to meet people's needs, that the notion of connectedness and better integration would be advantageous in governance given the high proportion of overseas-born people in today's society:

"25% of the people over the age of 65 were born in a non-English speaking background country. So, you know, what are we doing about that in policy, in practice terms? And the answer is: well we are doing some things but it is a little bit of knee-jerk and a little bit of, you know, this and a little bit of that. And you go: no, there should be, you know, thoughtful co-ordinated, planned, integrated approach not just: oh, you know, we are going to do this.

A34, CEO

#### 3.2.4.2 Melbourne

As in Adelaide, respondents in Melbourne said that information was not reaching people in CALD communities if it was disseminated only in English. As stated by others, multi-faceted communication methods are required including written translated material, information on radio, television, newspapers, letter-box-drops, face-to-face communication and small group information sessions. The latter was seen as useful for the sessions on climate change. Messages on mobile and landline telephones were felt to be useful in emergency situations about what to do and where to go to seek help. The valuable role that local governments play in community engagement and disaster management was highlighted in Melbourne, as in Adelaide. Likewise, the role of doctors and health care in providing information was discussed. Information via children at school was thought to be useful but it was mentioned that as children get older there can be a "culture clash" which can be a barrier to getting messages through to the family. Suggestions for reducing vulnerability to climate risks included setting up registers of people at risk who could be called during emergencies, and information sessions about climate change for refugees and people from CALD backgrounds. Providing climate information for new arrivals at orientation was once again raised:

"... They need to be made aware that also this is, climate is very important here and these are, you know, in more recent years we have been experiencing these changes and we need to be aware - you need to do this - you know, it could be handed out as part of their orientation, you know, cards or something that at least can alert them to it but then some follow-up education and reinforcement". The need for this information was evident when a newly arrived refugee family was asked if they were aware about the hot weather in Australia before their arrival:

"During my interview there in Nepal, regarding the choosing of er place, location, I could not er give er them the correct information because I was not aware about the climatic condition of Australia."

M40, Community member

This family recommended that there be volunteers who could "inform the people" and "create awareness in the people". They also thought that information sessions about heat during summer would be useful and that they could be presented by trained community members. Many young refugees attend TAFE and it was thought information could be disseminated through TAFE colleges or the health sector. For people who did not speak English, it was stressed that information needs to be in their native language. The need for action was affirmed by the refugee family who took this research very seriously and had consulted with others in their community in the days preceding the interview:

"To my understanding and my experience the best way is to convince people or to inform people in their own language, that is very very important but this part is completely neglected".

M40, Community member

"Yes this is what we feel and we are sharing it and this is very very very very true, yes it is very true because since 3 or 4 days we have been sharing and I have even met a few peoples and, asked their opinion, their problems as .. regarding this one because this is a survey and I feel it should be very fact, so that something could be done in future".

M41, Community member

#### 3.2.4.3 Sydney

It was asserted by one Sydney respondent that evidence-based information was required and that this was difficult to acquire as data concerning language spoken at home, if interpreters are required, and country of birth are often poorly collected in health statistics data.

Innovative methods of communication were suggested. These included producing DVDs and YouTube clips and placing information in libraries and migrant resource centres, as well as ideas that had been mentioned previously such as community and ethnic radio, conducting sessions in schools, distributing information at cultural festivals and running "train the trainer" sessions for community members. Methods to encourage people to drink water were also suggested, however, one respondent wisely pointed out that before making behaviour changes people need evidence of a health concern and hence need to know *why* drinking water is important. As in other cities, it was noted that it was important for health information to be in the community's own language:

"And if we are talking about health and existence, instead of dying, we have to give the information in their own language and I can't rely on the government to do that."

S45, Manager

One respondent was clear that community engagement with culturally diverse communities required more than just someone who was bi-lingual. It was stressed that a deep understanding of both Australian culture and the culture and background of the community was essential for successful knowledge transfer to occur.

"Okay, this is something I really want to say. If you want approach the CALD community, no matter whatever topic of health or topic, we are better to use not only bi-lingual, bi-culture. Some people speak two languages, [...] But all their thinking and their mind is Australia. This is bilingual, but not bi-culture. Hire a bi-cultural worker [...]. I have lots of connections in my community and also I can fully understand my community so very easy to pass all government message to them. I know where to speak and how to speak. Yes. So make a lot of difference."

S48, Community Worker

As well as heat and climate change information, the respondent thought that neighbourhood education and awareness was also very important if people needed help in emergencies and that promoting social inclusion and a supportive community was important for adaptation:

".. so not only educate our migrant people say how to do this but also I think for general public, this education and awareness of support each other, support migrant community, it will make a lot of difference.

S48, Community Worker

In terms of the older, at risk people in the community, one respondent took the approach that instead of targeting seniors, it would be better to target their carers and family members - i.e. "the next line of defence". Longer term measures to address climate change included planting more trees for shade at sports fields where many migrants gather, and improving creeks and green spaces that could be used for recreational purposes on hot days. The important role of NGOs in facilitating change was asserted, although it was acknowledged that funding shortfalls were a limiting factor in running programs among CALD communities. In recognition of the escalating electricity costs in keeping cool during extreme heat, a respondent clearly stated the need for low cost adaptation measures with information in different languages.

"Education in to how to sustain health and wellbeing without breaking the bank. How to be able to live and survive in the hot weather while you don't need an air-conditioner for example."

S45, Manager

# 3.2.5 Summary

A summary of the findings in this section is displayed in Table 11 which shows the key and emergent themes. Factors that can confer vulnerability to extreme heat include socioeconomic disadvantage, pre-existing health conditions, isolation and advancing age. Barriers such as low educational attainment, living in rental housing, being of a non-English speaking background, certain cultural differences and being nonacclimatised to the local environmental conditions can compound vulnerability in new migrants and refugees. Those who are isolated or lacking connections with services may be more at risk. Stereotyping of certain groups about their ability to cope with heat occurs. The social capital existing within networks and families, and the high adaptive capacity of people in CALD communities are enablers in the adaptation process. Extending the communication of culturally appropriate messages about heat adaptive behaviours and prevention measures into communities where English is not the first language may reduce risks of harm to the vulnerable during hot weather. Local strategies can be reliant on funding. With climate risks increasing, climate change adaptation plans within Australia's multicultural population need to be inclusive of CALD communities.

	Adelaide	Melbourne	Sydney	Comment
Vulnerability factors				
Clothing	$\checkmark$			Some cultural practices can
Cultural factors	~	~	~	community networks and family bonds assist adaptation.
Fluid intake	$\checkmark$	✓		Sun exposure, dehydration and
Health issues	$\checkmark$	✓	✓	heat-health.
Heat is different	~	~		New arrivals are not acclimatis- ed to the dry heat of SE Aust
Language barriers	✓	✓	~	Language barriers and low
Low literacy	$\checkmark$			literacy can be linked to low
Power costs	$\checkmark$		✓	bills, poor quality rental housing
Housing	$\checkmark$	~	✓	without AC, and an inability to access information about heat-
SES	$\checkmark$			related risks to health.
Transport	$\checkmark$			Limited access to transport can
Isolation	$\checkmark$			particularly for older people.
Who is vulnerable	~	~	~	Older people, low SES with no AC, refugees, non English speaking people, new arrivals
Adaptation & behaviours	✓		Migrants and refugees have high adaptive capacity. Extreme	
Climate change issues	✓		heat and climate change adaptation will be assisted by	
What needs to be done		$\checkmark$		to all including CALD groups.

#### Table 11: Summary of barriers and enablers

# 3.3 Extreme Heat and CALD Communities Workshop

The Extreme Heat and Culturally and Linguistically Diverse Communities Workshop was held on Monday 29 October 2012 in the Eclipse Room, Union House, at The University of Adelaide. Over 70 people registered to attend via the online event registration system which was initiated in July, with 25 registering in the first week. Fifty seven people attended on the day and were seated at seven tables.

Figure 3 shows the program which consisted of presentations by the researchers and key informants; group sessions; and a panel discussion during which the audience asked questions of the expert panel. The panel members were: Dr Leigh Wilson (University of Sydney), Associate Professor Gil-Soo Han (Monash University), Ms Val Smyth (SA Health), Dr Lillian Mwanri (Flinders University) and Ms Lynette Pugh (Department for Communities and Social Inclusion). Figure 4 shows a section of the audience listening to the presentation on "Heatwaves – the health impacts" by Chief Investigator Professor Peng Bi.

9.00-9.30am	Registration
9.30-9.35am	Welcome and overview of day
9.35-9.45am	Official Opening Hon. Jennifer Rankine MP, Minister for Multicultural Affairs
9.45-9.55am	Heatwaves - the health impacts Professor Peng Bi, The University of Adelaide
9.55-10.15am	Extreme heat and climate change adaptation in CALD communities – presentation of study findings Dr Alana Hansen, The University of Adelaide
10.15-10.30am	Discussion and questions
10.30-11.00am	Morning tea
11.00-11.10am	New and emerging communities' perspective Dr Lillian Mwanri, Flinders University
11.10-11.20am	Emergency management during extreme heat Ms Val Smyth, Director, Emergency Management, SA Health
11.20-11.30am	Strategies to assist older people during heatwaves Ms Lynette Pugh, Director, Domiciliary Care, Department for Communities and Social Inclusion
11.30-11.50am	Panel discussion
11.50-12.45pm	Dissemination of heatwave warning messages in CALD communities
12.45-1.30pm	Lunch
1.30-1.45pm	Multicultural health communication Mr Michael Camit, NSW Multicultural Health Communication Service
1.45-2.45pm	Assisting community education and adaptation
2.45-3.00pm	Feedback and discussion
3.00-3.30pm	Afternoon tea and networking
3.30-4.00pm	Consensus of recommendations
4.00-4.30pm	Summary and close

Figure 3: Workshop program



Figure 4: Extreme Heat and CALD Communities Workshop Image: L Wilson

# 3.3.1 Attendees' areas of interest

As described in section 2.7.2, registered attendees were contacted prior to the event to indicate their interests. The options (from which people could choose more than one) were: 'new and emerging communities'; 'older migrants'; 'refugees and asylum seekers'; 'new arrivals'; 'emergency management'; 'community management'; 'migrant health'; 'local government'; 'climate change adaptation'; 'health impacts of heatwaves'; or 'other' interests.

Of the 30 people who responded, most (n=18) indicated an interest in emergency management and community engagement (n=18), closely followed by health impacts of heatwaves (n=17) as shown in Figure 5. There were 13 people who indicated an interest in and new and emerging communities and 13 in climate change adaptation.



Figure 5: Interests indicated by 30 of the Workshop attendees

EM = emergency management CE = community engagement; HIH = health impacts of heatwaves; NEC = new and emerging communities; CCA = climate change adaptation; OM = older migrants; MH = migrant health; LG = local government; NA = new arrivals, RAS = refugees and asylum seekers.

# 3.3.2 Group sessions

Informed by the study findings indicating that information was required about extreme heat in CALD communities, there were two group discussion sessions held during the Workshop. The first, held in the morning session, was a task to discuss the dissemination of heatwave warnings to CALD community members. Attendees were

invited to consider the topic at hand (Figure 6) and after a period of 30 minutes, a spokesperson from each table summarised the table's discussion for the audience.

<u>Scenario</u>				
Next week there will be an extreme heatwave with temperatures over 40 degrees C expected for at least 5 consecutive days				
•	What policies/procedures could be in place to strengthen and build on existing strategies to ensure people in CALD communities will have access to the extreme heat warnings?			
<ul> <li>What needs to be done during the heatwave to minimise the risk of health impacts in people from migrant and refugee backgrounds and non-English speaking people?</li> </ul>				
For exam	<u>ple</u> :			
	What works and what could be improved?			
	How should messages be disseminated?			
	What are the barriers?			

Figure 6: First task for group discussion at the Workshop

A second group discussion task was held during the afternoon session. With some people attending in the morning only, two tables of attendees merged for the discussion session. There were three topics for consideration amongst the remaining six tables (Tables 2-7), with two tables discussing topics related to older migrants (Figure 7), two discussing refugees and asylum seekers (Figure 8) and two discussing new arrivals (Figure 9).

The focus for this discussion is OLDER PEOPLE in CALD communities				
•	Recommend culturally appropriate means of encouraging preventive behaviours (e.g. air conditioner use, light clothing) in older migrants during extreme heat			
<ul> <li>Recommend ways to assist the socially and/or linguistically isolated in this group so they can receive assistance with short and long term adaptation</li> </ul>				
For examp	<u>ble</u> :			
	How can this group be best identified?			
	What type of messages would be most useful?			
	What adaptation strategies will help in the long term?			

Figure 7: Second task for Tables 2 and 3

#### The focus for this discussion is families in NEW AND EMERGING COMMUNITIES

- Recommend culturally appropriate means of educating community members about heat in Australia and encouraging preventive behaviours
- What can be done to assist longer term climate change adaptation in this group?

For example:

- What would be the best approach to community engagement and health promotion?
- What are the barriers?
- What low cost adaptation strategies will help in the long term?

Figure 8: Second task for Tables 4 and 5

#### The focus for this discussion is NEW ARRIVALS

- Recommend culturally appropriate means of educating community members
   about heat in Australia and encouraging preventive behaviours
- What can be done to assist longer term climate change adaptation in this group?

<u>For example:</u>

- Should information be available on arrival or at some other time?
- What form of community engagement and health promotion would be most suitable?
- What low cost strategies could be suggested to assist adaptation in the long term?

Figure 9: Second task for Tables 6 and	Figure 9:	Second task for Tables 6 and 7
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#### 3.3.3 Recommendations from the Workshop

During the afternoon break, the facilitator and the table scribes consulted together and produced a list of recommendations from the day's discussions. These were presented to the audience and refined. The final consensus of key points and suggestions were:

- Establish a leadership group that includes groups at the coalface.
- Learn from other states and agencies who communicate with CALD communities.
- Engagement with CALD communities using new and innovative methods of engagement.
- A standardised coordinated communication plan, possibly packaged with other emergency messages.
- Engage experts to tailor theoretical messages using different approaches such as visual, pictorial, auditory.
- Explore and secure funding opportunities to support and implement recommendations.
- Further research to explore issues and evaluate the effectiveness of the communication.

As a final outcome of the day, interested persons from a range of organisations and departments, volunteered to form a leadership group.

### 3.3.4 Workshop reports

Notes taken by the table scribes collectively formed a dataset consisting of rich qualitative data yielded from stakeholder discussions. Following the Workshop, the summaries of the scribes' notes from each table were edited and collated into a comprehensive Post-Workshop Report (Appendix 3) which was sent to all registered attendees.

A thematic analysis of the data was also undertaken. The six main themes to emerge from the analysis were:

#### 1. 'What is the message?'

This theme addressed the format of the messages to go to CALD communities and concluded they should comprise just a few key messages presented in a format that was clear and easy to understand. An orientation pack for new arrivals with information about local climate is needed.

2. 'Who do we want to reach?'

Although only a small proportion of people in CALD communities is likely to be at risk, messages need to reach everyone. Specific groups were mentioned including older migrants and their carers.

3. 'How will we reach people?'

A range of risk communication methods were discussed including one-to-one communication, and presentations to clubs and school children. Also mentioned were the media, flyers, newspapers, the internet, telephone messages and social networking.

4. 'When should the message be sent?'

Messages need to be prepared in advance and disseminated at opportune times. A longer time frame could possibly improve the likelihood of uptake.

5. 'Who should be involved for success?'

A coordinated approach is required with NGOs, government departments, emergency services, people in the community and respected community leaders working together.

6. 'What else needs to be addressed in the big picture?'

Greater acceptance of CALD communities into Australian society is required. Discussions on emergency management for extreme heat need to be inclusive of people in CALD communities. More research is required and funding constraints were acknowledged. Barriers for older migrants in the heat were discussed. Isolation was recognised as a problem as was the need for better housing design. An advocacy group was required to move forward with recommendations.

A more detailed account of these themes formed the basis of a summary report (Appendix 4) which was emailed to attendees along with the full Workshop report.

### 3.3.5 Feedback

Feedback sheets (Appendix 5) were provided in each registration pack. The questions were:

- 1. How useful did you find the workshop,
- 2. What aspect did you find most useful?
- 3. Did the workshop meet your expectations?
- 4. Would you like to add anything to the recommendation aimed to assist CALD communities during times of extreme heat or in terms of adaptation to climate change?
- 5. Any final comment you would like to make?

At the conclusion of the Workshop 17 feedback sheets had been returned. Of the 16 respondents that answered Question 1, 75% indicated they found the workshop very or extremely useful. In response to Question 2 about which aspect they found most useful, the response which rated most highly was 'discussion' (n= 11); followed by 'presentations' (n=8); 'group work' (n=7) and 'networking' (n=5). Of the 17 responses to Question 3, 94% (n=16) said the Workshop met their expectations. One respondent who indicated the Workshop did not meet their expectations, commented that it was "not client focussed enough". Other comments included:

"Amazing amount of interest and enthusiasm"

"Raised important issues. Looking for outcomes"

"Provided practical tips of discussing extreme heat management with clients" "Appreciate the effort made to organise this - it's a step in the right direction" "It brought together all relevant agencies & individuals to progress on this matter"

"The subject was discussed extensively and was very useful"

Question 4 invited comments on recommendations. The five responses were:

"Explore how to deal with the cost of electricity"

"Recommendations will take time. May not be possible for this year, need to remember that some maybe minor things are still happening"

"Progressing the issues arising from emergency management (not only heatrelated) will be greatly beneficial to the community"

"Lead agency should work with CALD community organisations/groups when developing messages and implementing it"

"The agreed steps are getting us moving in the right direction"

Question 5 asked for any final comments. Of those who provided a response, 50% said the workshop was "well done", "well organised" or "very good". Others included:

"I am interested to see how this filters down to actions that encourage behaviour changes"

"Ensuring the issue is progressed through each government agency will ensure that information filters into CALD communities. Ensure CALD is talked about in community engagement planning phase."

# 4. DISCUSSION

With many studies reporting increases in morbidity and mortality associated with heatwaves in Australia (Bi *et al.* 2011; Nitschke *et al.* 2007; Nitschke *et al.* 2011; Tong *et al.* 2009) and warmer temperatures imminent, the issue of vulnerable subpopulations has come to the fore in public health. This unique study builds on overseas (mainly U.S.) evidence, indicating that ethnicity can modify the risk of heat-related illness in people of ethnic backgrounds (Basu 2009; Klinenberg 1999; Knowlton *et al.* 2009; O'Neill *et al.* 2003; Uejio *et al.* 2011). Our findings, which have been based on a relatively small number of interviews in three study locations, have identified that within some CALD communities there are those for whom multi-dimensional socio-cultural issues may increase their susceptibility to heat. The common sub-themes relating to vulnerability that emerged from our findings were cultural factors, pre-existing or consequential health issues, language barriers, and poor quality rental housing. For geo-spatial reasons there were also city-specific issues.

It is recognised that Australia's population includes a multitude of ethnic and cultural groups. Our study draws on previous research undertaken in Adelaide (Hansen *et al.* 2011; Zhang *et al.* 2012) where the heat casualties of a severe heatwave included a high proportion of overseas-born people. Hence this group is the main focus of the present study. However, the terms 'multiculturalism' and 'culturally and linguistically diverse' which are used in this report can have different connotations which may or may not include people of Aboriginal and Torres Strait Islander origin. This group was not excluded from our study, however, no respondents identified as being Indigenous and narratives focussed on people from migrant backgrounds. Notwithstanding, Indigenous Australians in remote areas can be susceptible to hot temperatures (Guo *et al.* 2013) and are expected to be disproportionately vulnerable to climate change for similar reasons to those relating to disadvantaged minority groups - i.e. low SES, poor housing, chronic illnesses, and problems accessing culturally appropriate health care (Green *et al.* 2009).

As CALD communities are vastly heterogeneous, our findings are not intended to be generalisable or representative of the broader migrant population. Assumptions about SES and English language proficiency within ethnic groups should be avoided. Indeed, for migrants who arrive as part of the skilled migration program, unemployment rates are below the national unemployment rate (Australian Government Department of Immigration and Citizenship 2010). Furthermore, whilst a considerable proportion of Australia's immigrants are from English speaking countries, "being from a country other than a main English-speaking country does not imply a lack of proficiency in English" (Australian Bureau of Statistics 2012c). It should be noted that approximately 30% of overseas-born residents are from New Zealand or the United Kingdom (Australian Bureau of Statistics 2012b), with the U.K. providing the highest number of recent migrants (with permanent Australian resident status), just ahead of India (Australian Bureau of Statistics 2012c). Nevertheless, recognising and addressing the issues facing those at risk in minority groups is important to prevent unnecessary adverse health consequences during very hot weather.

# 4.1 Cultural, socioeconomic, linguistic and environmental factors

Socioeconomic disadvantage and low educational attainment are recognised risk factors for mortality during heatwaves regardless of ethnic background (Michelozzi *et al.* 2005). For those in CALD communities who may be at risk during hot weather due to age or poor health for example, a number of inter-related cultural, socioeconomic, linguistic and environmental factors were identified that could potentially add to existing vulnerability. These related to cultural factors, insufficient fluid intake, socioeconomic

disadvantage and poor quality rental housing for low income migrants, high power costs restricting access to air conditioning, linguistic and social isolation, language barriers and low literacy rates limiting access to heat-health warning messages, limited access to transport for some seeking cooler places, and an unfamiliarity with the 'different' heat in south-eastern Australia. Amongst the vulnerable in CALD communities are older people. Aged people of any nationality can have declining physical and mental health that can increase heat-susceptibility, and barriers to using cooling systems may be present as previously reported (Hansen *et al.* 2011). It follows that older people in new and emerging communities may be doubly at risk, particularly if they have poor English proficiency.

Historically, Australia's climate has been an attraction and a source of wonder for immigrants with vastly different climate experiences (Banwell et al. 2012). However, few realise the heat in Australia can kill and recent arrivals may be at risk during heat emergencies due to lack of acclimatisation. An Adelaide study has shown that a "lack of familiarity with Australian environmental conditions" is a predisposing factor for deaths attributed to high environmental temperatures (Green et al. 2001). Elsewhere, new migrants have been identified as being amongst the most vulnerable in studies of disaster resilience. In the Cayman Islands for example, new migrants in rental accommodation were found to be less likely to reduce their risk of harm from cyclones and it was speculated that this was due to lack of past exposure to the hazard and an underestimation of the potential severity of the impact (Tompkins et al. 2009). It is likely this also applies to new migrants arriving in Australia who may be unaware of the potential severity of health effects that can occur if risk reduction strategies are not employed during periods of extreme heat. Tourists who are unfamiliar with hot environmental conditions are also at greater risk for these reasons. A study examining the circumstances of nine heat-related deaths in South Australia noted that four of the nine were tourists (Green et al. 2001).

It is recognised that people born overseas generally adapt well when settling in Australia and innovatively make modifications to suit the Australian lifestyle that align with cultural values (e.g. burqini swimwear or using sun-protecting umbrellas). Indeed, some adaptive measures can be learnt from people with other climate experiences. Certain cultural norms can be beneficial to the resettlement and acculturation process and among these are the strong family and social networks that exist within collectivist communities. The strength of community networks can bolster adaptive capacity, particularly for new arrivals. Most refugee families readily form connections with community and religious groups upon settling in Australia (Sheikh-Mohammed *et al.* 2006) and many have their elders living with the family. This strong social capital reduces the likelihood of isolation which is known to be a risk factor for heat-related mortality (Vaneckova, Beggs, *et al.* 2008) as is not leaving home daily and living alone (Naughton *et al.* 2002). Linguistic and social isolation is linked with societal vulnerability to extreme heat (Uejio *et al.* 2011) and is a particular risk for older people (Worfolk 2000) as noted by several respondents in this study.

This study has also shown that some cultural mores can be maladaptive during extreme heat for those who are unacclimatised. These can include women's garments more suited to cooler climates, and not drinking water. Those unfamiliar with heatwaves tend to open doors and windows during the heat of the day in an intuitive attempt to cool homes. This is often counterproductive and epidemiological studies following the French heatwave of 2003 showed that the practice of opening windows during the afternoon was actually associated with an increased risk of heat-related death (Vandentorren *et al.* 2006). Furthermore, overseas and Australian studies have shown that temperatures inside inefficient homes can in fact get hotter than outdoor air temperature (Scovronick *et al.* 2012; Strengers 2008). The reluctance or inability of

some persons to go to cooling centres for cultural or other reasons can also place them more at risk of harm during hot weather, as can unfamiliarity with certain aspects of Australian culture such as swimming safety and wearing sun screen.

Poor health is a risk factor for heat-related morbidity and mortality (Bi *et al.* 2011) and stakeholders in our study mentioned a range of physical and mental conditions that can be present not only in older migrants but also in humanitarian entrants in new emerging communities. Poor mental health can be the result of previous trauma and increased psychological distress due to unemployment, isolation, poor English proficiency and the overall stress associated with acculturation (Anikeeva *et al.* 2010). Although not directly related to heat susceptibility, the problem of vitamin deficiencies in humanitarian entrants was mentioned by respondents. This is supported by studies which have shown Vitamin B12 (Benson *et al.* 2013) and Vitamin D deficiencies (Benson *et al.* 2007) to be prevalent in refugees in Australia. Diabetes, which is a risk factor for hospitalisation (Semenza *et al.* 1999) or death (Schwartz 2005) on hot days, has been reported to be more prevalent in some migrant groups (i.e. those from Italy, Greece and India) compared to the Australian-born population. This is primarily attributed to higher body mass index and abdominal fat distribution in southern European and Indian migrants respectively (Anikeeva *et al.* 2010).

In a Sydney study investigating access to health care in recently arrived Sub-Saharan refugee families, it was found few owned a house or car, only two were employed and most did not have functional English language skills (Sheikh-Mohammed *et al.* 2006). The study also found the refugees were disadvantaged by low literacy skills, financial handicap, language barriers, lack of transport, not knowing where to seek help, and poor health knowledge (Sheikh-Mohammed *et al.* 2006). These findings parallel the narratives of respondents in this study and highlight the barriers that can hinder adaptation to a new culture and climate, and increase the risk of poor heat-health outcomes in resettled refugees.

Language barriers have been identified as a key vulnerability factor. Other studies have shown that ethnic minority language groups can be vulnerable to extreme heat because of exclusion from access to English-based media weather reports and information from authorities aimed to increase awareness and reduce the impact of excessive heat (McGeehin *et al.* 2001; McGregor *et al.* 2007). This can lead to a lower uptake of adaptive behaviour messages (Uejio *et al.* 2011) and hence increased vulnerability. The language barriers not only apply to the recently arrived but also for ageing first generation migrants who may become nostalgic about their primary culture later in life and can revert to their first language (Schmid *et al.* 2009). This can lead to social and linguistic isolation and dependence on family members. Recently resettled older people from non-English speaking countries find it particularly difficult to learn another language and some may have communication problems even within the family.

Housing characteristics can contribute to vulnerability (Ebi 2012; Maller *et al.* 2011) and it has been recognised that improvements to housing design and housing infrastructures are needed to reduce the health impacts of high temperatures in domestic settings (Kovats *et al.* 2008; Maller *et al.* 2011). Poor quality housing was often cited in our study as being a contributing factor to people's difficulty coping with extreme heat. Old or poorly designed homes lacking cooling systems can be oppressively hot for those who lack the means to go somewhere cooler. Studies have shown that housing is more protective against cold than heat (Scovronick *et al.* 2012) and that thermal insulation can be protective (Vandentorren *et al.* 2006). However, insulation is often lacking in rental homes occupied by migrants. Additionally, there can be a link between location of residence and vulnerability to heat. A U.S. study conducted in Phoenix showed that ethnic minority groups are reportedly more likely to

reside in warmer areas of the city where there is a greater risk of heat stress (Harlan *et al.* 2006). Similarly, in an Australian study of spatial vulnerability, ethnicity was found to feature strongly as a risk factor for heat-related adverse health outcomes particularly in the cities of Perth, Melbourne and Adelaide (Loughnan *et al.* 2013).

Some respondents mentioned issues concerning occupational exposures for those working on farms or in factories. A high proportion of migrant workers are employed in the agricultural and forestry industries in the U.S. (Arcury *et al.* 2010) where the heat-related death rates for crop workers is almost 20 times higher than for civilian workers (MMWR 2008). In Australia, higher rates of work-related injuries and fatalities are reported amongst migrant workers compared to Australian-born workers, with language barriers and poor understanding of safety information being contributing factors. In rural and mining occupations in particular (where heat exposure may occur) fatality rates are reported to be significantly higher for migrant workers (Anikeeva *et al.* 2010).

# 4.2 City-specific issues

High temperatures have been shown to have effects on mortality and morbidity in Adelaide (Nitschke et al. 2007; Nitschke et al. 2011), Melbourne (Department of Human Services 2009; Loughnan et al. 2010) and Sydney (Vaneckova, Beggs, et al. 2008: Vaneckova, Hart. et al. 2008). In the present study, respondents in Adelaide and Melbourne commonly spoke of the heat being 'different' but this was not evident in narratives from Sydney. These claims are supported by climate statistics that show that humidity in Adelaide and Melbourne is lowest during the summer months, whereas humidity in Sydney is highest in summer and lowest during the months of July to September. Additionally, as shown in Table 1, Sydney has a mean annual rainfall of 1213.3 mm compared to 650.0 mm in Melbourne and just 546.8 mm in Adelaide (Bureau of Meteorology 2012). Adelaide also has higher temperatures during summer (Table 1) and hence it not surprising that the city's uniquely hot and dry summer presents difficulties for those from more tropical locales. People are physiologically and behaviourally acclimatised to the climates in their homeland and this can influence their risk in an unfamiliar environment (Knowlton et al. 2009; Kovats et al. 2008). It follows that newly arrived migrants (including those from hot countries) may struggle to cope during extended periods of extremely hot and dry summer weather in south-eastern Australia.

Turning on home air conditioners, and using air conditioned cars to drive to cooler places as practiced by most Australian-born families (Banwell *et al.* 2012) are options simply unavailable to people who are financially disadvantaged including those in CALD communities. We found 'power costs' to be a theme common to Adelaide (where it was mentioned in all narratives) and Sydney, but to a lesser extent in Melbourne where, due to the lower penetration of air conditioning, the issue of high power bills did not arise to the same extent. According to a 2012 report to the Energy Users Association of Australia "out of 91 comparator countries, states or provinces, household electricity prices in four Australian jurisdictions in 2011 were in the top six" (Mountain 2012). South Australia ranked third behind Denmark and Germany followed by New South Wales and Victoria. Ironically, Adelaide's high electricity prices are reportedly due to the high power demand caused by air conditioner usage during hot weather (ABC News 2012). Not unexpectedly, there was considerable discussion in this study about ways to increase affordability of electricity.

Finally, to our knowledge, New South Wales does not have an Extreme Heat Plan incorporating heatwave warnings, unlike South Australia and Victoria (Department of Health 2009; South Australian State Emergency Service 2010). Additionally, Sydney respondents spoke of the association between hot weather and a gambling

environment with community members frequenting the many clubs which provide a cooled space for respite from the heat.

# 4.3 Recommendations

Simple harm minimisation behaviours can mitigate the health threat posed by extreme heat, but these are not necessarily intuitive, particularly to those who have not long resided in Australia. This supports the recommendation by participants in this study who have strongly voiced the need for information to be available to migrants. Excellent programs run by local governments and NGOs are currently in place and these should continue with adequate funding to increase awareness about the health risks of heat exposure, including dehydration, and inform about behaviours that will minimise the risk of harm in the heat. Importantly, information needs to be targeted to the needs of specific groups and three-pronged in its approach i.e.:

- On (or prior to) arrival in Australia
- Multi-lingual warnings during heat emergencies
- Community education programs about climate risks associated with climate change, including extreme heat

There was much discussion at the Extreme Heat and CALD Communities Workshop and during interviews regarding the format, timing and methods of dissemination of messages. A number of approaches were suggested including bi-cultural community engagement; translated fact sheets using simple terminology; utilising the print and electronic media, and reaching families through religious leaders or messages via schoolchildren. Relaying health information in CALD communities requires a coordinated approach to dissemination processes and an emphasis on interpersonal communication. Importantly, the community's circumstances and needs must be taken into consideration (Boughtwood *et al.* 2012).

The key suggestions emanating from the Workshop included:

- Establish a leadership group
- Learn from others regarding communication with CALD communities
- Use of new and innovative methods of engagement
- Develop a standardised coordinated communication plan
- Engage with experts to tailor messages
- Explore and secure funding opportunities
- Undertake further research and evaluate the effectiveness of communication

Using cooling devices is highly protective during extreme heat (O'Neill et al. 2005; Vandentorren et al. 2006), however usage is expensive. With rising power prices, low or no cost adaptation measures and smarter technologies need to be considered and promoted not only for migrants, but in the broader community. This will also be of benefit to those with cooling systems as the high demands that "energy-hungry" air conditioners place on electricity supplies at peak times increases the risk of power outages during heatwaves (Johnston 2012). Notably, relying solely on air conditioning places vulnerable householders at increased risk of heat stress in the event of power outages (Maller et al. 2011). This risk will be multiplied as the need for a cooled home environment increases with higher outdoor temperatures. Maller and Strengers (2011) claim that air-conditioning is a short-sighted and energy intensive option that is contributing to climate change, and indeed environmental concerns over the use of air conditioning were raised in this study. More research needs to be undertaken into alternative adaptation strategies such as passive cooling options and practical information about ways to reduce the risk of heat stress (Maller et al. 2011). There is growing need for populations to be aware of practical heat adaptive behaviours that do not rely on access to electricity and this information needs to be available to newly arrived migrants and recently resettled humanitarian entrants, especially those unfamiliar with extreme heat.

Fundamentally, migrants adapt well to Australian society and adaptation to extreme heat and climate change will be assisted by breaking down the barriers relating to cultural factors, health issues, poor housing, and language barriers. Once again, this would be partly addressed by having information more readily available to those whose first language is not English. Addressing the problems associated with poor housing stock for migrants and refugees requires longer term measures and moves towards sustainable building designs. In the shorter term, the interplay between cultural factors and health issues may be assisted with heat-health promotion messages that address culturally based maladaptive behaviours and beliefs. As argued by Luckett et al (2005) "a better understanding between culture and health may enable public health programs and clinical services to be more sensitive to community needs" (Luckett *et al.* 2005).

As well as those already mentioned, stakeholders had a range of other suggestions for heatwave management strategies in the face climate change. These included more funding being made available for multi-lingual resources and community engagement programs, having areas such as safety houses where CALD people can go during the heat, sheltered bus stops with drinking water, improving cultural competence in health services and local agencies, and encouraging both stronger partnerships between local government and community organisations and social connection. Adaptation involving community engagement was seen as important and has been identified previously as a means of bolstering a community's resilience to climate stressors (Ebi *et al.* 2008).

Finally, it is recommend that the divisive notion of "otherness" which was alluded to on occasions during data collection should be avoided in discourses about sectors of the population. Additionally, an unintended inference of vulnerability or attenuated capacity may offend. Ultimately, a whole of population approach to climate change adaptation is required with efforts made to reduce inequalities. It is therefore important that adaptation plans are inclusive of residents whose first language is not English and/or whose cultural backgrounds differ from that of the Anglo majority. As philosophically noted by one overseas-born respondent, climate change affects whole populations – if the boat sinks, we all sink.

# 4.4 Limitations

This study has several limitations including a relatively small sample size in three study locations. Furthermore, there were an unequal number of participants in each city, with only few in Melbourne and Sydney. This was due to a low response rate from potential stakeholders to requests for interviews, and the short window of time for interviews to align with visits to these cities. Consequently, issues require further exploration in Melbourne and Sydney and for this reason caution should be exercised when drawing comparisons between findings in these cities and those of Adelaide. Additionally, only city dwelling CALD communities were targeted. Some regional and remote areas of Australia may experience greater climate risks than cities, and residents may have less access to health services. However, evidence shows migrants in these areas generally have a higher level of education than the Australian born residents, are not socioeconomically disadvantaged, and are more likely to speak English than those in urban areas. Furthermore, 82% of the overseas-born population reside in capital cities (Australian Bureau of Statistics 2012b) and most new arrivals settle in large urban centres (Massey et al. 2012). Nevertheless, further research should be undertaken to explore climate change adaptation in overseas-born people in rural and remote

Australia, particularly with the recent introduction of regional migration incentive schemes (Massey *et al.* 2012).

As is often the case, the recruitment process may have resulted in a bias in perspectives if only people who felt extreme heat to be a problem in CALD communities took part in the study. Hence, we may be portraying dominant attitudes which reflect problems that exist in only a small proportion of migrants and refugees. This would nevertheless mirror the small vulnerable sector within the Australian born population and the minority who become health statistics during heatwaves. Notwithstanding, this research is not intended to be quantitative and does not lie within a positivist paradigm, but is rather a qualitative inquiry allowing voices and opinions of those concerned about this issue to be heard (Liamputtong 2010).

With relatively few interviews at grassroots level it could be argued that we used a 'top down' rather than participatory approach. However, our classification of community members and stakeholders were not mutually exclusive groups and respondents in service provider roles were often migrants or of migrant descent. This work may be viewed as a scoping study which has shown that foreignness may augment existing vulnerability and that further engagement with community members is necessary to discuss adaptation measures.

Qualitative data analysis is subjective and open to interpretation. Major themes from interview/focus group data were categorised based on the judgement of a single researcher, whilst the thematic analysis of data from the Workshop was jointly analysed with the Workshop facilitator. Furthermore, the analytical approach was mixed. The framework approach was considered to be particularly relevant to the sector of the data dealing with vulnerability, and elsewhere thematic analysis was used. Although this may have led to some inconsistencies in the presentation of findings, we believe the transparency and rigour of the research has been enhanced rather than compromised.

# 4.5 Conclusion

Using a qualitative approach in combination with a workshop, we engaged with stakeholders to explore issues around adaptation to extreme heat and climate change in CALD communities in three Australian cities. Findings have shown that for sociocultural reasons some within the communities do not cope well with extreme heat in Australia, rendering them at risk of adverse health impacts during heatwaves. We found factors that may confer vulnerability include increasing age, poor health, socioeconomic disadvantage, low quality rental housing and limited access to air conditioning. Risk in the vulnerable within migrant and refugee communities can be compounded by language barriers, cultural factors and lack of acclimatisation to local environmental conditions. Persons at risk include low income migrants with poor English proficiency skills, new arrivals, people in new and emerging communities, and older migrants. Those with the weakest connections with services and official agencies are likely to be amongst the most at risk.

Our findings have shown that at present there are unmet needs of people in CALD communities in terms of knowledge about harm minimisation strategies during extreme heat. Heat-health promotion strategies for people in new and emerging communities and emergency messages in multiple languages are measures which may help bolster adaptive capacity.

In future years Australia can expect an increase in average temperatures of 0.6 to 1.5°C by 2030 and up to 5.0°C by 2070, with an increase in hot days, heatwaves and

other climate risks (CSIRO 2012). Indeed, an Australian study using data from 1950 to 2011 has confirmed that an increase in warm spell intensity, frequency and duration has already occurred over the period 1950 to 2011 (Perkins *et al.* 2012). Moreover, migrant numbers will increase and first generation migrants will become part of Australia's growing ageing population.

As defined by Spickett *et al.*, vulnerability to climate change is a function of exposure, sensitivity to change and adaptive capacity (Spickett *et al.* 2011). With equal exposure to climate risks and high adaptive capacity, people of CALD backgrounds in Australia will only be more vulnerable to climate change if sensitivity is compromised by inequality. Therefore, to effectively facilitate adaptation to a changing climate in the wider population there needs to be equity in access for all to resources that can aid in building resilience to future climate risks. This will require a suite of communication tools to cater for the growing number of residents with diverse cultural, linguistic and religious backgrounds. Additionally, coordinated community action towards achieving adaptation will require an increase in social capital (Ebi *et al.* 2008) and cultural connectedness in populations as they collectively face climate change, the biggest "health threat of the 21<sup>st</sup> century" (Costello *et al.* 2009).

# 5. GAPS AND FUTURE RESEARCH DIRECTIONS

To our knowledge, this is the first Australian study which specifically focuses on adaptation to extreme heat and climate change in CALD subpopulations. This gap in knowledge has been addressed only partially by this study and much remains unexplored. As mentioned, a limitation of the present study is the relatively small sample size, particularly in Melbourne and Sydney where there are large migrant populations (Table 1). Given population projections and future trajectories of temperature and humidity, research needs to continue to engage a wider sector of the CALD community in discourse about extreme heat exposure and climate change adaptation.

This study may be seen as the first of several stages required to address adaptation in a diverse population. It has been identified that certain barriers exist for sectors of the migrant community, that there are unmet needs, and that knowledge transfer may assist in increasing resilience to climate risks. There will not be a 'one size fits all', model to provide information in a manner that is targeted and culturally appropriate to different communities. Hence, participatory research needs to be undertaken involving consultation and engagement with people in the communities. This research could lead to the production of resources that could be used by educators in communities, settlement services, local government and NGOs. The efficacy of these resources however, would need to be evaluated in a subsequent research study to ascertain the penetration and effectiveness of interventions and communication models.

Moreover, it is evident from the study findings that information is required on several levels - one of which involves risk communication during extreme heat and other climate emergencies. Disseminating messages in English only, renders the non-English speaking sector of the community at an unacceptably greater risk from the impending threat. However, ensuring equity in access to hazard messages remains a challenge which demands further consideration in a society that is becoming increasingly multicultural. More collaborative research therefore needs to be undertaken involving the public health and emergency services sectors in consultation with communities at the grassroots level to address language barriers in emergency management.

The psychological and physiological effect of rising electricity prices on people experiencing socioeconomic disadvantage, including those of ethnic backgrounds, needs to be investigated. The production of evidence based research that shows a link between financial barriers to air conditioner use and heat stress would alert regulators to the potential health implications associated with rising electricity prices and perhaps prompt action to alleviate problems for vulnerable consumers.

This study has identified vulnerable subgroups within CALD communities including people at the extremes of age. More research needs to be undertaken to reduce cultural barriers and heat-susceptibility in these groups. Whilst barriers to adaptation have been recognised in older non-English speaking people (Hansen *et al.* 2011), there has been very little research undertaken on the susceptibility of the very young. The extent of heat-health knowledge of parents, particularly those in recently resettled families, remains to be explored (Banwell *et al.* 2012).

Engaging stakeholders in climate change adaptation processes is essential for the successful formulation and implementation of policies to mitigate risks (Akompab *et al.* 2012). This study has evolved as a form of translational research as the leadership group formed as an outcome of the Workshop has become the 'Extreme Heat and CALD Communities Working Group'. This group reports to a committee comprising South Australian leaders in state Emergency Management. One of the strengths and co-benefits of this research is the transferability of knowledge about vulnerability to other climate-related crises and emergencies. The study has been successful in increasing awareness of the need for socially inclusive disaster and emergency management messages. Future research will continue in this area with funding secured from the federal and state government's Natural Disaster Resilience Grant Scheme.

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# **APPENDIX 1**



### INFORMATION SHEET



### EXTREME HEAT AND CLIMATE CHANGE: ADAPTATION IN CULTURALLY AND LINGUISTICALLY DIVERSE (CALD) COMMUNITIES

### Purpose of the study

This study aims to investigate the effects of very hot weather on the wellbeing of migrants in Adelaide, Melbourne and Sydney. As heatwaves may become more frequent in the future it is important that we address the impact on potentially vulnerable groups. By doing this research we will attempt to identify any barriers to climate change adaptation that may be addressed with policy interventions. As part of this process we would like to consider the views and experiences of key stakeholders including migrants.

### Who is conducting the study?

The study is funded by the National Climate Change Adaptation Research Facility (<u>http://www.nccarf.edu.au</u>) and is being conducted jointly by investigators at The University of Adelaide, Monash University, The University of Sydney and the South Australian Department of Health. The chief investigators in the study are listed over the page.

### What will your participation involve?

If you would like to contribute to this research it would simply involve your participation in a focus group discussion. We anticipate that this will take approximately one hour of your time. During the discussion we will ask questions about your (or your organisation's) experiences of how CALD persons cope during periods of extreme heat and potential barriers to climate change adaptation. A convenient time and place for the discussion or interview will be arranged with you. We are happy to reimburse any travel costs incurred.

With your permission the interview will be recorded and transcribed for analysis. We will ask you to sign a consent form before the session begins. You may review the transcript afterwards if you wish. Participation is completely voluntary and you may withdraw from the study at any time without reason. Please note the project may not be of any direct benefit to you or your organisation.

### Confidentiality

Recorded interviews and details of participants will be strictly confidential and only the researchers and a professional transcriber will have access to information collected. Findings of this study may be published as a report or in journals but individual participants will not be identifiable.

### What if I have a complaint or any concerns?

If you wish to raise concerns about the conduct of the project with an independent person or discuss matters related to the University policy on research involving human participants or your rights as a participant, contact:

The Human Research Ethics Committee's Secretary, *Ph*: 08 8303 6028 or visit: <u>http://www.adelaide.edu.au/ethics/human/guidelines/applications/#complaint</u>.

### For further information:

Thank you for interest and possible involvement with this study. If you have any queries about the research, please contact the Chief Investigator: Professor Peng Bi, Discipline of Public Health, University of Adelaide; *Ph*: (08) 8303 3583; *Email*: <u>peng.bi@adelaide.edu.au</u>, or the Research Associate, Dr Alana Hansen; *Ph*: (08) 8313 1043; *Email*: <u>alana.hansen@adelaide.edu.au</u>.

The investigators in the project are:

Professor Peng Bi Discipline of Public Health The University of Adelaide peng.bi@adelaide.edu.au ph. 8303 3583

Dr Monika Nitschke SA Department of Health monika.nitschke@health.sa.gov.au

Dr Jillian Benson Discipline of General Practice The University of Adelaide jill.benson@adelaide.edu.au

Ms Val Smyth SA Department of Health val.smyth@health.sa.gov.au

Dr Leigh Wilson Faculty of Health Sciences The University of Sydney leigh.wilson@sydney.edu.au Dr Alana Hansen Discipline of Public Health The University of Adelaide alana.hansen@adelaide.edu.au ph. 8313 1043

Dr Arthur Saniotis Discipline of Public Health The University of Adelaide arthur.saniotis@adelaide.edu.au

Dr Yan Tan Geography, Environment and Population The University of Adelaide yan.tan.@adelaide.edu.au

Assoc Prof Gil-Soo Han School of English, Communications and Performance Studies Monash University gil-soo.han@monash.edu.au

Please keep this information for your reference.

# **APPENDIX 2**





# EXTREME HEAT AND CLIMATE CHANGE: ADAPTATION IN CULTURALLY AND LINGUISTICALLY DIVERSE (CALD) COMMUNITIES

### **INTERVIEW TOPIC GUIDE**

- 1. From your experience, how have you found people in various CALD communities **cope and adapt during periods of extreme heat in summer**, and if there are any particular difficulties they may have? What sort of effect for example, does it have on their health and wellbeing?
- 2. What **factors contribute to vulnerability** to heat and its effects on health in CALD communities (e.g. ethnicity, language, age, financial concerns, housing, different climate etc)?
- 3. What sort of **things do people** in the communities commonly **do to keep cool** (e.g. use of air conditioning or fans, closing curtains, dressing differently, drinking more fluids)? What do you think are the **barriers** (if any) facing migrants and refugees in particularly, when trying to keep cool?
- 4. Heat-health warnings have been issued during recent heatwaves. What sorts of issues (if any) have you identified for CALD community members, particularly those of non-English speaking backgrounds, in accessing these messages?
- 5. What sort of specific **plans/strategies** do you know of that are in place to ensure CALD populations know about the potential health effects of extreme heat?
- 6. What role do family and social networks play in supporting people during heatwaves?
- 7. Scientists predict that over time the climate may change and that global warming may mean heatwaves might occur more frequently. In your opinion **do you think people in CALD communities will be** particularly **vulnerable** to climate change? If yes, why?
- 8. Climate change adaptation refers to adjustments in response to a changing climate, or its effects. This may include for example, changes in behaviours or to the home environment. If summers were to become warmer, what sorts of issues do you see arising that may hinder adaptation to climate change in CALD communities?
- 9. In your opinion, what sort of assistance could be provided to migrants, refugees, and CALD communities in general, to keep them adequately informed about what to do to keep safe and well during extreme heat, and to assist adaptation to climate change?

# **APPENDIX 3**



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This interim report is published by The University of Adelaide and has not been peer-reviewed by the National Climate Change Adaptation Research Facility (NCCARF). NCCARF will arrange for peer-review and publication of the project final report and make it available at <u>www.nccarf.edu.au</u>.

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The role of NCCARF is to lead the research community in a national interdisciplinary effort to generate the information needed by decision-makers in government, business and in vulnerable sectors and communities to manage the risk of climate change impacts.

# TABLE OF CONTENTS

EXECUTIVE SUMMARY 4				
1.	PANEL DISCUSSION			
1.1	Summary of panel discussion	5		
2.	GROUP TASKS	6		
2.1	Group Task 1	6		
2.1.1	Table 1	6		
2.1.2	Table 2	7		
2.1.3	Table 3	9		
2.1.4	Table 4	10		
2.1.5	Table 5	11		
2.1.6	Table 6	12		
2.1.7	Table 7	13		
2.2	Group Task 2	14		
2.2.1	Older migrants	14		
2.2.1.1	Table 2	14		
2.2.1.2	Table 3	15		
2.2.2	New and emerging communities	16		
2.2.2.1	Table 4	16		
2.2.2.2	Table 5	18		
2.2.3	New arrivals	19		
2.2.3.1	Table 6	19		
2.2.3.2	Table 7	20		
2.3	CONCLUSION	21		
APPENDIX 1 2				
APPENDIX 2				

# EXECUTIVE SUMMARY

The 'Extreme Heat and Climate Change: Adaptation in CALD Communities' study, funded by the National Climate Change Adaptation Research Facility, has been undertaken by the Discipline of Public Health at the University of Adelaide in conjunction with partners at SA Health, Monash University and the University of Sydney.

A Workshop was held at the University of Adelaide on 29 October 2012 with the aim of reporting to stakeholders and end-users the major findings of the study and to seek input for recommendations. Fifty seven people attended the workshop from a range of organisations, local councils, government departments and academic institutions.

The Hon. Jennifer Rankine, Minister for Multicultural Affairs, Minister for Emergency Services, Minister for Police, Minister for Corrections, and Minister for Road Safety opened the proceedings. The program (Appendix 1) comprised presentations, a panel discussion and two group activities. During the final session the key points and recommendations were summarised (Box 1).

### Box 1: Summary from Workshop

# KEY POINTS AND SUGGESTIONS Establish a leadership group that includes groups at the coalface. Learn from other states and agencies who communicate with CALD communities. Engagement with CALD communities using new and innovative methods of engagement. A standardised coordinated communication plan, possibly packaged with other emergency messages. Engage experts to tailor theoretical messages using different approaches such as visual, pictorial, auditory. Explore and secure funding opportunities to support and implement recommendations. Further research to explore issues and evaluate the effectiveness of the communication.

# 1. PANEL DISCUSSION

At the conclusion of the presentations in the morning session a panel discussion was held so the audience could ask questions of the speakers and interstate experts:

Dr Lillian Mwanri (Flinders University) Ms Val Smyth (SA Health) Ms Lynette Pugh (Domiciliary Care, Department for Communities and Social Inclusion) Dr Leigh Wilson (University of Sydney) Assoc Prof Gil-Soo Han (Monash University)

# 1.1 Summary of panel discussion

This question and answer session raised some interesting points and discussion topics. These included:

- How is it possible to identify at-risk people in CALD communities?
- Private housing is a big problem as the quality cannot be checked.
- Heat events should be closely connected with bushfire advice. These two emergencies could be presented together.
- In North-West Adelaide there are many CALD workers in the construction industry who may not be informed about the dangers of extreme heat. As most of the industries are small they may not be able to let workers leave when it is hot and workers themselves may be unwilling to lose wages.
- It was mentioned that the State Emergency Service has held 9 heat risk assessment meetings with community stakeholders in 12 regions of SA. Issues affecting CALD communities were not discussed at the meetings.
- It was noted that often older people do not see themselves as being at risk during extreme heat.
- The question was asked whether we could learn from other hazards in relation to the CALD community.
- It was mentioned that it will be necessary to find out what it takes to move people into the phase of engagement with the issue and how that competes with other issues.
- Communication about heat risks would be best during or after a heatwave.
- It was noted how well agencies and government departments work together in South Australia compared with those interstate.

# 2. GROUP TASKS

Two group tasks were scheduled to investigate and seek recommendations for short and long term for risk communication strategies in CALD communities. A scribe was present at each table to take a record of the proceedings (Appendix 2), and a spokesperson summarised the table's discussion for the audience. A condensed account of recommendations and key points from each table is presented below.

# 2.1 Group Task 1

There were seven tables of attendees for group task 1 (Box 2) which focussed on emergency management and the dissemination of heat-health warnings to people in CALD communities.

### Box 2: Group Task 1

# Scenario Next week there will be an extreme heatwave with temperatures over 40 degrees C expected for at least 5 consecutive days. • What policies/procedures could be in place to strengthen and build on existing strategies to ensure people in CALD communities will have access to the extreme heat warnings?

• What needs to be done during the heatwave to minimise the risk of health impacts in people from migrant and refugee backgrounds and non-English speaking people?

For example:

- What works and what could be improved?
- How should messages be disseminated?
- What are the barriers?

# 2.1.1 Table 1

The main points discussed at Table 1 during the first group task were:

- Access to the communities in question was perceived to be difficult and as yet nobody has explored the connections in relation to emergency issues.
- It was suggested that links to communities should be established. A nodal system should be identified through which messages can be distributed.
- Community wide acceptance and integration of the CALD communities will in the long run assist the knowledge transfer, but it is important that a deep understanding of the emergency messages develops in the general community. It is not clear whether this is the case.

- Contact points for knowledge transfer were identified:
  - \* Neighbourhood Watch
  - \* Aged Care through Department of Health and Ageing (federal)
  - \* Local radio up to 39 languages
  - \* Chinese Community networks and radio, press, websites
  - \* NGO's community/cultural centres (e.g. Vietnamese), Meals on Wheels
  - \* RDNS
  - Ethnic food-related businesses or pharmacies could be useful for information transfer. Ethnic food markets/shops could be located through PIRSA or the food section at SA Health
  - \* Local government campaigns
  - \* Interpreters who work with communities should be involved in key message transfer
  - \* Newsletters for CALD communities early in the season with a follow up after a heatwave
- Messages for CALD communities would have to be prepared well in advance of events. Key messages would be required, rather than detailed information.
- How could social support services get involved? How could they assist in providing cooling and respite?
- Are there things we can glean from other campaigns such as *Wash, Wipe, Cover* or *Slip, Slop, Slap*? Children may be able to take up these messages in schools and transfer them home. Youth ambassadors could also get involved.
- TV-advertisements could use CALD communities rather than the general white community.
- We have to do more research in how to actually get the messages across to the CALD communities. In amongst all the issues going on, heat-related messages may not be at the forefront. How can the messages link into other messages?
- There was the suggestion that a peak body should organise the emergency response to CALD communities and that this peak body should have funding to assist peak NGO's.

# 2.1.2 Table 2

The main points discussed at Table 2 during the first group task were:

Strengths- what works?

- One to one contact dissemination of information with clients and heatwave strategies/issues are part of this method of communication. This method is successful in identifying clients at risk.
- It is core for the agencies/organisations to encourage communications at the individual level.

- Last year, flyers (listing calculated electricity costs for home appliances) were sent out to households to highlight expenditures and therefore assist people to make best practise decisions during a heat event (there is no money for flyers this year).
- The agency with credibility prioritises getting the message out.
- Elderly clients, CALD, and those with disabilities are targeted to have group speakers available to them, and share information in a supportive/friendly environment.
- Client follow-up (using whatever method is appropriate) is essential and is a way of assessing effectiveness of a program/project/message.
- Ethnic Radio is effective and well used by some community groups.

<u>Weaknesses/Threats- what is not happening?</u> (This was specific to those at the table and not mentioned in the shared workshop discussion)

- All the organisations/agencies are financially constrained (although some practices can change for the better and do not require extra funding).
- Many people are not captured because they are not referred to the agency.
- The agency personnel may themselves not be informed of best practice behaviours during extreme heat and require professional development, as many personnel are new to Australia and do not understand the environmental complexities.

### What must we do to improve the situation?

- Comparisons were made with a European winter and what would need to be done in a reverse climatic situation.
- Capture all sub-groups who fall through the cracks e.g. when people shift, grow old, leave school, when a family member dies; or people who suffer from mental health, or become sick. These sub-groups often present to hospital/police – how can we capture them?
- Re-introduce best practice into the school curriculum (as per the 1950's/60's when "Health and Hygiene" was taught).
- Have mandatory professional development training workshops for organisations/agency staff. These could be free to participants and similar to the basic First Aid courses.
- Have a Standard Communication (and messages) Plan in place for the State.
- Public messages must be continued for much longer as issues arise well after the hot days have passed.
- It must be standard practice for all new arrivals to Australia (not only SA) to 'get the message'/have access to information regarding extreme heat.

• Billboards could be used as they are a successful visual means of communication that is effective in less literate communities around the world.

# 2.1.3 Table 3

In the knowledge that there is a dissonance between messages and perception of risk, the Table 3 group members discussed the following:

- In what ways do people access information, and which are the best methods to use?
- Information should be targeted to appropriate media that is common to multiple users.
- Key community service providers should be used to disseminate messages:
  - \* In their own language
  - \* Not using 'catchy phrases' which may be meaningless
  - \* In Seniors Clubs and through GPs
  - \* Using visuals appropriate to the community
- Ethnic Radio should be used this can be a lifeline for multicultural groups. Talkback segments on Ethnic Radio could add credibility to the message. SBS and local radio could also be used.
- Language-specific newspapers should be used.
- Settlement NGOs should have some form of orientation pack of information.
- Messages need to be early (upon arrival), and timely (in summer).
- Migrants should be involved in the process of message dissemination how can we best assist them?
- Watch out for others in the community, care for relatives and friends. The use of a 'telephone tree' was suggested.
- Finances and resources are a barrier.
- Social networking can be used; from younger generation upwards.
- Volunteers and support workers have a role in education.
- Target the second generation to educate and inform.
- We need to make sure people do not 'fall through the cracks'.
- How do we prevent complacency? If we provide these messages and no event occurs, does this run the risk of making people complacent?

### 2.1.4 Table 4

The discussion from Table 4 appears below.

- The current situation is that "watch" and "warnings" are issued by the Bureau of Meteorology and are fed out of SES and SA Health. There is currently no capacity for these to be in any language other than English.
- Information is not currently sent to Ethnic Radio.
- A heat "watch" is when the temperature is above 29°C. The alert goes only to government agencies and NGO's (not the public). Previously there were so many "watches" that it became a "cry wolf" situation. The "Extreme Heat Warnings" go out to the public when the average of night and day temperatures is 32°C for 3 days.
- There is also a problem for the hearing and visually impaired if warnings go out via TV or radio. A more mainstream approach is needed.
- To broaden the approach, should we make community organisations a part of the early warning system? Once community organisations get a warning, how will they disseminate it?
- We need to raise the awareness of communities, especially for new arrivals and people with co-morbidities. This is the initial step.
- During an Extreme Heat watch there could be liaison with community organisations that could disseminate information into their communities by word of mouth. The right people to initiate this need to be identified.
- The community organisations have a limited capacity and currently, extreme heat and climate change are not issues.
- There could be 3 or 4 behaviours chosen that could save people e.g.:
  - Use air conditioning (but many new arrivals may not have it)
  - Find a library or cool building (but no use if you don't have transport and have 7 children).
- New arrivals often live on the periphery of the city so have less access to services etc.
- There are many community organisations, how do we choose who to inform? Perhaps the key organisations (e.g. churches) could be chosen and 2 or 3 others.
- The messages MUST be simple as many suggestions will be new to people.
- There needs to be caution around the "cry wolf" problem.
- What medium should be used?
  - Social networking young people can tell their parents

- \* Emails for English speakers
- \* A mixed approach through community organisations
- \* Target specific community events to raise awareness
- Would adaptation of the Telecross REDi program be useful? The State Emergency Centre/State Recovery Centre could perhaps be used. Community organisations could be asked to compile lists of vulnerable people and then ask volunteers to come into the SEC and ring the vulnerable members of their community. A similar process has occurred previously in the Greek, Italian and Polish communities.
- Another option is to ask 10 influential people in their community to ring others who could ring others i.e. tap into the very strong informal networks.
- Practical advice is needed similar to the extreme thunderstorm warning that has 5 key action points.
- Multicultural SA and the Multicultural Communities Council has a list of key ethnic communities. The African Communities Council is an umbrella organisation for 42 smaller organisations.
- Could also make sure that when reports go out through the mainstream media, they mention that ethnic communities also need to be aware.
- Families SA could also be used to disseminate information.
- Can warnings go out earlier than a week beforehand to allow time to contact the communities?
- Need to get people from CALD communities to attend the pre-season meetings re Extreme Heat. It is important that people are prepared as opposed to an emergency response.
- A whole of community CALD communication strategy is important. The needs of specific communities can then be addressed.

# 2.1.5 Table 5

The main points discussed at Table 5 included:

- Preparatory work is required, not just doing more of the same.
- Building connections between CALD communities and emergency services is important.
- People don't have to wait for support enable people to take the initiative and help them to plan ahead.
- Understand language barriers.
- New arrivals don't know they can ask for assistance i.e. they don't have an 'expectation' of support.

- A 'cheat sheet' that provides directions on what to do in a heat wave could be formulated in different languages.
- Religious and cultural leaders could be utilised to build trust between CALD communities and agencies.
- Consider how obvious heat warnings are to the community. What are the communication strategies? Are they on TV?
- Employ a range of methods to reach a broad range of individuals.
- Increase communication, including the use of sub-titles on TV.

# 2.1.6 Table 6

A summary of the discussion at Table 6 for the first task included:

- Ethnic Radio is a good option for preparedness messages, but any particular cultural group may have only 30 minutes air time per week, and heat will be competing with many other issues for this time slot. Depending on the timing this avenue may not be optimal for heatwave alerts.
- Some older CALD people do not like speaking on phones.
- Information sources are usually family members or via groups; seniors groups are active; there is a lot of networking throughout many CALD groups.
- Group leaders could play a vital role, it is important to inform them of the importance of this issue.
- While schools do a lot of work providing information, children don't always transfer this to parents.
- The internet is not accessed universally among CALD communities, but messages can be disseminated further by word of mouth.
- CALD community support groups (NGOs) have contact numbers for many clients and some carers/emergency contacts. They could be used to contact these people during heatwaves. They may not appear on other vulnerable lists.
- SMS messages from emergency services could be useful because even if not English speaking, relatives and friends can translate and disseminate the messages by word of mouth. It would be valuable to inform new arrivals that this system is in place to provide emergency messages.
- Neighbourhood watch groups could play a role.

# 2.1.6 Table 7

The Table 7 discussion is summarised below:

- Engagement with children to act on behalf of migrant family members could be an option. However, there could be sensitivities around engaging with older people through younger people.
- Communication needs to be focused on 'touchpoints'.
- Response to a specific issue is needed to build resilience. Different cultures have different definitions of resilience.
- Insurance companies could consider providing policies for extreme heat. This could involve private sector participation to develop an insurance product.
- Heat Line only uses English, but it needs to be multi-lingual.
- Vulnerable people include women with children, particularly those who are illiterate. Social connectedness is important especially for women.
- Resilience may have more immediacy in one culture than another.
- How do we challenge peoples' perceptions, e.g. the need to need to *slip, slop, slap*?
- People need immediacy.
- People need to relate to heat wave literature which is packaged to a specific community.
- Some cultures are more graphic than others, whereas others are more literal or aural. Heatwave messaging should consider these differences.
- Agencies need to re-assess assumed knowledge.
- Need more informative messages for communities and messaging needs to be more diverse.
- We need to challenge maladaptive beliefs and attitudes in order to attain behaviour change.
- Increase the cultural competency of organisations to work with CALD groups.

# 2.2 Group Task 2

Group task 2 addressed the issue of adaptation strategies in the longer term. As some people had left at this stage, attendees on Table 1 merged with other tables to form a total of six tables. The tables focussed on three sub-sections of the CALD population: older migrants; new and emerging communities; and new arrivals.

# 2.2.1 Older migrants

The group task for Tables 2 and 3 addressed issues for older migrants as outlined in Box 3.

### Box 3: Group task 2 for Tables 2 and 3

The focus for this discussion is				
	OLDER PEOPLE in CALD communities			
1.	Recommend culturally appropriate means of encouraging preventive behaviours (e.g. air conditioner use, light clothing) in older migrants during extreme heat			
2.	2. Recommend ways to assist the socially and/or linguistically isolated in this group so they can receive assistance with short and long term adaptation			
For exar	nple:			
	How can this group be best identified?			
	<ul> <li>What type of messages would be most useful?</li> </ul>			
	<ul> <li>What adaptation strategies will help in the long term?</li> </ul>			

# 2.2.1.1 Table 2

The main points discussed at Table 2 for task 2 were:

- How can CALD older people best be identified? Focus on all those who fall through the cracks, and why this occurs.
  - Perhaps through existing processes, agencies and programs, e.g. RDNS, then pooled in a dedicated registry which could perhaps sit in an agency/organisation such as Migrant Health Services
  - Use a third party at the individual level, to get the message across by educating the community on getting to know your neighbours
  - Religious organisations could participate in contacting people (but many elderly have no religious affiliation)
  - Focus on all elderly
- A heatwave blueprint is mandatory for each service that comes in contact with the elderly.

• The family-member carers of their elderly relatives also require support and resources.

### Useful Messages

- Must cater for unique individual differences (and language nuances)
- The messages should incorporate the 8 multiple intelligences (i.e. linguistic, numerical, spatial etc) and be based on the 5 E's of the constructionist approach of presenting new information (i.e. Engage, Explore, Explain, Elaborate, Evaluate).
- Messages are seasonal; however they must extend for a longer period of time.
- After public broadcasting of messages, some of the public may complain that the severity of an event did not materialise.
- Who presents the message is very important: elderly/CALD place a lot of trust and respect in people/organisations that have authority and standing in the public eye.
- Use visuals, especially billboards.
- There must be funding available to evaluate the effectiveness of messages. How do we do this?

What low cost strategies will help for long term positive outcomes?

- Utilise the new generations who have embedded themselves in communities and use modern communication methods.
- Educate the younger generations. The grandchildren's knowledge could influence and impact on the grandparents.
- Identify respected community members to impart information.

# 2.2.1.2 Table 3

Table 3 also discussed preventive behaviours in older people:

- Central centres to provide 'cool care'.
- Establish a 'buddy system' for social contact. These people could monitor social contact/clothing/drinking of fluids/behaviour.
- Community leaders are integral to implementing messages because communities and cultures are very different.
- Do not lecture, explain in an appropriate way.
- 'Personal touch' good to hear messages from another community member
- Language is important, so use Seniors Clubs, Women's Clubs, Men's Groups and present information first hand.
- First, identify the message and then the desired outcome.
- CALD communities may never have experienced a heatwave in their homeland, therefore they may have little understanding of what to expect.

- Social networking meeting together in each other's (cool) houses can be encouraged.
- Housing industry collaboration is a positive step forward to improve house design.
- We need to find out "what is the greatest issue to the older person in the heat?".
- Many refuse to report they are at risk for fear of being "put into care" because they cannot cope or are at risk.

# 2.2.2 New and emerging communities

Group task 2 for Tables 4 and 5 focussed on new and emerging communities as outlined in Box 4.

### Box 4: Group task 2 for Tables 4 and 5

# The focus for this discussion is families in NEW AND EMERGING COMMUNITIES

- 1. Recommend culturally appropriate means of educating community members about heat in Australia and encouraging preventive behaviours
- 2. What can be done to assist longer term climate change adaptation in this group?

For example:

- What would be the best approach to community engagement and health promotion?
- What are the barriers?
- What low cost adaptation strategies will help in the long term

# 2.2.2.1 Table 4

The Table 4 discussion centred around new and emerging communities (NEC):

- Foreign tourists can also be at risk e.g. cycling in the heat, swimming.
- NEC are similar to new arrivals, refugees and asylum seekers and include African, Afghani, Nepalese, Bhutanese. They may not have the skills and language of other migrants. Skilled migrants are also a common group.
- People from war torn countries (Africa, the Middle East) are not well informed and may be hesitant to raise the issue of better living conditions. Closer relations/rapport should be developed to ascertain their needs. We need to have better knowledge of the communities and their living conditions.

- The Australian media often present NEC negatively and this leads to further isolation.
- Many people in the African community are quite well connected family, friends community members etc.
- If we can link NEC into the mainstream they will be better able to become self sufficient. The non-English speaking are totally vulnerable.
- It is important to first develop a rapport with NEC communities. Saying we want to "educate community members" may not be the best approach.
- Extreme heat would be part of broader community information and delivered in a holistic approach to emergency management. It needs to be localised information for each state with an overarching message.
- The SES has run Zone Risk Assessment meetings (9 so far and 2 to go), at which to date there has been no CALD communities representation. The communities should be invited to attend.
- Only in the last few years have specific agencies begun to take extreme heat seriously. Often in country towns, people say they've lived with this for years, but extreme heat is now causing problems.
- Culturally appropriate, sustainable housing is needed. Local government could work with developers to promote heat friendly strategies and ensure older housing is better adapted for extreme heat (e.g. window shades). Recent housing designs have not been heat friendly and are totally dependent on air conditioning and insulation. Better design is needed so houses are cool in summer but harness sunlight for heat in winter.
- Better co-ordination of systems is required to integrate our ideas into practice, to assist people to become resilient.
- Many NEC and migrant communities have a strong religious base can religions play a role in education and support for their specific communities? The Catholic and Anglican churches have been particularly welcoming.
- A good, strong advocacy group would be good.
- We need some long term strategies, but a 12–18 months strategy would also be useful.
- We have to put the problem in a broader picture, it is an evolutionary process. Technology and new ideas take time. Multiple solutions are required.
- The importance of drinking water needs to be relayed, especially to people who come from countries where water can be contaminated. They may not trust tap water and therefore not drink sufficiently during hot weather.
- When is the best time to provide this information? When they first arrive? Just before summer? It is always useful to provide messages when people are

receptive – i.e. when a problem has just occurred. Simple key messages need to be identified and be ready to roll out. Simpler messages are less likely to be distorted.

- A pictorial view of how messages are distributed to communities would be useful.
- Issues of discrimination need to be considered when recommending strategies such as going to shopping centres in extreme heat. Would community centres therefore be better?

# 2.2.2.2 Table 5

The Table 5 discussion focussing on new and emerging communities is summarised below:

- Cultural competency is key. Solutions need to come from the communities themselves and align with cultural values.
- Caution is required in designing adaptation messages that do not reflect and sustain xenophobic and prejudicial discourses.
- Educate on the climate in SA and associated behavioural strategies.
- The 'problem' of extreme heat needs to be recognised and 'owned' by specific communities.
- Encourage families to have their own heat plan. Co-ordinate together as a family, with specific roles being given to members.
- Educating children for long-term adaptation.
- Disseminate simple adaptation behaviour ideas, such as using blinds, baths and fans.
- Barriers include that some groups have few members and lack effective support networks, and that heat may only be problematic for a few weeks whereas other concerns (e.g. work and financial issues) may be more pressing.

### 2.2.3 New arrivals

Group task 2 for Tables 6 and 7 focussed on new arrivals as outlined in Box 5.

### Box 5: Group task 2 for Tables 6 and 7

### The focus for this discussion is NEW ARRIVALS

- 1. Recommend culturally appropriate means of educating community members about heat in Australia and encouraging preventive behaviours
- 2. What can be done to assist longer term climate change adaptation in this group?

For example:

- Should information be available on arrival or at some other time?
- What form of community engagement and health promotion would be most suitable?
- What low cost strategies could be suggested to assist adaptation in the long term?

# 2.2.3.1 Table 6

There was discussion at this table about who is vulnerable among the CALD community. The key points are summarised:

- Many CALD people speak good English, are professionals and not low SES. Clearly not all CALD people are vulnerable, so the figure of "1 in 4 people in SA are CALD" does not accurately reflect the size of the problem. It was discussed that the concern is for a subset of CALD. About 10% of new arrivals are humanitarian visas (most will be vulnerable). About 90% of new arrivals come on student or working visas and some of these people will be vulnerable, others not.
- All new arrivals will be unfamiliar with our heat.
- New arrivals with humanitarian visas have access to an English language program. The topic of heat (and other emergencies) could be integrated into the course content.
- Other new arrivals (e.g. student or working visas) should be provided with information through Universities, TAFE, work places etc, as part of their 'orientation packs'.
- The problem with providing information on arrival is overload, and if it is not relevant at that time it is likely to be lost in the mix.
- New arrivals will typically have ongoing contact with migrant health services or GPs and they would be appropriate sources of heat advice. This could also be individualised information.

• Adaptation information from Regional adaptation frameworks, via local Government regions may be useful.

### 2.2.3.2 Table 7

Finally, the summary of the Table 7 discussion about new arrivals:

- Need to provide evidence to people in CALD communities and organisations.
- Start a dialogue: this is the evidence what does this say to you?
- The information should not be patronising and needs to come from credible sources.
- Acculturation timing is important.
- Opportunities may need to be made.
- Messages should be made continually to improve saturation.
- Heat-related deaths are often not assigned data is not immediate.
- Need to make a connection with heat advertising or via a campaign: e.g. old people sweating. A connection could then be made, similar to cigarette advertising.
- Key point: Social determinants of health.
- It would be beneficial to provide communication to new arrivals about heat, targeting organisations/agencies with responsibility for new arrivals.
- We need to provide a 'hook' e.g. creating novel technologies to assist heatwave messaging.
- Building relationships with ethnic media would be useful.
- New arrivals have few contact points.
- For arrivals in detention the ability to access heatwave information may be limited.
- Ask people what climate change means to them.
- Media articles can be used to observe the social impact over time. From there
  you can communicate out to people.
- LCLIP (Local Climate Impact Profile) is a strategy used in UK emergencies.
- Supermarket analogy (where would you put your products, climate change, heatwave).
- New arrivals may not consider heat in the same way as Australian residents.
- Reaching people at their point of origin could be considered instead of waiting for them to come here. Information on heat in Australia and what to do should be provided prior to departure. However, information should be packaged in a way that will not scare people coming to Australia.

# 3. CONCLUSION

The 'Extreme Heat and CALD Communities' workshop brought together people from a range of organisations, communities, departments and academic institutions with a common interest in the adaptive capacity of people in CALD communities to extreme heat, and implications in the context of climate change. The Workshop concluded with a consensus of the key points and suggestions (Box 1).

Leaders of relevant organisations have worked together previously to develop an award-winning heat warning system and this collaboration continues with the current project. A significant outcome from the Workshop was the establishment of a Working Party/Leadership Group to move forward with the recommendations. Attendees volunteering to be part of the group included representatives from the University of Adelaide, the South Australian Fire and Emergency Services Commission (SAFECOM), the South Australian Department of Health, the University of Sydney, the South Australian State Emergency Service (SES), and the Department for Communities and Social Inclusion. The first meeting of the group is scheduled for later this month.

Since the Workshop, it has been learnt that a funding application by SA Health/The University of Adelaide to the Natural Disaster Resilience Program 2012-13 has been successful. This funding will allow work on risk communication in CALD communities to continue. Workshop attendees can continue to contribute to this research by being involved in future consultations around engagement with CALD communities and the development of effective communication strategies.



# Program

9.00-9.30am	Registration		
9.30-9.35am	Welcome and overview of day		
9.35-9.45am	Official Opening Hon. Jennifer Rankine MP, Minister for Multicultural Affairs		
9.45-9.55am	Heatwaves - the health impacts Professor Peng Bi, The University of Adelaide		
9.55-10.15am	Extreme heat and climate change adaptation in CALD communities – presentation of study findings Dr Alana Hansen, The University of Adelaide		
10.15-10.30am	Discussion and questions		
10.30 <b>-</b> 11.00am	Morning tea		
11.00-11.10am	New and emerging communities' perspective Dr Lillian Mwanri, Flinders University		
11.10-11.20am	Emergency management during extreme heat Ms Val Smyth, Director, Emergency Management, SA Health		
11.20-11.30am	Strategies to assist older people during heatwaves Ms Lynette Pugh, Director, Domiciliary Care, Department for Communities and Social Inclusion		
11.30-11.50am	Panel discussion		
11.50 <b>-</b> 12.45pm	Dissemination of heatwave warning messages in CALD communities		
12.45-1.30pm	Lunch		
1.30-1.45pm	Multicultural health communication Mr Michael Camit, NSW Multicultural Health Communication Service		
1.45 <b>-</b> 2.45pm	Assisting community education and adaptation		
2.45-3.00pm	Feedback and discussion		
3.00-3.30pm	Afternoon tea and networking		
3.30-4.00pm	Consensus of recommendations		
4.00.4.20mm	Summary and close		



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Lead organisation:	The University of Adelaide
Partner Organisations:	SA Department of Health The University of Sydney Monash University
Research team:	Professor Peng Bi (The University of Adelaide) - <i>Principal</i> <i>Investigator</i> Dr Arthur Saniotis (The University of Adelaide) Dr Jill Benson (The University of Adelaide) Dr Yan Tan (The University of Adelaide). Dr Monika Nitschke (SA Department of Health (SA Health)) Dr Leigh Wilson (University of Sydney) Assoc Prof Gil-Soo Han (Monash University) Ms Val Smyth (SA Health) Dr Alana Hansen (University of Adelaide) – <i>Research Officer</i>
Research Reference Group:	Professor Peng Bi Dr Arthur Saniotis Dr Jill Benson Dr Yan Tan Dr Monika Nitschke Dr Leigh Wilson Assoc Prof Gil-Soo Han Ms Val Smyth Dr Alana Hansen Dr Lillian Mwanri Ms Teresa Burgess Ms Christine Andrews
Workshop Organising Committee:	Dr Alana Hansen Dr Susan Williams Dr Monika Nitschke Ms Teresa Burgess Dr Arthur Saniotis Dr Leigh Wilson
Workshop facilitator:	Ms Wendy Tims
Table Scribes:	Dr Monika Nitschke (Table 1) Ms Antoinette Krackowizer (Table 2) Dr Leigh Wilson (Table 3) Ms Teresa Burgess (Table 4) Dr Scott Hanson-Easey (Table 5) Dr Susan Williams (Table 6) Dr Arthur Saniotis (Table 7)

# **APPENDIX 4**





### EXTREME HEAT AND CALD COMMUNITIES WORKSHOP The University of Adelaide, Monday 29 October 2012 SUMMARY REPORT

Attendees at the Workshop discussed short and long term strategies to address knowledge transfer and risk communication to CALD community members regarding extreme heat and climate change. Scribes at each table took notes which appear in detail in the full report (attached). Alana Hansen (Research Officer) and Wendy Tims (Workshop Facilitator) synthesised the main points into the following six themes:

### 1. What is the message?

There was much discussion about 'the message' and there was consensus that it needs to be simple, clear and basic, and should cover 3-4 key messages with feasible practical advice such as 'find a cool space or access to air conditioning', 'drink water', 'use blinds and fans', 'take baths', and 'watch out for relatives and others in the community'. Catchy phrases and patronising tones should be avoided and the message should be relayed in a culturally appropriate way that does not engender xenophobia and is not seen to be 'lecturing'. The messages must be in migrants' own language and cater for unique differences and language nuances between CALD groups. The desired outcome should also be considered as should public responses and complacency to messages when extreme heat doesn't eventuate, especially in the case of the Extreme Heat 'Watch'. Media messages should make mention of ethnic communities.

Resilience and forward planning should be promoted and families could be encouraged to have their own heat plan (with perhaps a 'cheat sheet' in different languages about what to do in a heatwave). It needs to be taken into consideration that some in CALD communities may be unfamiliar with 'heatwaves' and may not have the same perceptions of heat. General awareness of the issue should be raised in communities and information should address misconceptions, maladaptive beliefs and attitudes, and assumed knowledge. In recognition of the fact that some cultures are more aural, some literal, and some graphic, messaging needs to be undertaken in diverse ways. Information should be evidence-based and packaged in ways that engage, explore, explain, elaborate and evaluate, similar to other successful health promotion campaigns to which people can relate.

For new arrivals, an orientation pack of information is needed with local climate information relevant to each state, together with associated behavioural strategies, as well as overarching messages. A State Standard Communication (and Messages) Plan-is required for SA along with broader community education about emergency management.

### 2. Who do we want to reach?

1

It is acknowledged that not all CALD communities are vulnerable, particularly those that speak English, are professionals and are not low SES. The concern is for a subset of the communities. It was mentioned that messages need to reach everyone and well as specific communities. These include migrants (including new arrivals and skilled migrants), people in



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new and emerging communities, refugees, asylum seekers, women in CALD communities, tourists, hard to reach sub-groups and CALD groups with few support networks.

All older people including older migrants need to be targeted as well as their family-member carers and younger CALD people, as they may influence older generations. Consideration should be given to people in rural areas, people with hearing and visual impairments and those with co-morbidities who may be more at risk. Children in particular can be targeted for longer term adaptation messages.

### 3. How will we reach these people?

Access to CALD communities was perceived to be difficult but could be improved with greater community wide acceptance and integration in general, e.g. 'getting to know your neighbours'. It is acknowledged that solutions need to come from the communities themselves and align with cultural values. Extreme Heat 'Watch' and 'Warnings' are only issued in English at present. Greater rapport with the communities is needed and links established through which emergency services messages could be disseminated through networks. Pre-season emergency management meetings could involve CALD communities.

Respected, trusted community members, organisations, and religious groups/leaders could assist in message dissemination and could help build trust between CALD communities and agencies. One to one communication between community members and a 'telephone tree' arrangement (e.g. 10 people ring 10 others who ring 10 others etc.) would be useful. Community service providers would play a key role and free professional development training workshops could be offered to organisation/agency staff to assist in communication of messages to clients. It was mentioned that each service that deals with the elderly should have a heatwave strategy and that having a dedicated registry of vulnerable clients would be useful (although this can be problematic). The State Emergency Centre Call Centre could possibly be used by CALD community volunteers to ring these people during heat emergencies.

It was agreed that a range of other methods need to be used for risk communication in CALD communities. The most often mentioned was ethnic radio. Others included TV-advertisements using CALD communities, SBS, local radio, flyers, language specific newspapers, billboards, community events, the internet, social networking, email, SMS and novel technologies.

Presenting information first hand to women's clubs, men's clubs, seniors clubs etc. would be useful in the longer term as would integration of heat awareness and adaptation strategies into the curricula in schools and English language courses for new arrivals.

### 4. When should the message be sent?

The messages need to be prepared in advance and be ready to roll out as required through previously established links with communities. During an Extreme Heat 'Watch' contacts in the communities who could help with dissemination could be identified. Immediacy is

2



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important for messages – striking "when the iron is hot" when people are receptive. It was mentioned that starting the message earlier than a week before the event and continuing it for longer could improve saturation. Newsletters early in the season, then a follow up after a heatwave may be useful. Awareness could be raised about extreme heat via information in orientation packs for new arrivals, and via sessions during summer when it may be more relevant. Information could also be available at point of origin but this would need to be packaged in a way that would not be a deterrent.

### 5. Who should be involved for success?

The successful transfer of preventive information to CALD communities will only occur with a coordinated approach involving government departments, organisations, community groups and emergency services working together. Among the stakeholders mentioned (in no particular order) were: the SES, State Recovery Centre/ State Emergency Centre, SA Health, Department of Health and Ageing, Families SA, Multicultural SA, Multicultural Communities Council, the African Communities Council, Chinese community networks, ethnic media (radio and press), local governments, Meals on Wheels, RDNS and Neighbourhood Watch groups. Information could also be distributed to ethnic food markets and shops (identified through PIRSA).The transfer of health information could occur through Migrant Health Services, GPs and pharmacists.

The support and involvement of migrants themselves, together with religious/faith leaders and respected community members would be integral to success, as would liaison with interpreters, volunteers, support services, and agencies working with the communities, and those with responsibility for new arrivals such as settlement NGOs. Group leaders could be involved along with community/cultural centres.

### 6. What else needs to be addressed in the big picture?

There were several other points raised, barriers identified and recommendations made. Long term inclusion of CALD communities was thought to be an evolutionary process along with acceptance of these communities into the mainstream population. CALD communities need to be part of discussions and the development of strategies around emergency management issues including extreme heat, therefore increasing the cultural competency of organisations to work with CALD groups is important. There is little co-ordination of systems at present and extra efforts have to be made to integrate ideas into practice to assist knowledge transfer and build resilience in CALD communities.

More research is required in how to best relay the messages to the communities and to evaluate the effectiveness of the message via client follow-up. We need a much better knowledge of the needs of new and emerging communities and their perceptions of extreme heat and climate change.

All organisations/agencies are financially constrained and added workloads would be problematic. It was recognised however that some low cost measures could be put in place.

3



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Some community organisations have limited capacity and capacity building measures need to be considered.

Regarding older migrants, it was mentioned that we need to find out "what is the greatest issue to the older person in the heat?" A barrier to older people staying healthy in the heat is that many refuse to report they are at risk for fear of being "put into care". Some older CALD people do not like using phones and this could impact on messages getting passed on and check-up calls. Many people are not captured because they are not referred to an agency and we need to make sure people do not "fall through the cracks". People who are carers of their elderly relatives require extra support and resources. Assumptions cannot be made that informing children about adaptation measures will result in information transfer to older generations.

Some CALD groups may have very few members, and thus lack effective support networks as do some new arrivals who have few contacts and are not aware they can ask for assistance. They often live on the periphery of the city and have less access to services. Some may be reluctant to drink tap water. A considerable amount of information is provided on arrival and if heat information is included it could be overlooked especially if it is not relevant at that time. Additionally, extreme heat and climate change may not be considered issues of importance to individuals and organisations as heatwaves occur for relatively short periods of time, and people have more pressing problems.

There was considerable discussion about housing being a major long term issue. Current housing is not heat-friendly and is reliant on air conditioning/insulation. There is a need for sustainable climate appropriate and culturally appropriate housing. Collaboration with the housing industry could be a positive step forward. Adapting older housing for a warmer climate should also be considered. Local governments could play a role in identifying sub-standard housing and liaising with developers to encourage adaptive measures.

Practical long-term as well as short to mid-term strategies were suggested. A distribution framework for emergency messages needs to be mapped out. Central centres to provide "cool care" were suggested, as was the establishment of a "buddy system" where people could monitor social contact/clothing/drinking of fluids/behaviour of those at risk. The dissemination of information about simple adaptive behaviours and encouraging families to have their own heat plan could build resilience. Adaptation information from local government regional climate change adaptation frameworks could be useful to assist climate change adaptation in CALD communities.

Finally, it was mentioned that a "good, strong advocacy group" is required to move forward with recommendations. A multi-sectoral working party has been established and the first meeting will be held later this month.

4
## **APPENDIX 5**



## THE UNIVERSITY of ADELAIDE

## EXTREME HEAT AND CLIMATE CHANGE: ADAPTATION IN CULTURALLY AND LINGUISTICALLY DIVERSE (CALD) COMMUNITIES WORKSHOP

PLEASE TAKE A MOMENT TO EVALUATE YOUR WORKSHOP EXPERIENCE

1. How useful did you find the Workshop?
Not useful Quite useful Very useful Extremely useful
2. What aspect did you find most useful?
Presentations Group work Discussion Networking Other
3. Did the Workshop meet your expectations?
Yes No Because:
4. Would you like to add anything to the recommendations aimed to assist CALD communities during times of extreme heat or in terms of adaptation to climate change?
5. Any final comments you would like to make?

Thank you very much for your time





