



Australasian College
for Emergency Medicine

Heatwave preparedness for emergency departments and emergency medicine systems

V5 P59

Document Review

Timeframe for review:	Every three years, or earlier if required
Document authorisation:	Council of Advocacy, Practice and Partnerships
Document implementation:	Council of Advocacy, Practice and Partnerships
Document maintenance:	Department of Policy and Strategic Partnerships

Revision History

Version	Date	Pages revised / Brief Explanation of Revision
V1	Jul-2005	Approved by Council
V2	Mar-2012	Approved by Council Template updated. Change to content under 'Purpose and Scope'. Slight change to some of the content under 'Procedure and Actions'.
V3	Jul-2016	Approved by CAPP 'Definitions' added. 'Introduction' added. 'Policy' expanded in order to discuss approaches and tools that can be applied by emergency physicians when treating those experiencing FDVA 'Procedure and Actions' expanded to include skills and resources required.
V4	Jul-2020	Substantial revision throughout. Application of new document style. Limitation of policy to Australian EDs.
V5	Nov-2023	Refocused on ED and health system preparedness.

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1. Purpose and scope

This document is a policy of the Australasian College for Emergency Medicine (ACEM) and relates to the preparation, readiness and responsiveness of emergency departments (EDs) and emergency medicine systems to environmental heatwaves and extreme heat events.

The policy is applicable to all EDs in Australia and Aotearoa New Zealand.

2. Overview

A heatwave can be defined as hot outdoor temperature or hot weather lasting for at least two to three days that is outside the normal range of ambient temperatures (refer to Appendix 1 for country-specific definitions). Heatwaves are made stronger, longer and more likely because of human-induced global climate change [1].

Heatwaves are a serious threat to public health in Australia and Aotearoa New Zealand (NZ), because they cause suffering and death; aggravate comorbid conditions; and exacerbate social inequalities. Extended periods of hot weather also contribute to other public health emergencies such as climate-related infectious diseases, droughts and bushfires, all of which can severely impact health systems by increasing demands for service, threatening infrastructure and supply chains, and straining the health workforce [2-4].

Climate change projections for this region indicate that temperatures, and their health and social impacts, will rise at an accelerated rate unless strong mitigation is in place [1]. Modelling shows that the heat-related excess death ratio in Australia and NZ has increased more than most other regions in the world, and 2640 deaths per year are associated with hot temperatures (10 deaths per 100,000) [5]. Exposure to hot temperatures is associated with heatstroke, acute kidney injury, impacts on mental health and worsening underlying cardiovascular and respiratory disease.

During heat waves, EDs see a higher volume of patients, high patient acuity, increased length of ED stay, and have resulted in mass casualties [3, 6-8]. The heat wave disaster in southeastern Australia in 2009 saw total emergency cases increase by 46% over the three hottest days and direct heat-related health problems increased 34-fold. An estimated 374 people died [9]. In Sydney, heat-related ED visits increased over seven times during the 2011 heatwave compared to the average number of such visits in previous years, with 100% excess rate per 100,000 population amongst people aged 75+ [10]. Heat waves are also associated with higher rates of mental health related ED visits [3, 11].

People experience adverse health outcomes even in relatively cooler areas of Australia and NZ because the effects of heat are associated with relative rather than absolute temperatures. Even modest rises in temperature can increase emergency department (ED) usage for a broad range of heat-sensitive conditions [12, 13]. The risk for heat related injuries and other conditions is elevated for all population groups, but especially among older people, people living with chronic illness and disability and on certain medications, CALD communities, infants, pregnant people and outdoor workers. Heat health risk is also influenced by deprivation and the built environment, mental illness, use of alcohol and other drugs; social isolation and homelessness [3, 13].

Extreme heat events are projected to worsen [14], necessitating that health systems are prepared to meet the growing burden of heat-related conditions.

3. Policy

Health system preparedness and resilience to the growing threat of heatwaves and extreme weather events require an all of society response, encompassing:

- Heat warning alerts and prevention/adaptation heat communication to the public.
- Community-specific vulnerability and adaptation analyses and heat visualization tools.
- Health surveillance systems that monitor injuries and diseases from climate related events.
- Investment in energy efficient equipment and encouraging staff energy-saving practices.
- Updated system-wide emergency plans to include planning for heatwaves/extreme weather events.
- Planning for impacts to major utilities (e.g., electricity, water, Internet) and the supply chain.
- Healthcare infrastructure resilience to heatwaves and other extreme weather events.
- Continuous building commissioning and energy conservation strategies to reduce overheating in health facilities and undertaking regular energy audits to identify improvements in energy efficiency.
- Safeguarding energy security through investment in health facility backup capabilities (e.g., generators) that ensure multiple energy supplies.
- Long-term actions to reduce heat impacts such as green spaces and decarbonizing.

4. Emergency department preparedness for heatwaves

Emergency department health providers play an important role in heatwaves by identifying and caring for patients with heat illness and responding to heatwave disasters and heat surge demand.

4.1 Preparing for patient care

- Develop evidence-based triage and treatment protocols, including (a) *protocols for identifying and treating high risk patients* during or following heatwaves, (b) *rapid triage and treatment of heat stroke sufferers*, and (c) *safe discharge of vulnerable patients* from the ED during a heatwave (see Appendix 2 for discharge support).
- Raise awareness among patients, carers, and visitors about mitigation of adverse health effects from heatwaves, including advice about medication alteration and storage, medications with increased risk of side-effects during heatwaves, fluid intake, modifying activity, avoiding alcohol and other drugs, cool and safe environments, and what to do if feeling unwell.
- Identify how people with chronic conditions will continue to access care during extreme heatwave events (e.g., home care dialysis patients who present to the ED when their equipment becomes inoperable in power outages and accessing dialysis that is provided at alternate sites).
- Plan for how the facility will provide clear, consistent and culturally appropriate heat communication for patients, caregivers and staff.

4.2 Emergency department staff preparedness

- Actively involve staff in the development, dissemination and update of a facility heat response plan (see 4.3.).
- Assign heatwave planning and co-ordination responsibility to an ACEM Fellow (FACEM), either as a specific portfolio duty, or as part of responsibility for overall disaster management.
- Plan for how all staff will be alerted if a heatwave is forecast (early warning).
- Ensure staff and responders are appropriately prepared, trained and resourced for heat emergencies, contingency plans, high-risk patients, and signs and symptoms of heat illnesses.
- Plan for how staff impacted by heatwave events will be supported e.g., flexible staff scheduling, transport, short-term needs, psychosocial support.
- Ensure staff are prepared to expand telehealth and other communication services at short notice.

4.3 Facility preparedness and systemic planning

- Understand how heatwaves and other extreme weather events will impact facility-level healthcare operations and vulnerable populations served by the healthcare facility.
- Develop or update a heat response plan and integrate it into the existing disaster management plan to ensure resilience and proper planning for future heatwaves. Include facility-level surge planning to ensure preparedness for sudden increases in patients and establish triggers for when to activate surge heatwave plans.
- Plan for shortages of available healthcare workers that are personally affected by extreme heatwave events e.g., through cross training, alternate care sites, load balancing across facilities, disaster assistance teams.
- Prepare for impacts that may accompany heat waves such as power outages, water shortages, supply chain issues and impacts to temperature-sensitive medicines and equipment. Ensure staff are prepared to implement safe practices e.g. water and waste management, alternative water and energy sources.
- Establish collaborative relationships with 'buddy' health care services to co-ordinate support and sharing of resources during a climate disaster, and with relevant external agencies (e.g. emergency management, social services).
- Involve emergency physicians in public health planning for heatwaves.
- Ensure sufficient levels of supplies are available to sustain operations during prolonged heatwaves and determine core services that will be provided during extreme heat wave events and those that will be suspended.

5. Further information

- Health.vic. Heatwave Planning Guide for Health and Community Services (2022) [[LINK](#)]
- Ministry of Health Manatu Hauora (NZ): Heat Health Plans: Guidelines (2018) [[LINK](#)]
- WHO guidance for climate resilient and sustainable health care facilities (2020) [[LINK](#)]
- Heatwave warning service: Bureau of Meteorology [[LINK](#)]
- MetService Te Ratonga Tiorangi [[LINK](#)].

Appendix 1

Country definitions of heatwave

There is no universally accepted definition of heatwave as it is geographically specific, and jurisdictions use different thresholds to trigger the release of heat health alerts. Local circumstances such as overnight temperatures, humidity, pollution, demographics, urban heat island effects, specific difficulties faced by rural communities, and acclimatization are some of the factors which contribute to the defined severity and impact of a heatwave event.

The World Meteorological Organization (WMO) defines a heatwave as “a marked unusual hot weather (max, min and daily average) over a region persisting at least two consecutive days during the hot period of the year based on local climatological conditions, with thermal conditions recorded above given thresholds”.

In Australia, the Bureau of Meteorology (BoM) defines a heatwave as when there are three or more consecutive days with minimum and maximum temperatures that are unusually hot for a particular location. The BoM classifies heatwaves according to three intensity levels: Low; Severe; and Extreme. While Aotearoa NZ does not yet have a formal definition, the New Zealand government has issued heat health guidelines based on the WMO definition.

Appendix 2

Support for vulnerable populations during a heatwave (safe discharge/redirect services)

Australian Red Cross Phone support (Telecross/REDi)

The [Red Cross Telecross Service](#) provides a daily phone call to check the wellbeing of vulnerable people and their carers who are registered with this service. [Red Cross South Australia](#) also provides a phone service to specifically assist isolated and vulnerable people during declared heatwaves.

Designated heat refuges

Heat refuges are designated cool facilities that provide respite and safety during extreme heat, particularly for vulnerable groups such as the unhoused and older people. They vary depending on jurisdiction, but include: council-run libraries, community centres, clubs, public pools, places of worship and schools. Check state government and council websites for more information.

Appendix 3

Jurisdictional public health resources

Beat the Heat

Many jurisdictions have suites of web-based public health resources / advice for use by the community. A good example is the [NSW Beat the Heat](#) site.

6. References

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