

Heat dome 2021: One year later



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June 29, 2022



BC Centre for Disease Control



Health checks during extreme heat events

A guide to doing health checks in-person or remotely

Extreme heat events can lead to dangerous indoor temperatures in homes without functioning air conditioning. Health checks are used to assess how people at high risk of heat-related illness are doing during extreme events. In-person health-checks are best, but a remote health check is better than no health check.

This guide has five pages with important information for doing health checks during extreme heat events.

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Rapid risk assessment checklist

To assess whether someone is at risk, check all the personal factors that apply on the following list. The more boxes checked, the higher the potential risk.

- Older adult (60 years+)** The body's ability to cool itself is impaired as people age.
- Mental illness or cognitive impairment** Conditions such as schizophrenia, depression, anxiety, and dementia can reduce awareness of heat-related risks.
- Chronic disease** Chronic diseases such as diabetes, heart disease, respiratory disease, and cancer can limit the body's ability to cool.
- Living alone or socially isolated** People who live alone or do not have strong social connections are at higher risk because they have fewer people looking out for them.
- Substance dependency or use** The ability to sense and respond to heat can be affected by use of drugs or alcohol, especially for those who are dependent.
- Impaired or decreased mobility** People with impaired or reduced mobility might be less able to take protective measures during extreme heat events.
- Medication use** Some prescription medications for common conditions can cause dehydration and affect the body's ability to cool itself.
- Poor physical fitness** People who are not engaged in regular physical activity are less able to keep cool in the heat.



Recognizing and responding to heat-related illness

Heat-related illness occurs when the body overheats. It is caused by prolonged exposure to high temperatures, and can be made worse by high humidity. The signs and symptoms of heat-related illness can range from mild to severe and can progress rapidly. If you are unsure, treat it like a life-threatening emergency and start cooling measures.

Severe heat-related illness

Severe heat-related illness is a life-threatening emergency. Act immediately to get help and start emergency cooling measures.

Signs and symptoms

Any of the following can be signs of severe heat-related illness:

- Fainting or loss of consciousness
- Unusual confusion or disorientation
- Severe nausea and vomiting
- Difficulty speaking
- Unusual coordination problems
- Hot, flushed skin or very pale skin
- Not sweating
- Rapid breathing and faint, rapid heart rate
- Body temperature > 39°C (102°F)
- Very low, dark urine output



Emergency measures

If someone is experiencing severe heat-related illness, take all the following actions:

- Call 911 immediately
- Stay with the individual until emergency services arrive
- Move to a cooler area, if possible
- Remove excess clothing
- Have the individual rest comfortably flat on their back facing up or in a semi-upright position and offer water
- Apply cool, wet towels or ice packs around the body, especially to the neck, armpits, and groin, until emergency services arrive

Moderate heat-related illness

Moderate heat-related illness can rapidly become severe heat-related illness. Immediate cooling action is important to prevent progression.

Signs and symptoms

Any of the following can be signs of moderate heat-related illness:

- Nausea
- Light-headedness
- Weakness
- Extreme fatigue, malaise
- Very thirsty or dry mouth
- Difficulty swallowing
- Heat rash, unusual swelling, or cramps
- Rapid heart rate
- Body temperature > 38°C (100°F)
- Reduced, dark urine output

Mild heat-related illness

Mild heat-related illness can rapidly become severe heat-related illness. Immediate cooling action is important to prevent progression.

Signs and symptoms

Any of the following can be signs of mild heat-related illness:

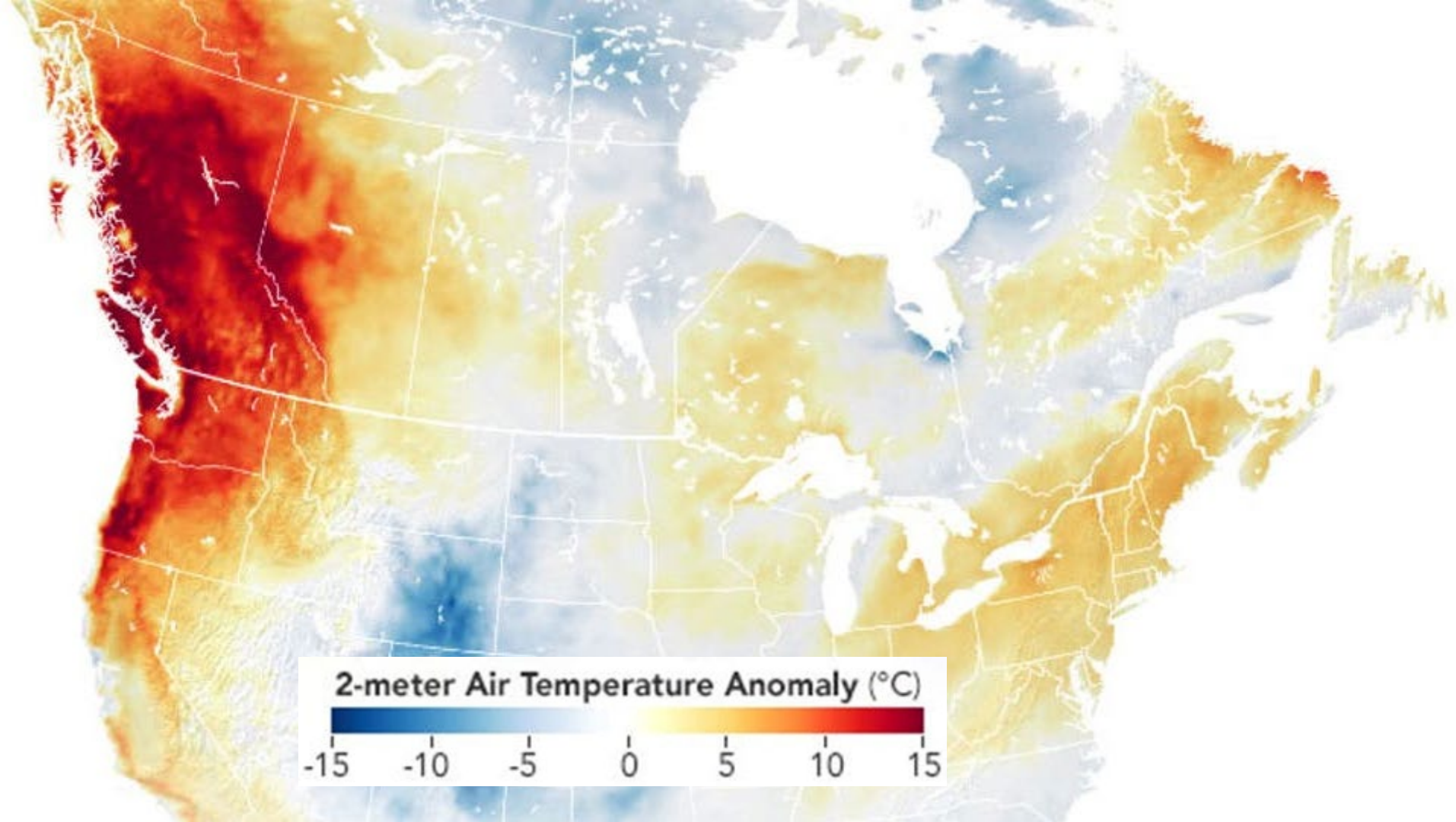
- Feeling unwell
- Dizziness
- Headache
- Irritability
- Fatigue
- Thirst
- Skin feels very warm and sweaty
- Increase in resting heart rate
- Reduced urine output

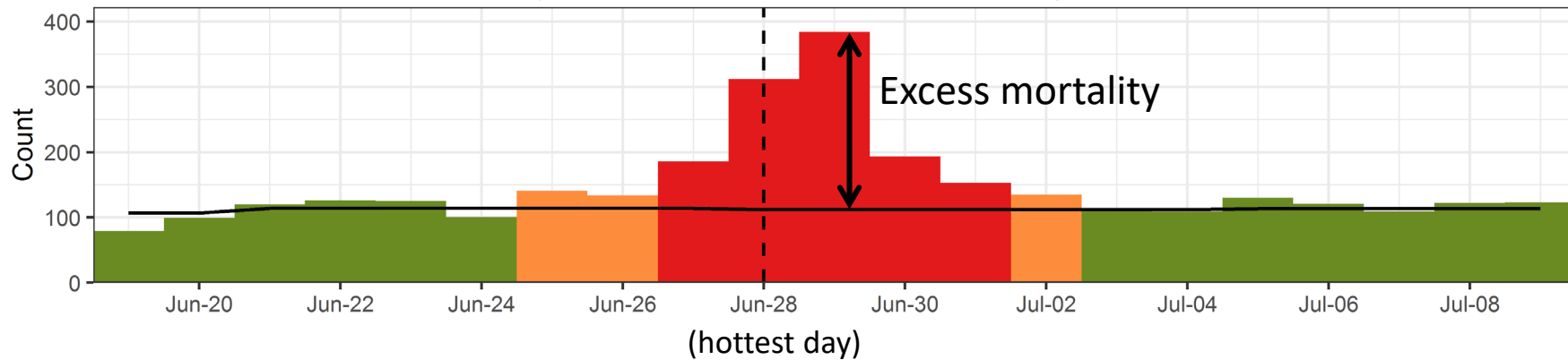
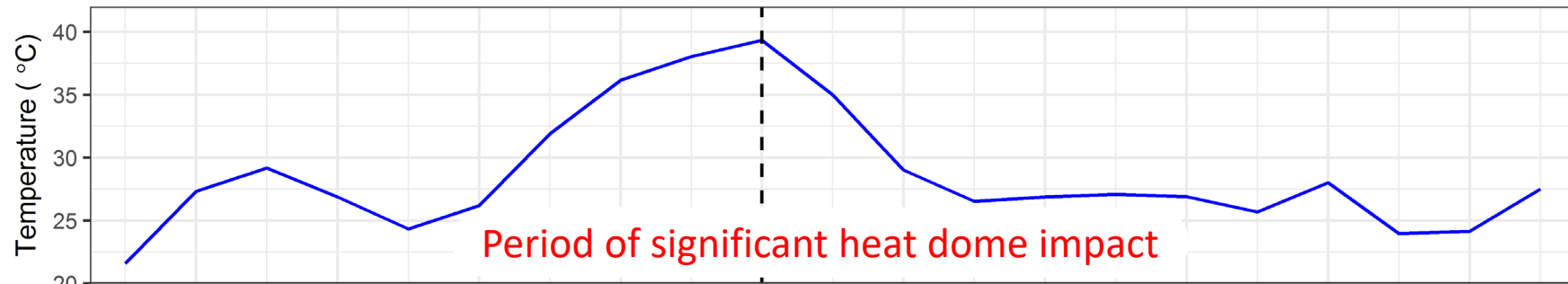
Immediate measures for mild to moderate heat-related illness

If someone is experiencing mild to moderate heat-related illness, take as many of the following cooling actions as possible:

- Relocate individual to a cooler area
- Remove excess clothing and provide low-level fanning
- Activate air conditioning or open windows in different areas of the house to create a cross-breeze
- Keep the individual resting comfortably flat on their back facing up or in a semi-upright position.
- Encourage sitting upright and drinking water
- Apply cool, wet towels or ice packs around the body, especially to the neck, armpits, and groin
- Call 911 if symptoms persist or get worse







- Expected daily deaths based on a statistical model
- Population-weighted maximum temperature estimates
- Normal
- Unusual compared with expected
- Rare compared with expected
- Very rare compared with expected

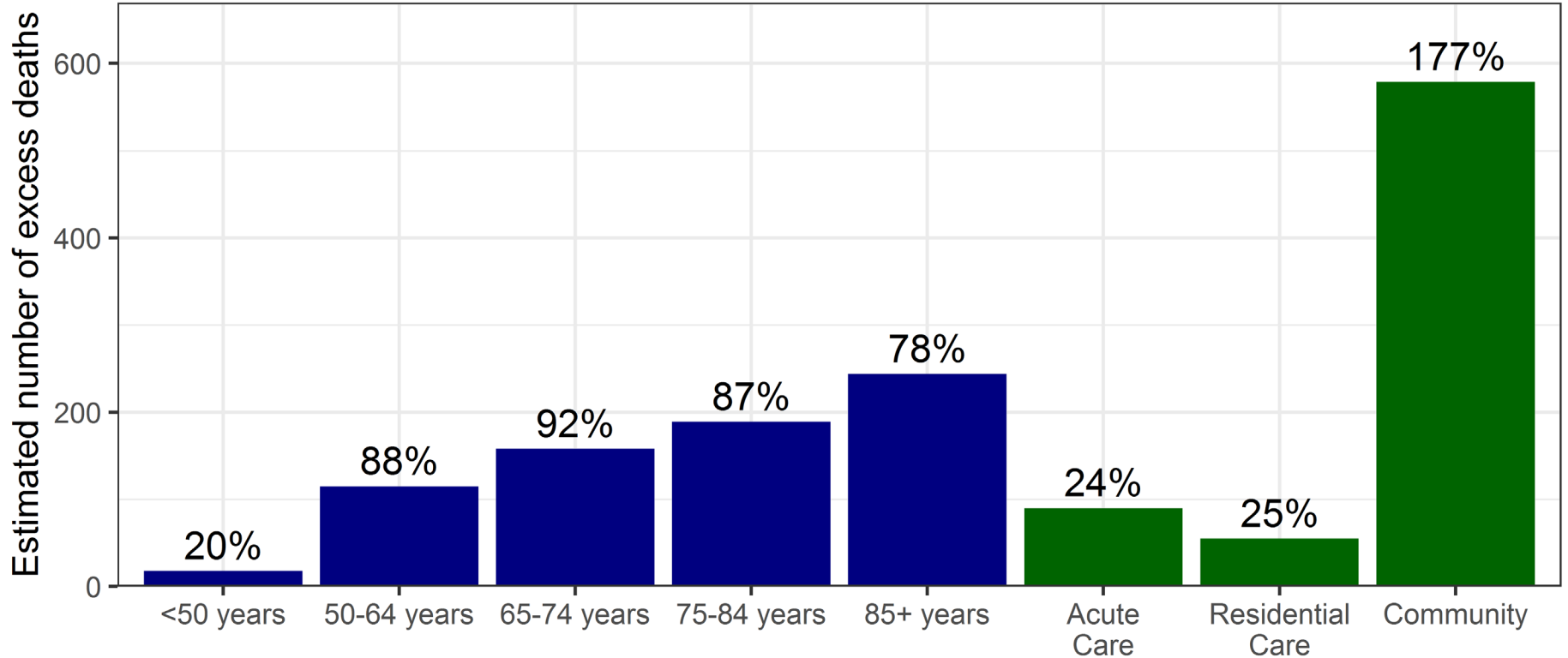
BCCDC estimates **740** *excess deaths* from June 25 – July 2

Week Starting	Deaths Registered*	Deaths Reported to BCCS†	Percent Reported to BCCS	BCCS Heat-Related Deaths*	BCCDC Estimated Excess Deaths^
June 18	744	197	26%	2	0
June 25	1503	818	54%	526	720
July 2	840	333	40%	43	50 (20 on July 2)
July 9	792	237	30%	11	5
July 16	783	252	32%	1	0
July 23	832	246	30%	6	30

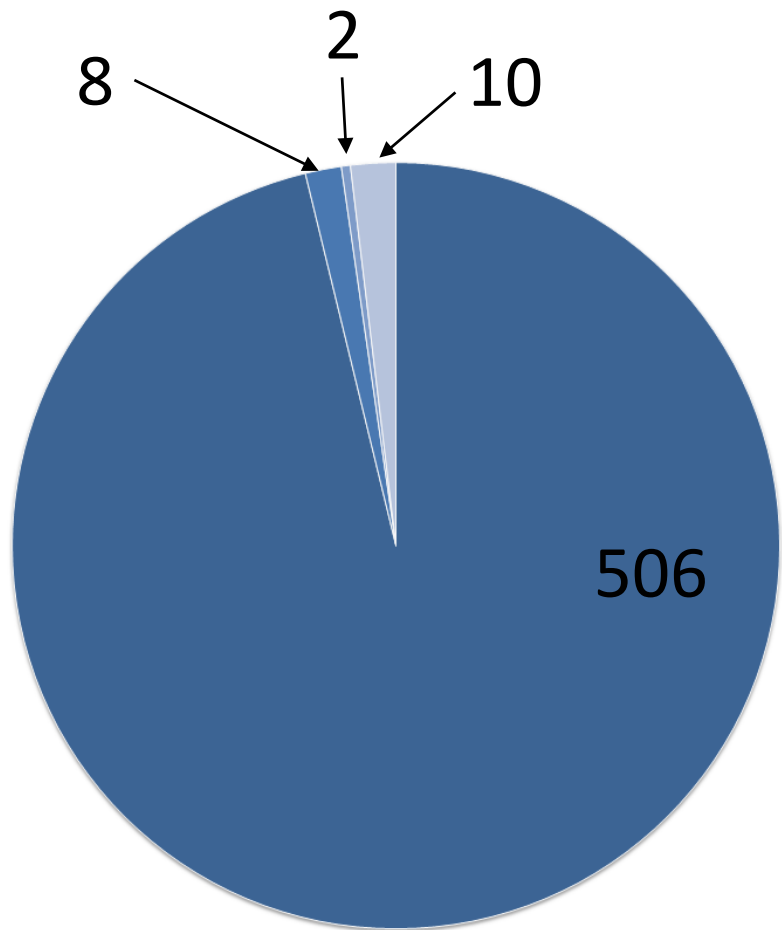
*Based on date of death †Based on date of report ^Estimate rounded to nearest 5

Estimated excess deaths during the heat dome (June 25 - July 2) by age group and setting of death

Number above the bar: percentage increase above expected deaths

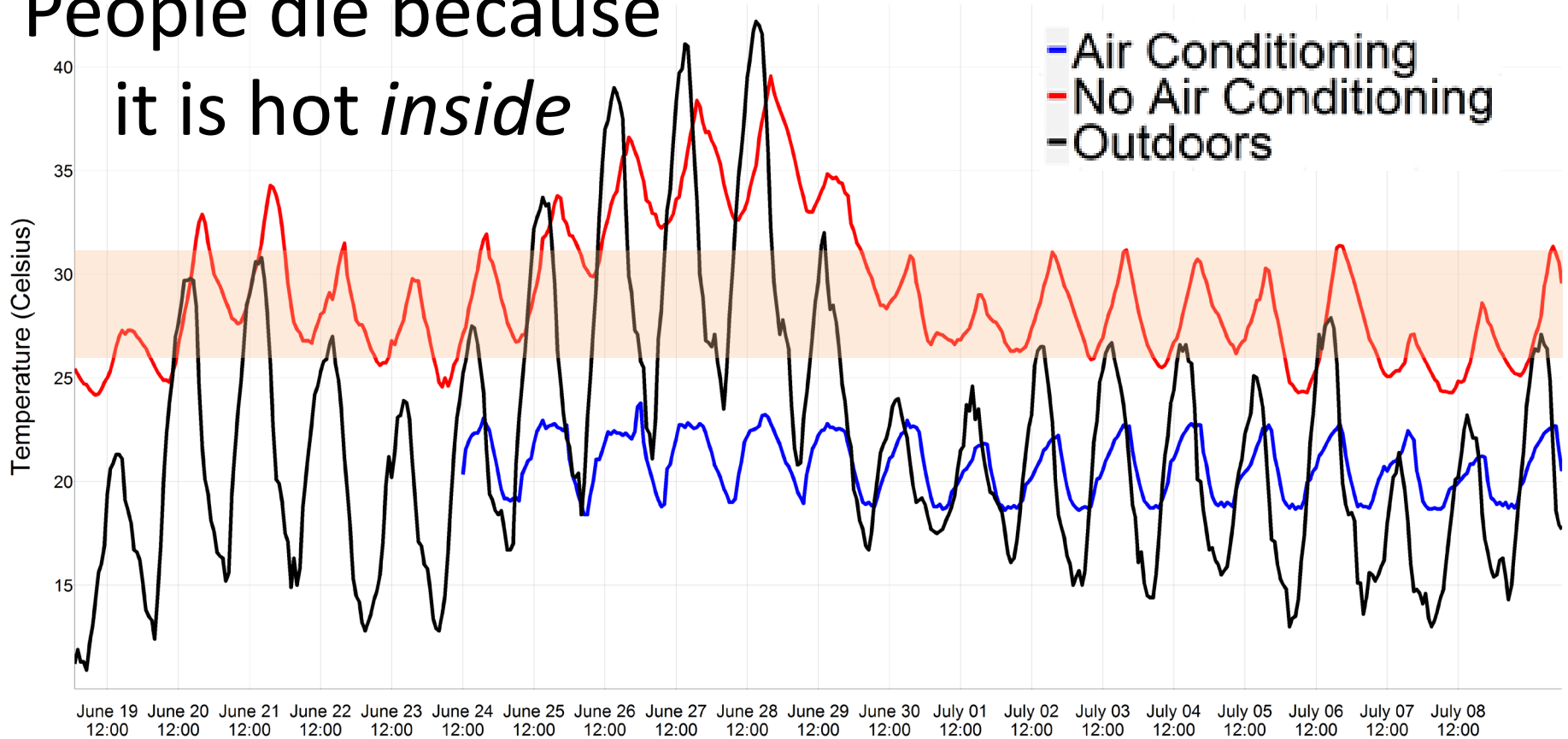


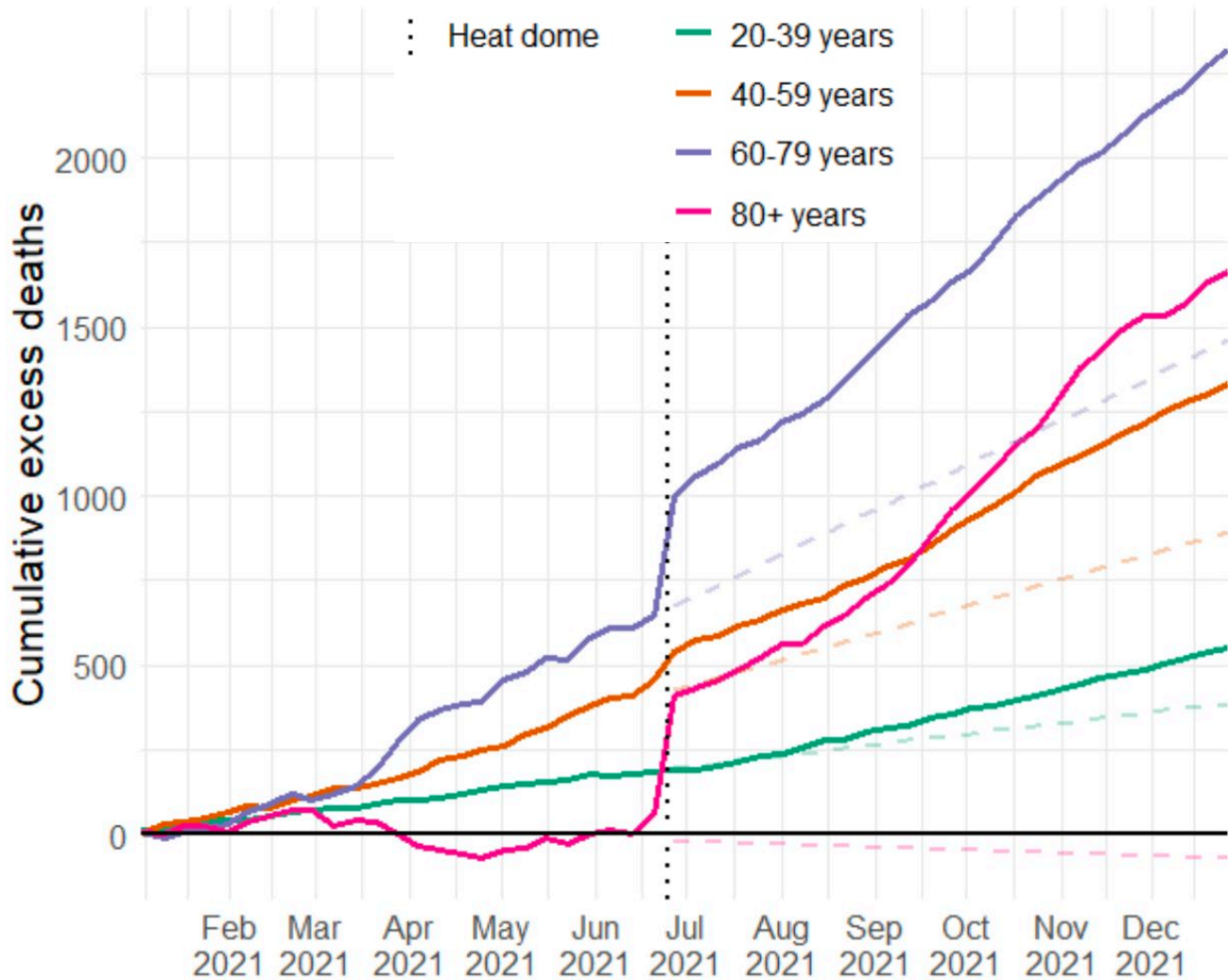
526 heat-related deaths from June 25 – July 1 (BC Coroners Service)



- Inside Residence
- Outdoors
- Public Building
- Unknown

People die because it is hot *inside*

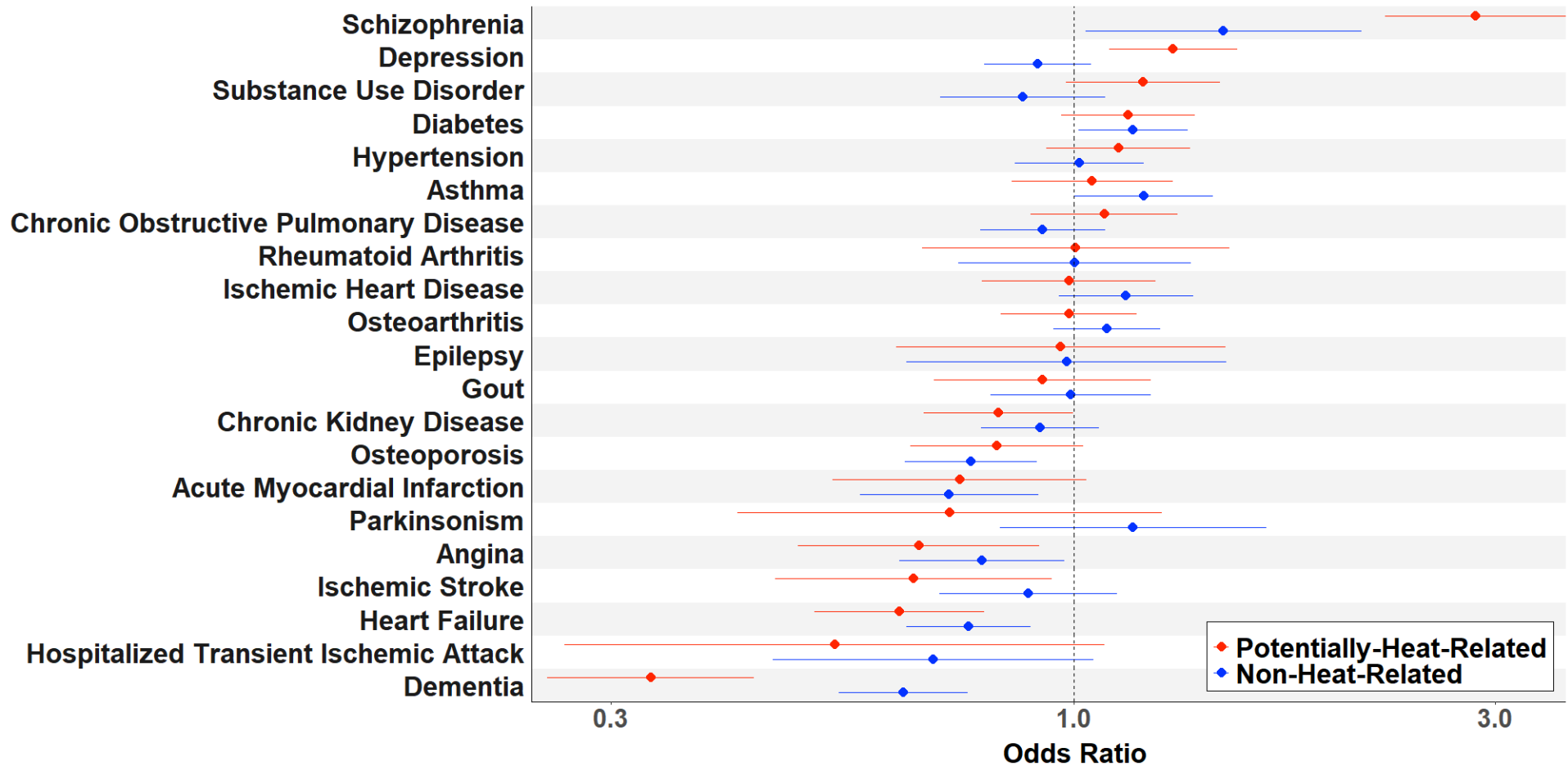




Ongoing
excess
mortality
highest in
the most
elderly

Risk associated with neighborhood factors, adjusted for age, sex, and local health area

Variable	Increase in risk
Material + Social +	-8% [-47%, 59%]
Material + Social -	53% [-2%, 140%]
Material - Social +	89% [21%, 195%]
Material - Social -	188% [85%, 349%]
5% more tree canopy	-9% [-16%, -2%]



Themes

Risk factors

- Indoor heat
- Mental illness
- Social isolation
- Substance use
- Deprivation
- Diabetes

Protective factors

- Indoor cooling
- Privilege
- Greenspace
- Social connection
- Being in care