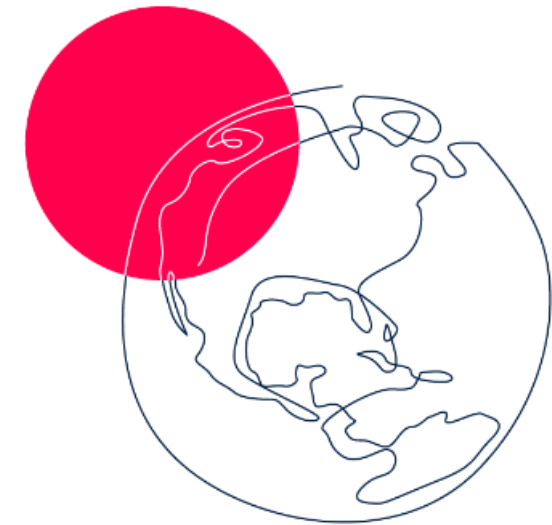


Climate Change: Understanding and Managing the Significant Health Impacts of Extreme Heat Events

June 22, 2023 | 1830–2000 PT

NOTE: The webinar (and audio) will start at 6:30PM



THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

Faculty of Medicine

Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)

DISCLOSURES

Planning Team

- **Dr. Bruce Hobson (UBC CPD):** No conflicts of interest
- **Dr. Bob Bluman (UBC CPD):** No conflicts of interest
- **Stephanie Ameyaw (UBC CPD):** No conflicts of interest
- **Nicole Esligar (UBC CPD):** No conflicts of interest
- **Naeema Al-Mridha (UBC CPD):** No conflicts of interest

DISCLOSURES

Panelists

Brooks Hogya – No conflicts of interest

Dr. Heather Lindsay – No conflicts of interest

Dr. Sarah Henderson – No conflicts of interest

Dr. Emily Newhouse – No conflicts of interest

Dr. Glen Kenny – No conflicts of interest

Dr. Kyle Merritt – No conflicts of interest

Dr. Heather Lindsay – MD MPH FRCPC;
Emergency Physician, Vancouver General Hospital;
Department Head, Emergency Medicine, Vancouver Acute,
VGH



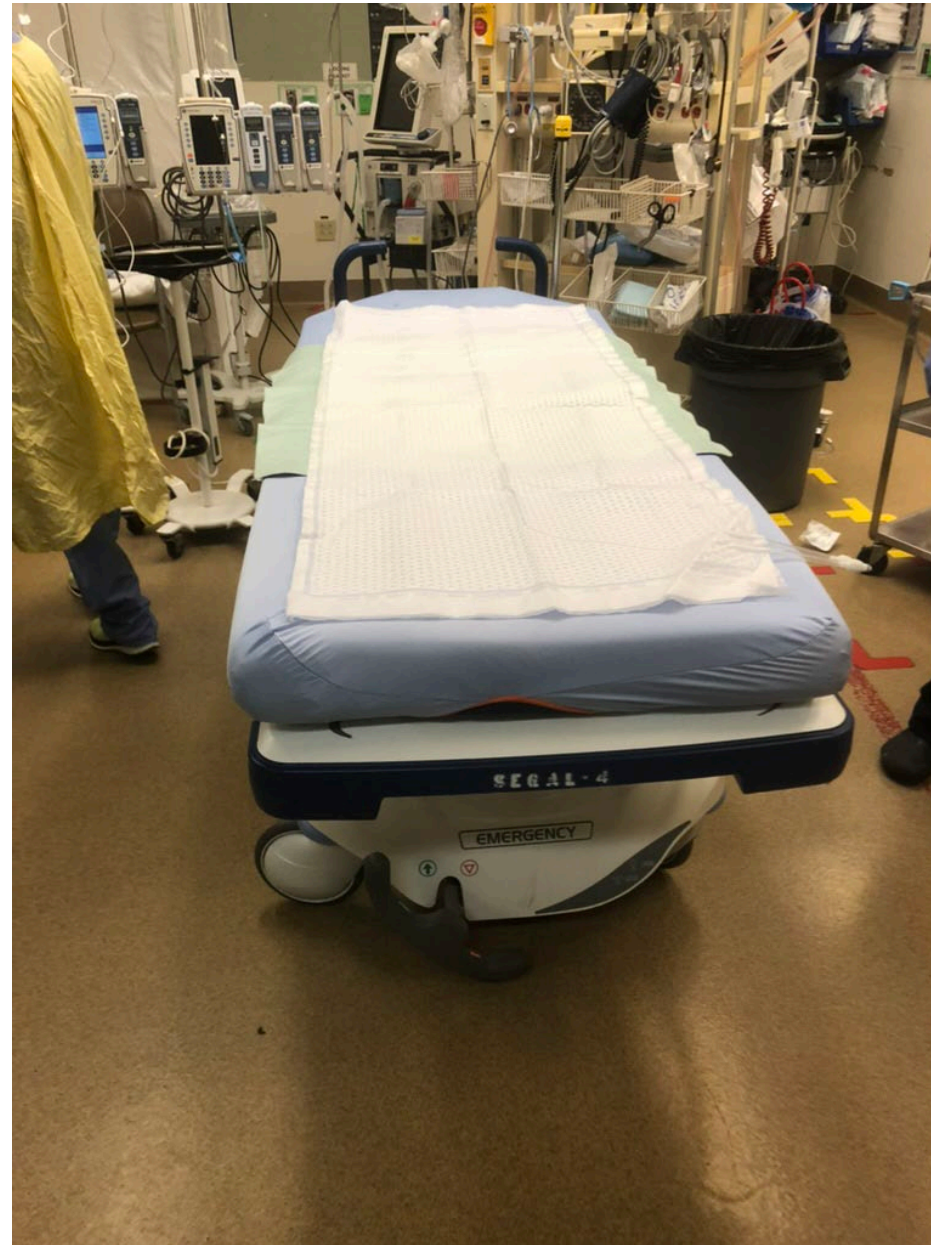
THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

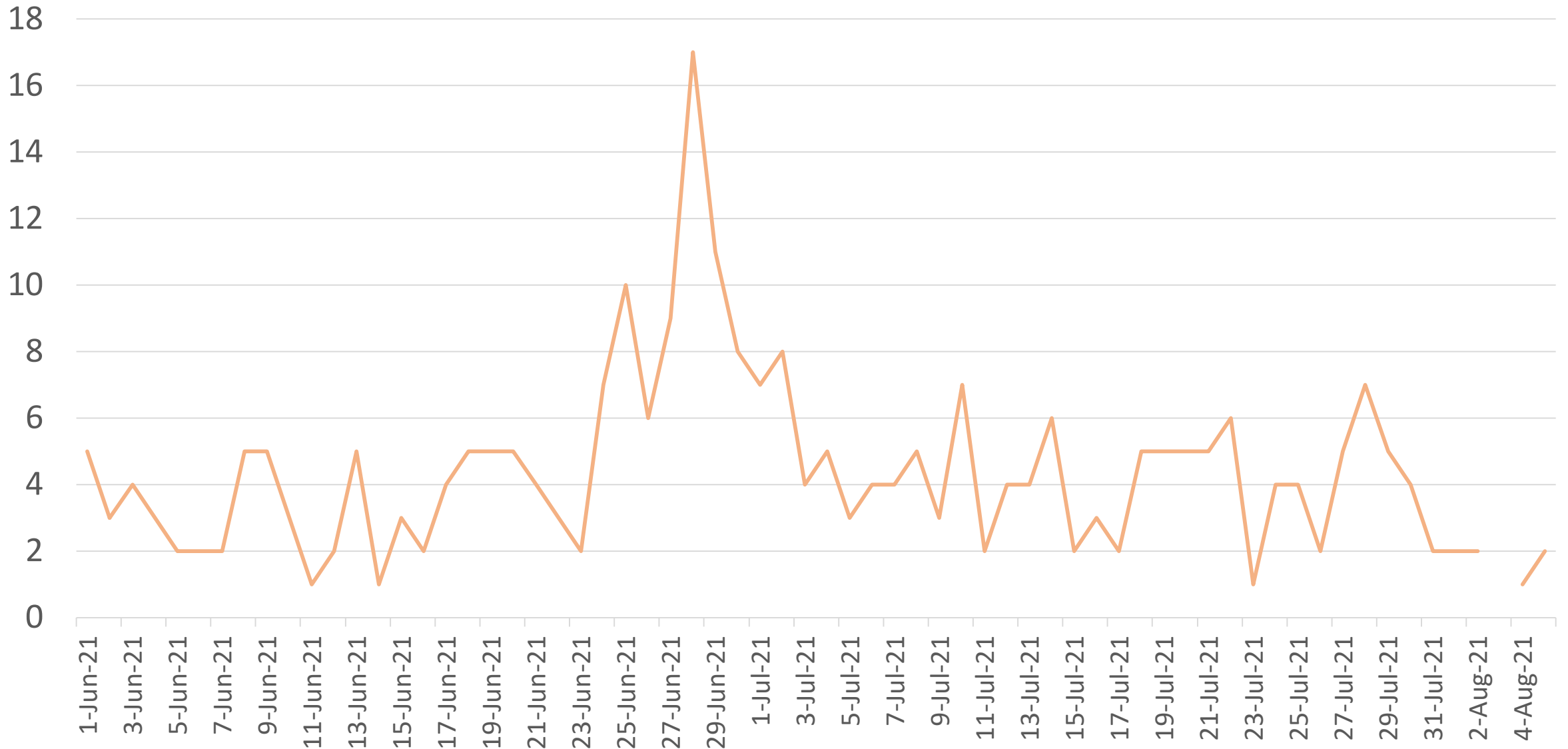
Faculty of Medicine

Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)

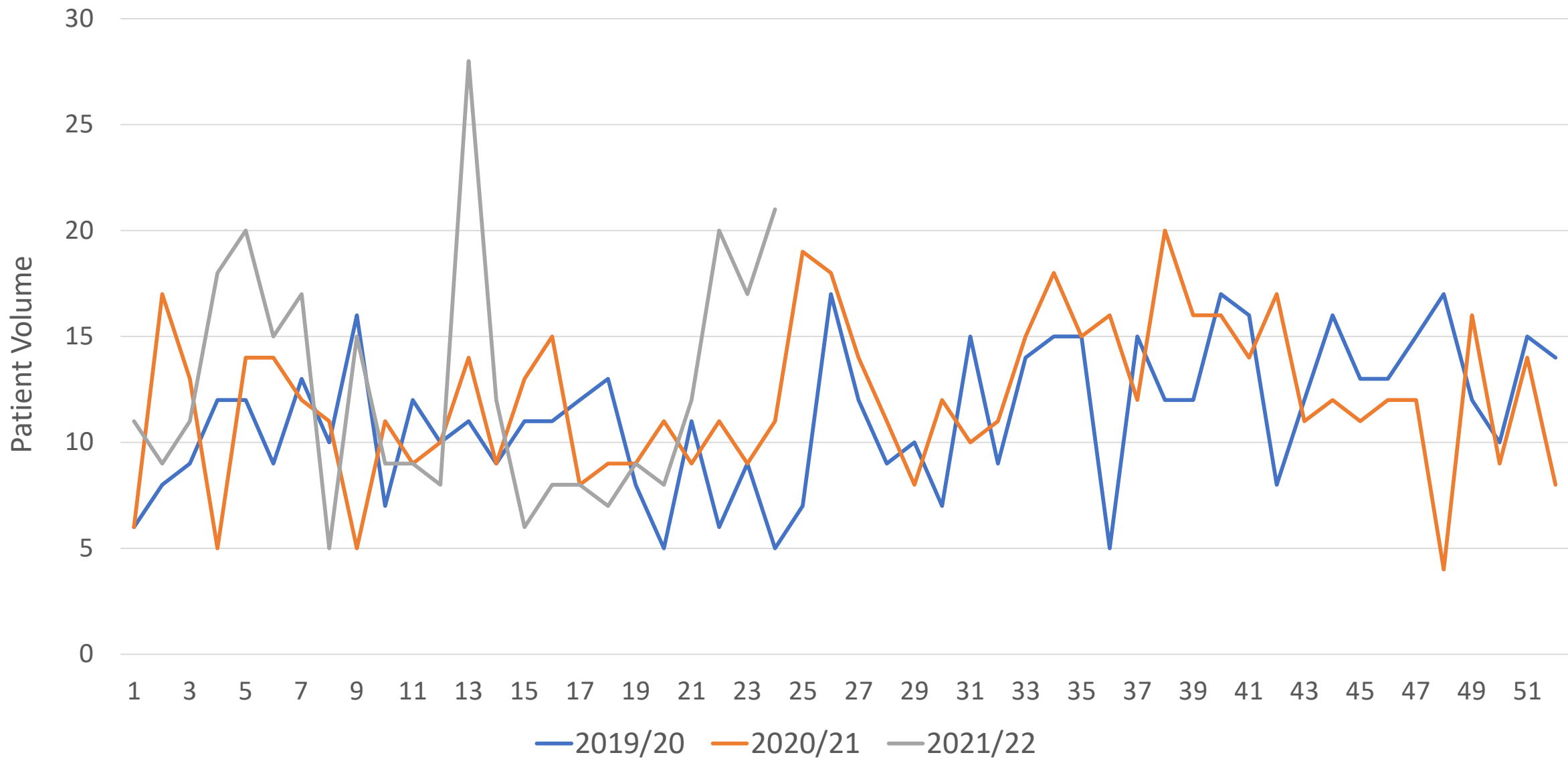
June 27, 2021



Daily CTAS 1 Volume VGH



Weekly ICU Consults



ility: VGH

Department: ED

Both

Empty

Occ

Order Status

Triage

Al...	Chief Complaint ▲	IFD	CR	Certif
5	Heat Related Illness, Looks ...	N		
92	Heat Related Illness, Looks ...	N	R	
75	Heat Related Illness, Looks ...	N		
83	Heat Related Illness, Looks ...	N	M	
59	Heat Related Illness, Looks ...	M		
85	Heat Related Illness, Looks ...	N		
84	Heat Related Illness, Looks ...	N		
90	Heat Related Illness, Looks ...	N	R	
85	Heat Related Illness, Looks ...	N		
67	Heat Related Illness, Looks ...	M		
81	Heat Related Illness, Looks ...	N		
R 53	Heat Related Illness, Looks ...	N		
41	Heat Related Illness, Looks ...	N		
82	Heat Related Illness, Hemody...	N	M	

Triage Pt



Dr. Sarah Henderson – Scientific Director, Environmental Health Services at the BC Centre for Disease Control



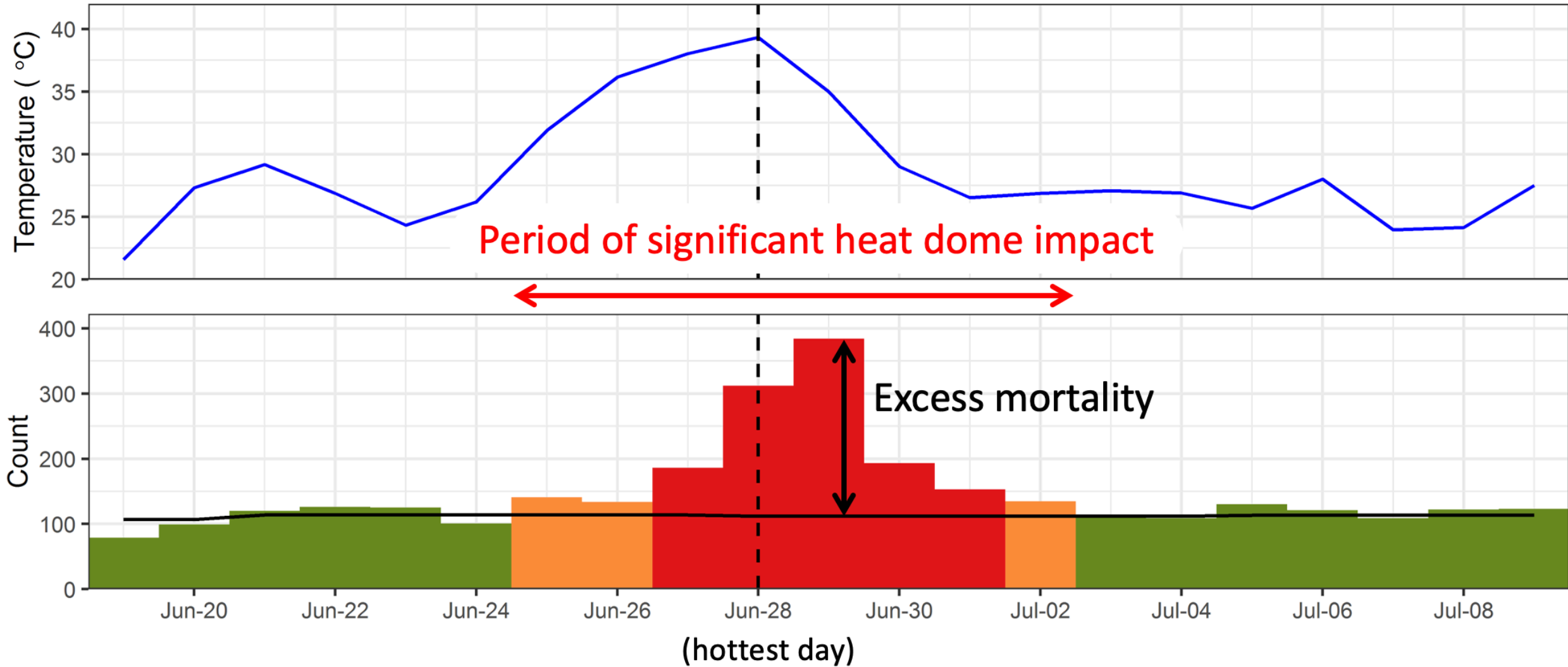
THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

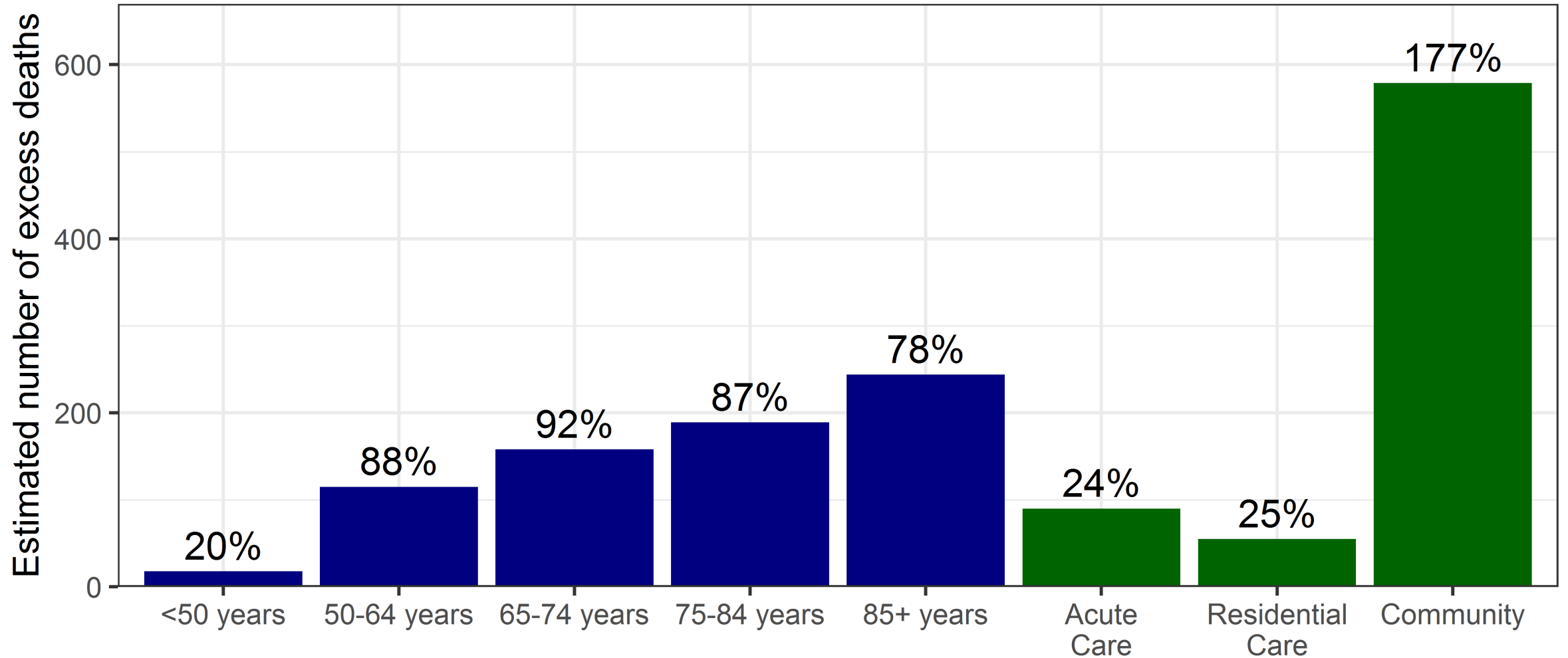
Faculty of Medicine

Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)

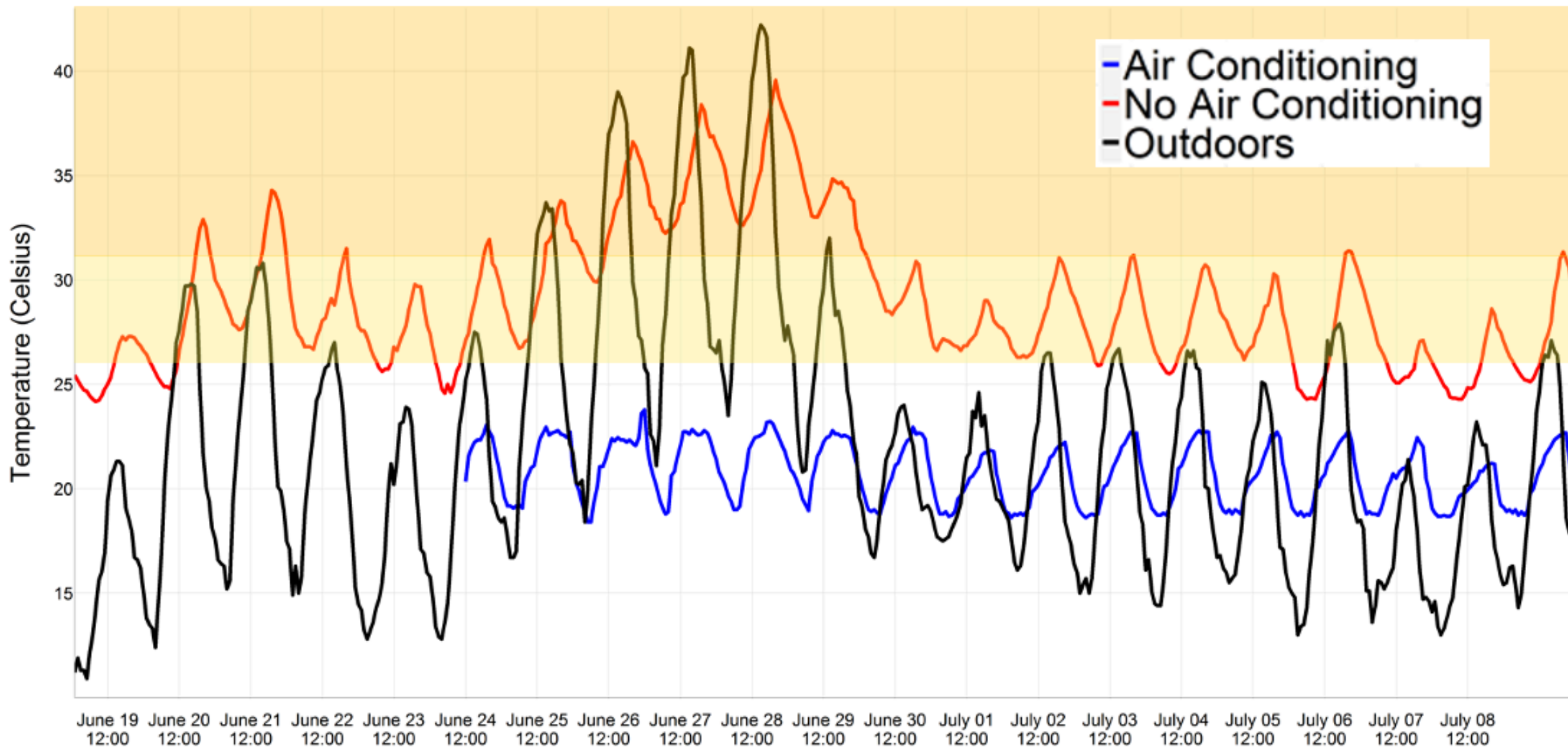
740 excess deaths over 8 days, 250 on July 29



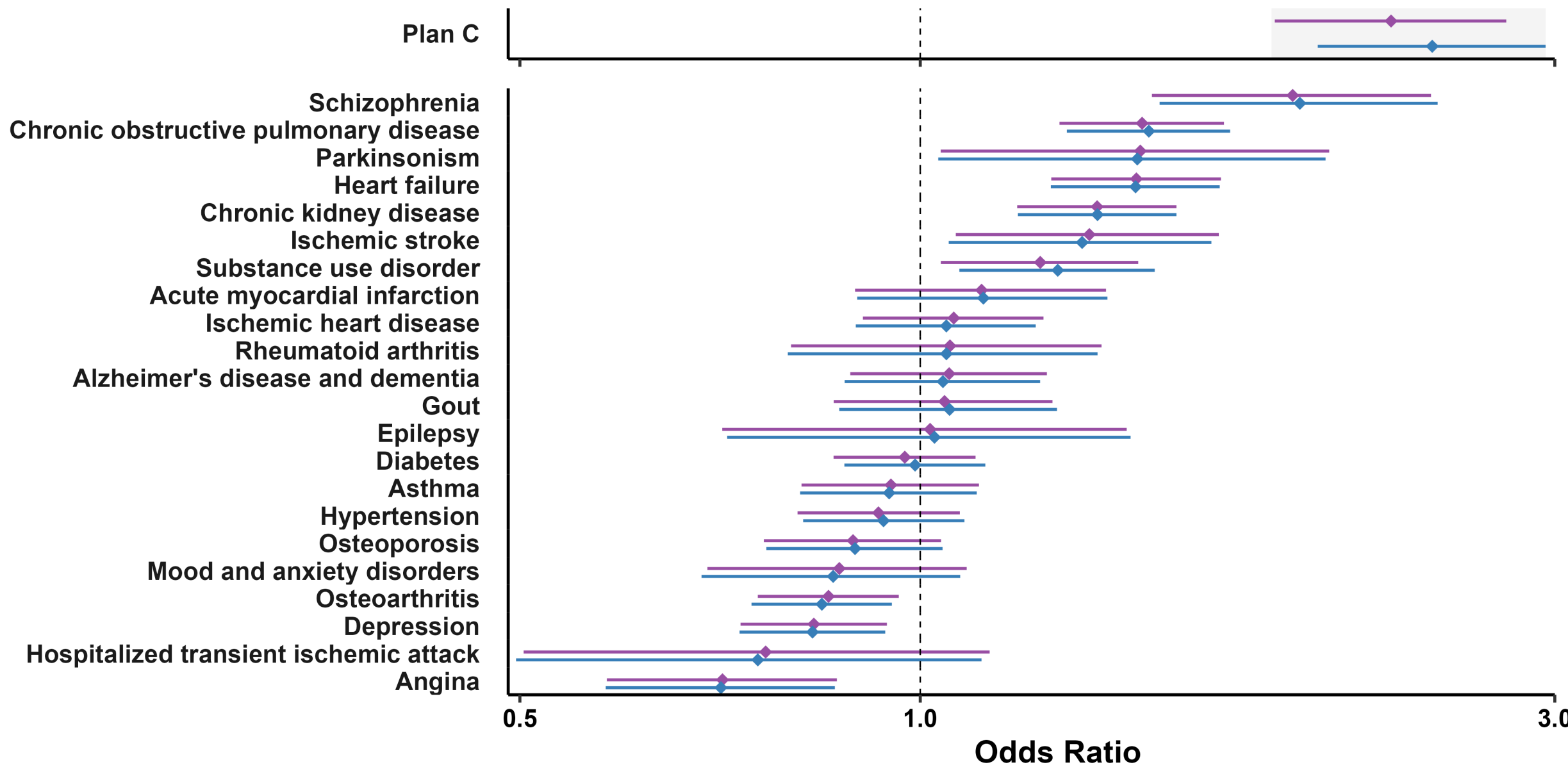
Most excess deaths were in the community



People died because it was hot *inside*



- ◆ All diseases model*, adjusted for individual-level and area-level deprivation
- ◆ All diseases model*, adjusted for individual-level deprivation



*adjusted for age, sex, care setting group, and health region of residence

Dr. Emily Newhouse – Medical Health Officer, Population and Public Health, Fraser Health



THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

Faculty of Medicine

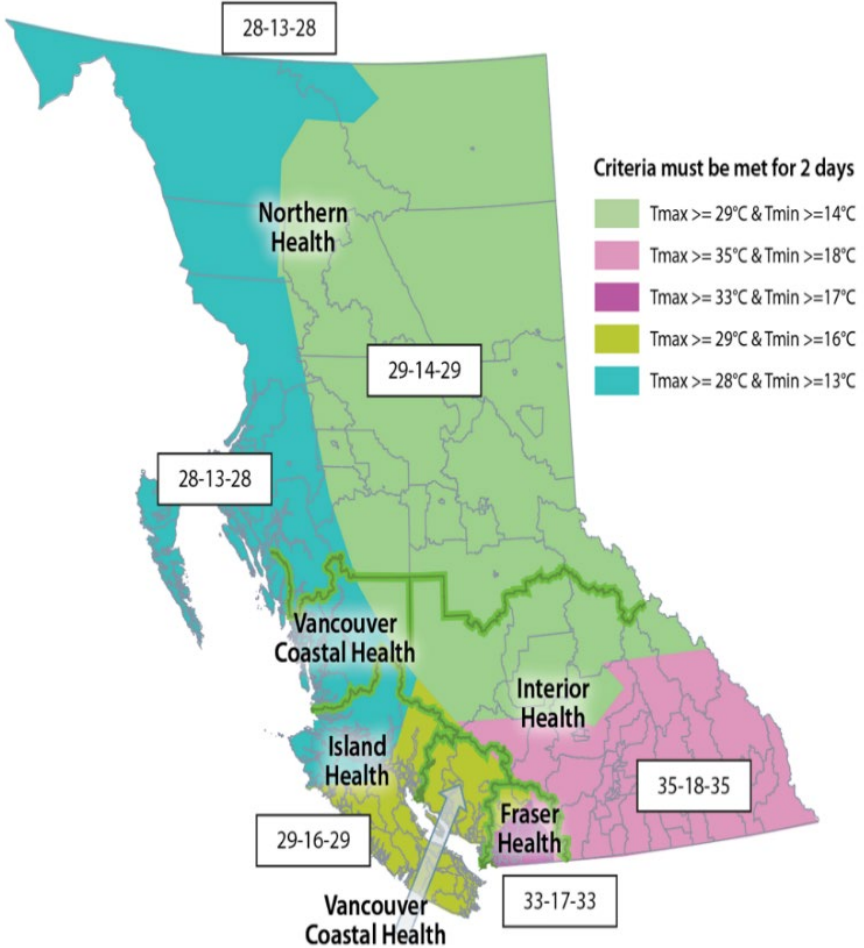
Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)

Iterative consultation, analysis, communications, resource development and planning

The collage features several key documents and graphics:

- PreparedBC Extreme Heat Preparedness Guide:** A guide from the British Columbia government, featuring a large thermometer graphic and a table of contents:
 - PAGE 1: Rapid risk assessment checklist
 - PAGE 2: Recognizing and responding to heat-related illness
 - PAGE 3: In-person health checks
 - PAGE 4: Remote health checks
 - PAGE 5: Measuring body and room temperature
- LIVED EXPERIENCE WITH EXTREME HEAT:** A report titled "Final Report to the Climate Change Panel" by Lilia Yumagulova, Tira Okamoto, and Erica Crook, dated April 2022. It includes a map of the Lower Mainland of BC (New Westminster, Surrey, Newton, White Rock) with heat risk levels indicated by red shading.
- EXTREME HEAT:** An informational poster with the following sections:
 - Signs of Heat Exhaustion:** Skin Rash, Heavy Sweating, Feel Dizzy, Feel Sick or Throwing Up, Rapid Breathing and Heartbeat, Headache, Trouble Concentrating, Muscle Cramps, Extreme Thirst, Dark Urine and Urinate Less.
 - Signs of Heat Stroke:** High Body Temperature, Drowsy or Fainting.
 - Cool Off:** Go somewhere with air conditioning, Cool off with water, Never rely on fans.
 - Keep the space cool:** Keep shades and blinds closed, If you have air conditioning, keep windows closed, If you don't have air conditioning, open windows at night.
 - Plan ahead and stay informed:** Check the weather forecast, During the summer months both heat and wildfire smoke can be a health concern.
- EXTREME HEAT PREPAREDNESS:** A document titled "SUMMER HEAT, SMOKE AND HEALTH: RECOMMENDED ACTIONS FOR OWNERS AND MANAGERS OF RENTAL AND/OR STRATA HOUSING". It includes an image of an air conditioner and text about barriers to staying cool.
- Be prepared for heat this summer:** A poster with the URL fraserhealth.ca/heatsafety and the Fraser Health logo.
- Other graphics:** A large thermometer graphic on the left, a map of Canada at the bottom, and a photograph of a modern building interior with large windows and plants.

BC Heat Alert and Response System



Alert level	Heat Warning	Extreme Heat Emergency
Public health risk	Moderate (5% increase in mortality)	Very high (20% or more increase in mortality)
Descriptor	Very hot	Dangerously hot
Historic frequency	1-3 per summer season	1-2 per decade
Criteria	Southwest = 29-16-29* Fraser = 33-17-33* Southeast = 35-18-35* Northeast = 29-14-29* Northwest = 28-13-28* *(Daytime high, nighttime high, daytime high)	Heat warning criteria have been met and forecast indicates that daily highs will substantively increase day-over-day for 3 or more consecutive days

Dr. Glen Kenny - Lead Investigator, Operation Heat Shield Canada; Director, Human and Environmental Physiology Research Unit, University of Ottawa



THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

Faculty of Medicine

Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)

Question: Should indoor temperature be maintained at or below 26°C during hot weather?

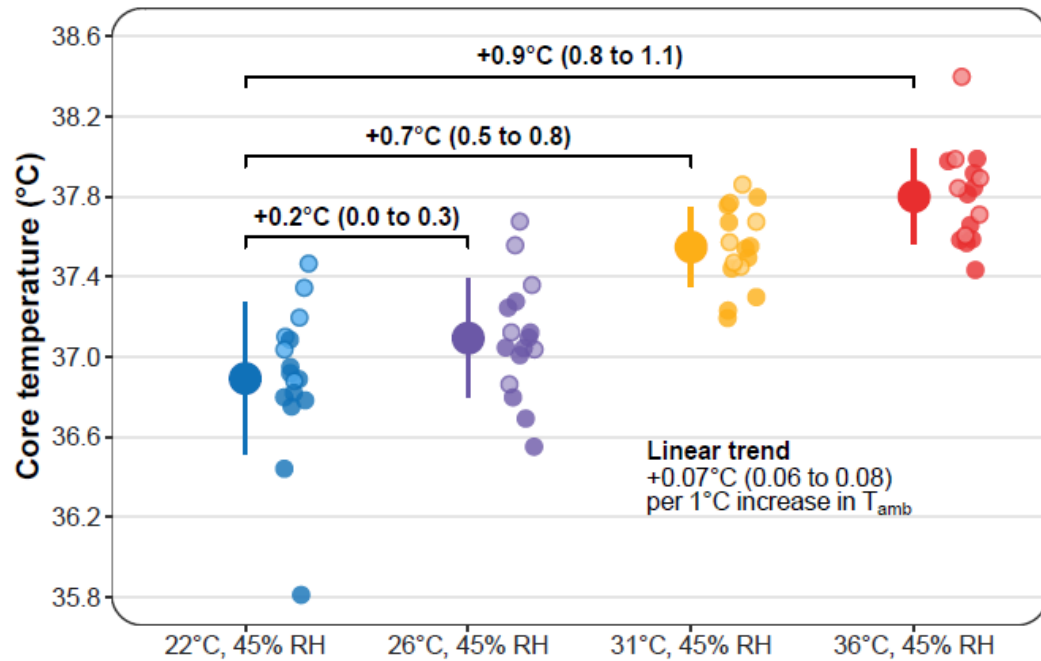
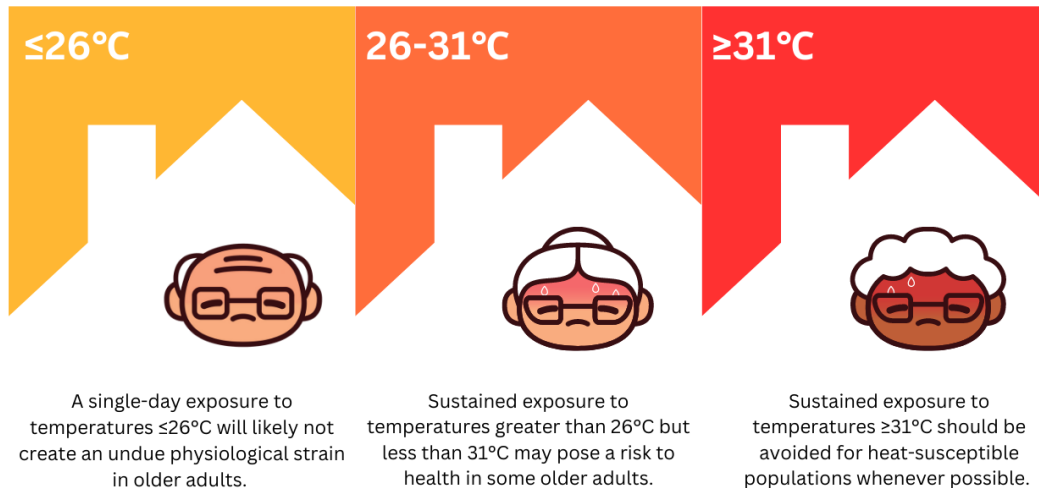
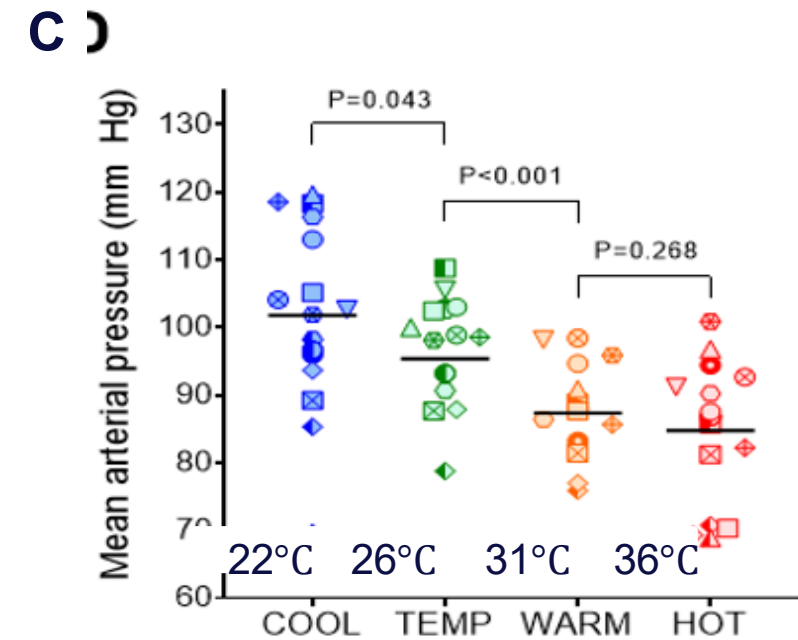
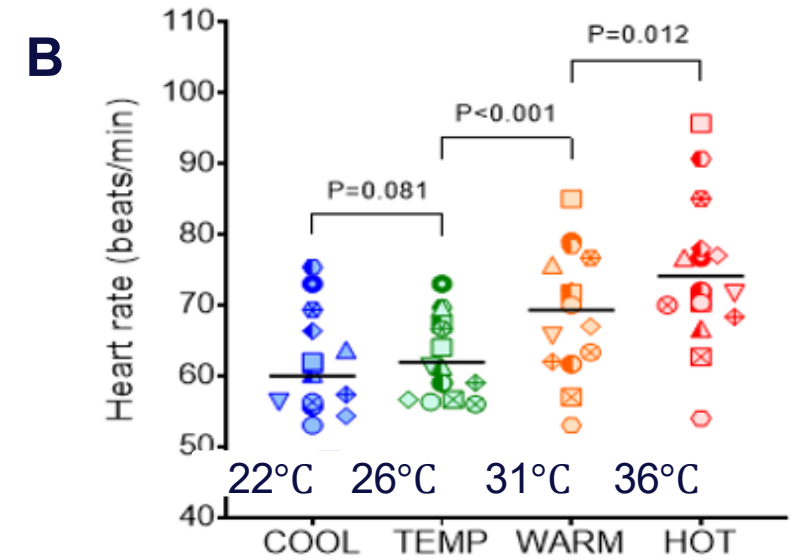


Figure. Core temperature (panel A), heart rate (panel B) and mean arterial pressure (panel C) in 16 older adults over an 8-hour exposure for each condition.



Question: Is briefly visiting a cooling center effective for reducing physiological indicators linked with heat-related adverse health outcomes in older adults during heat waves?

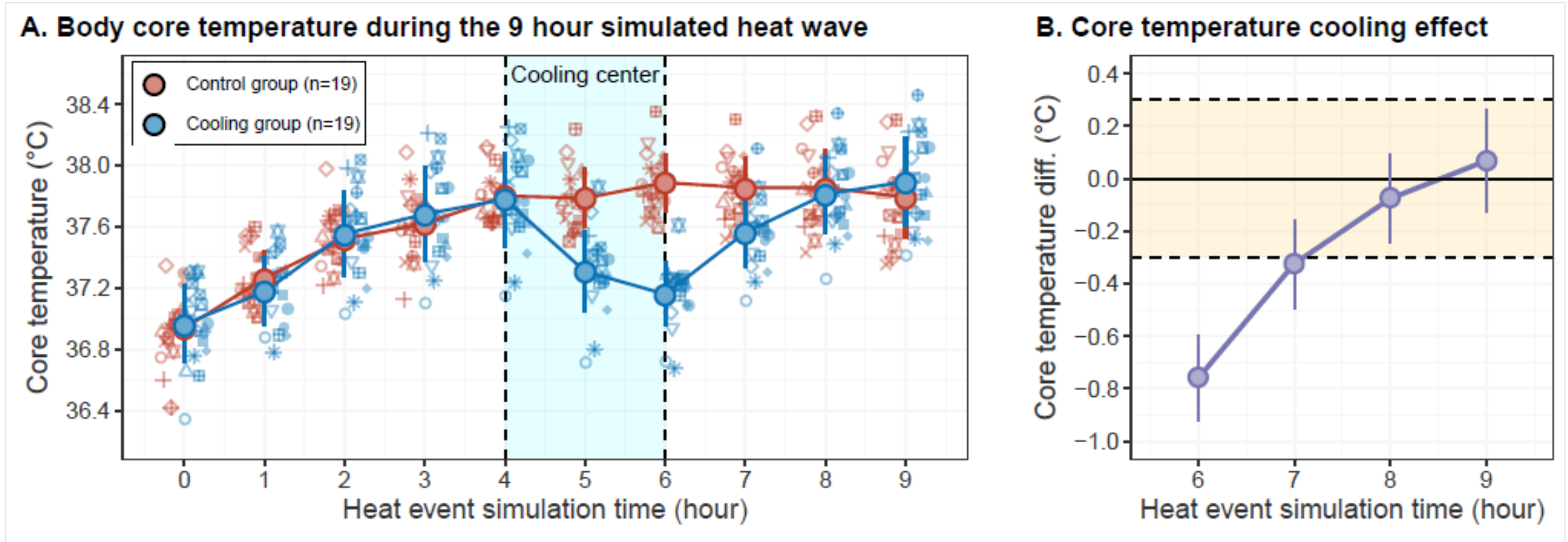
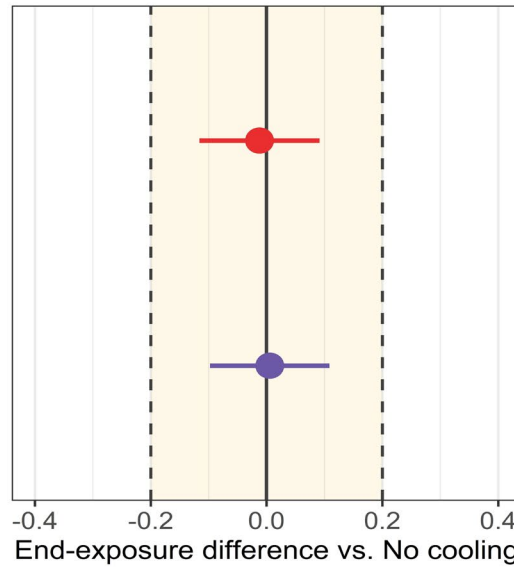
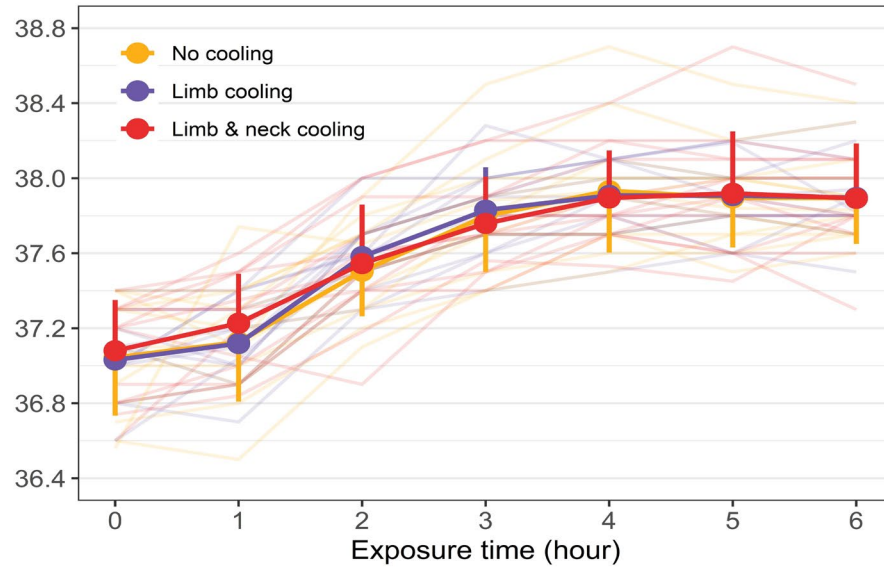


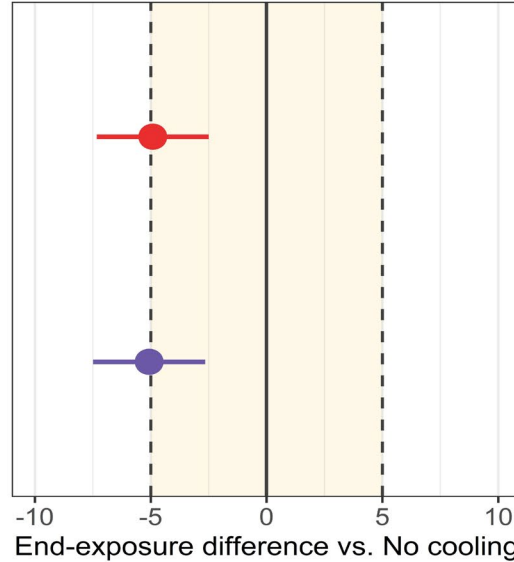
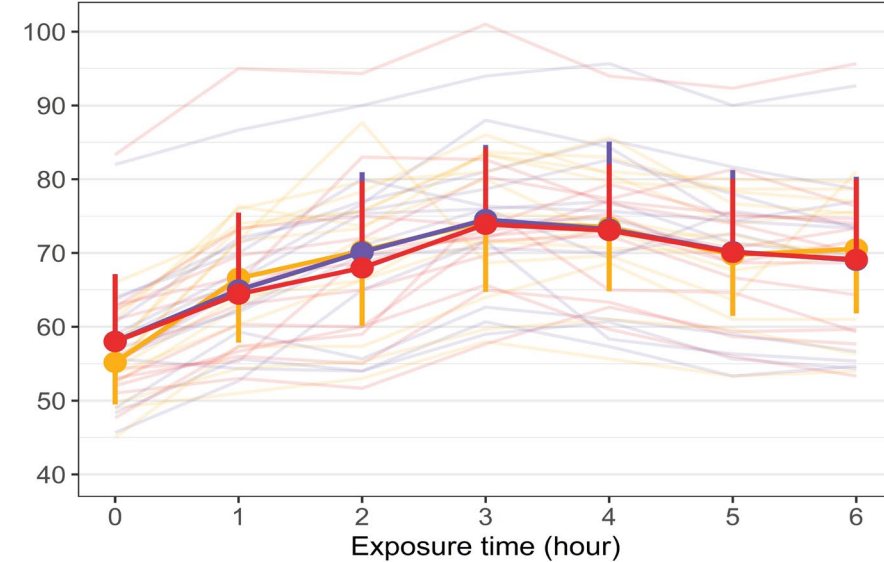
Figure. Panel A: core temperature (rectal) at the end of each hour of the 9-hour extreme heat event simulation. The 2-hour cooling center intervention is denoted by the blue shaded area. Panel B: estimated mean difference in core temperature between the cooling and control groups (cooling–control). Data were statistically equivalent within $\pm 0.3^{\circ}\text{C}$ if the confidence interval fell within the gold-shaded area.

Question: Is limb immersion and neck cooling an effective cooling strategy for older adults?

A. Rectal temperature (°C) 38°C, 35% RH



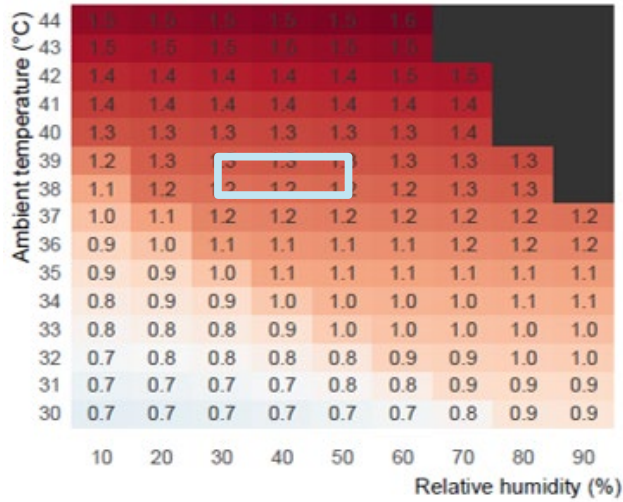
B. Heart rate (beats/min)



Question: Should fans be used during extreme heat events to mitigate heat strain in older adults?

D. Core temperature increase without fan use

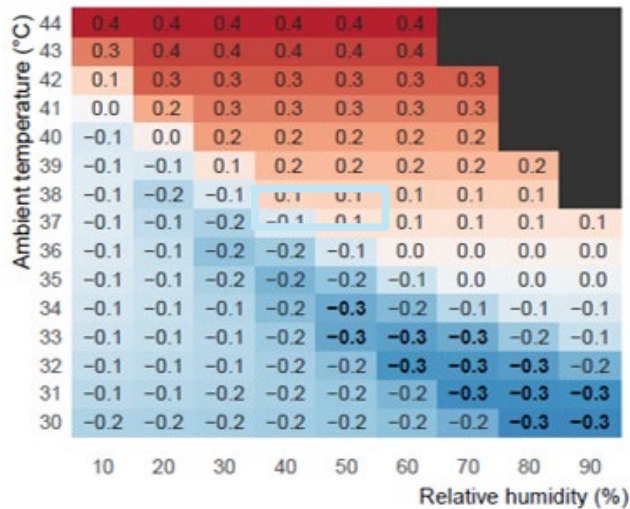
Simplified heat balance model for an older adult (65+ years)



36°C, 45% relative humidity

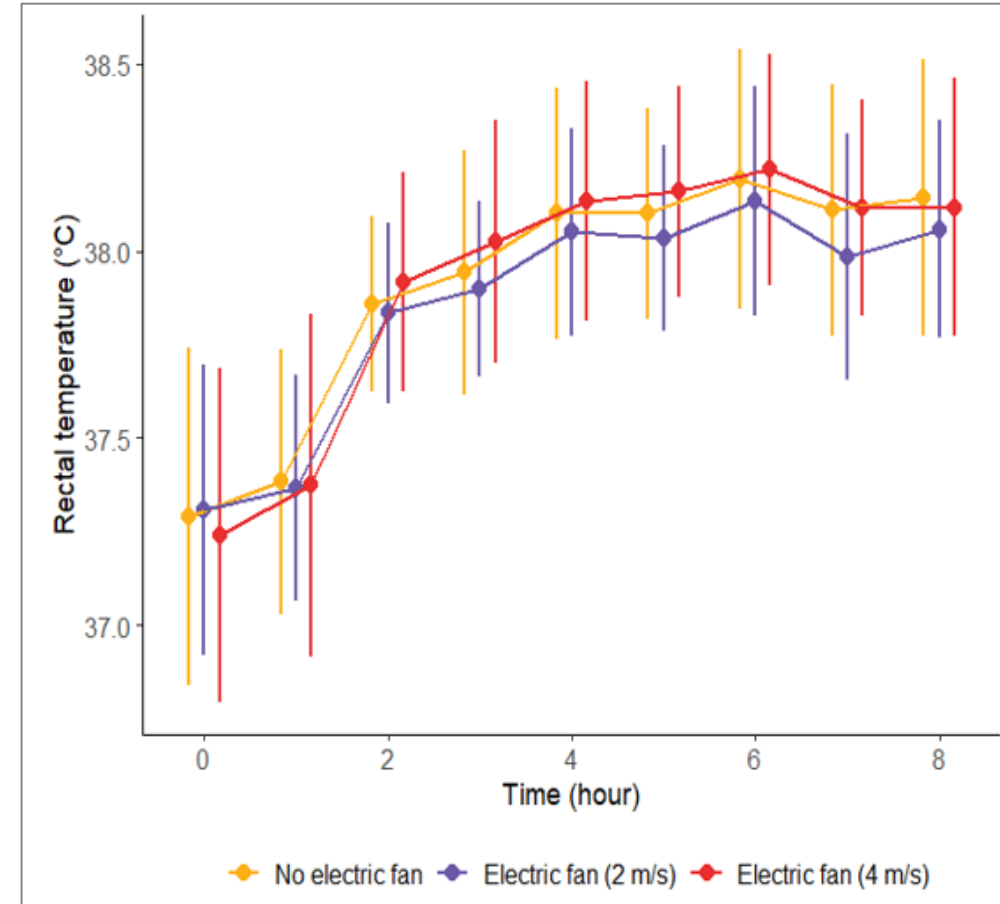
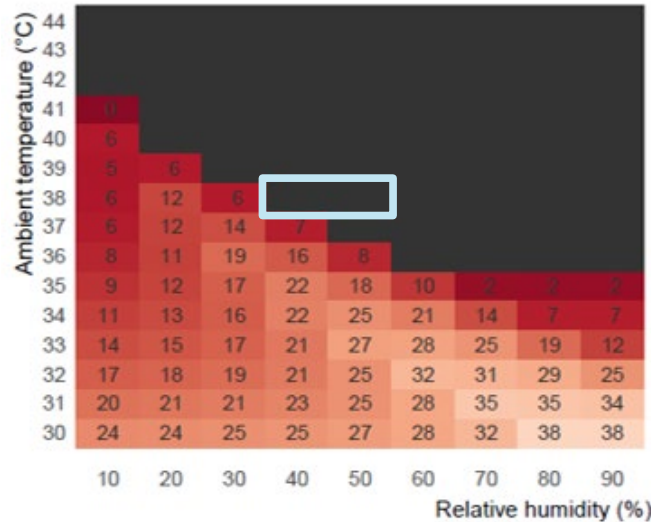
E. Core temperature difference with fan use

Simplified heat balance model for an older adult (65+ years)



F. Fan effectiveness vs. air conditioning

Simplified heat balance model for an older adult (65+ years)



Brooks Hogya - Director of Disaster Risk Reduction and Resilience; BC Emergency Health Services



THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

Faculty of Medicine

Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)

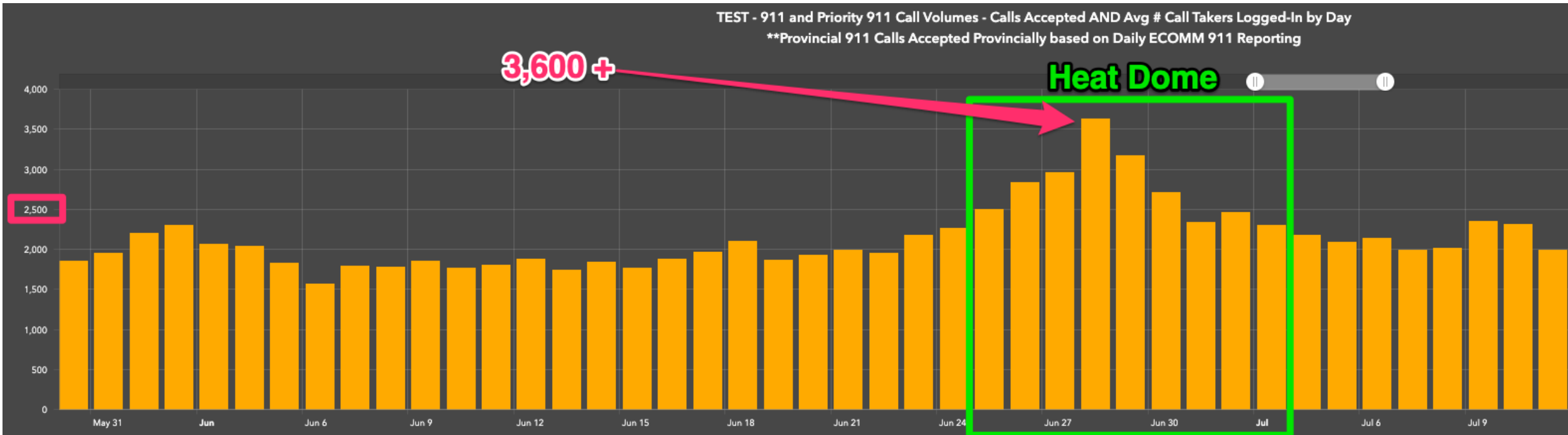
Heat Dome 2021



CALLS INTO DISPATCH

Record-breaking:

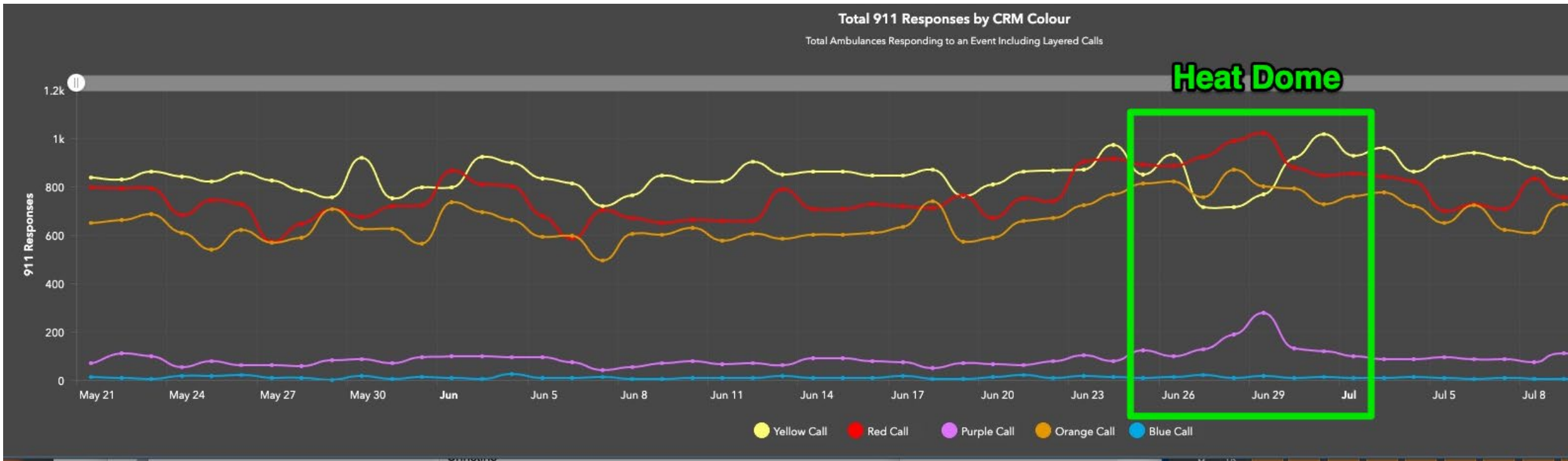
- Calls into dispatch – six days in a row



HIGH ACUITY CALLS

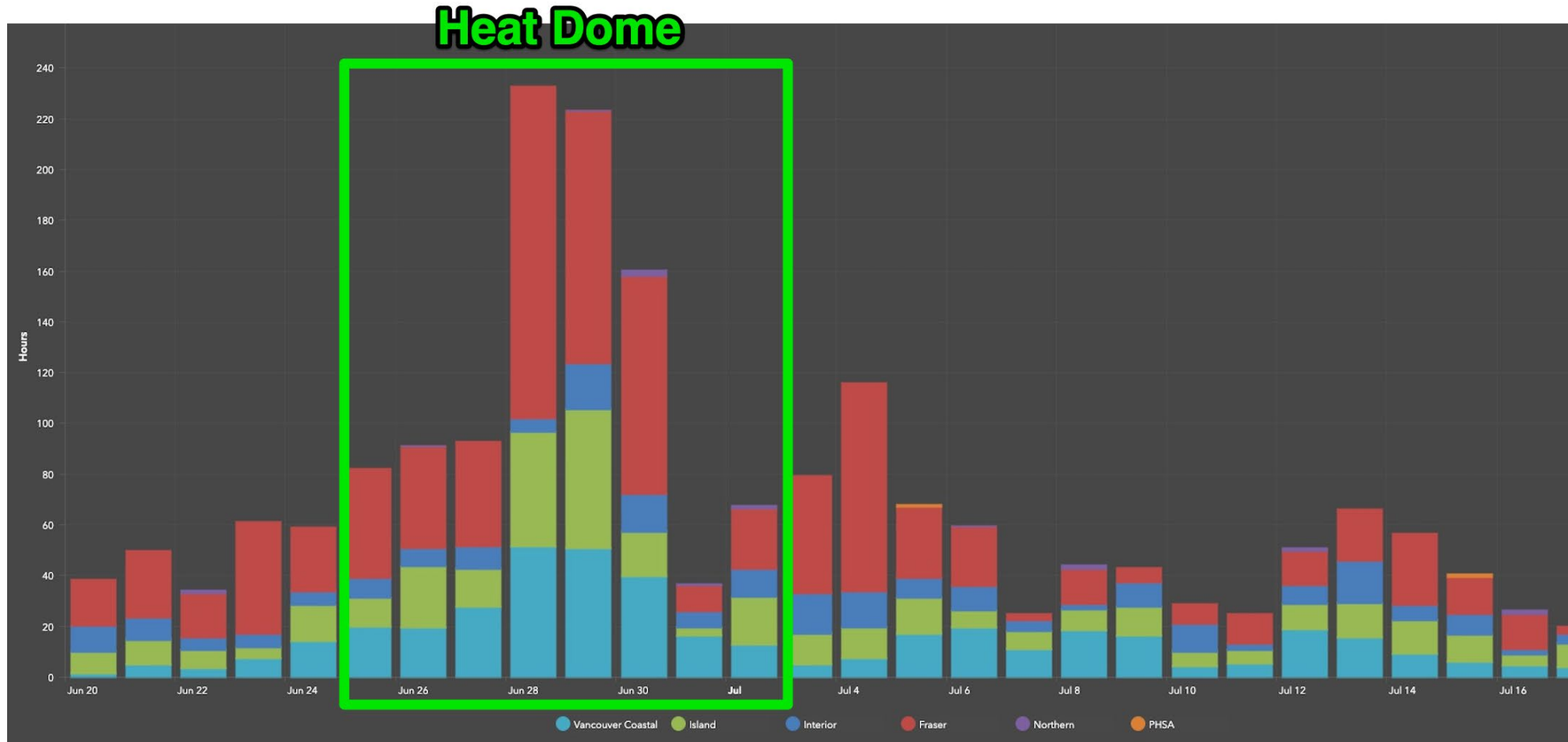
Record-breaking:

- Purple responses
- Cardiac arrests n=65 on 28th, n=88 on 29th



OFF LOAD DELAYS

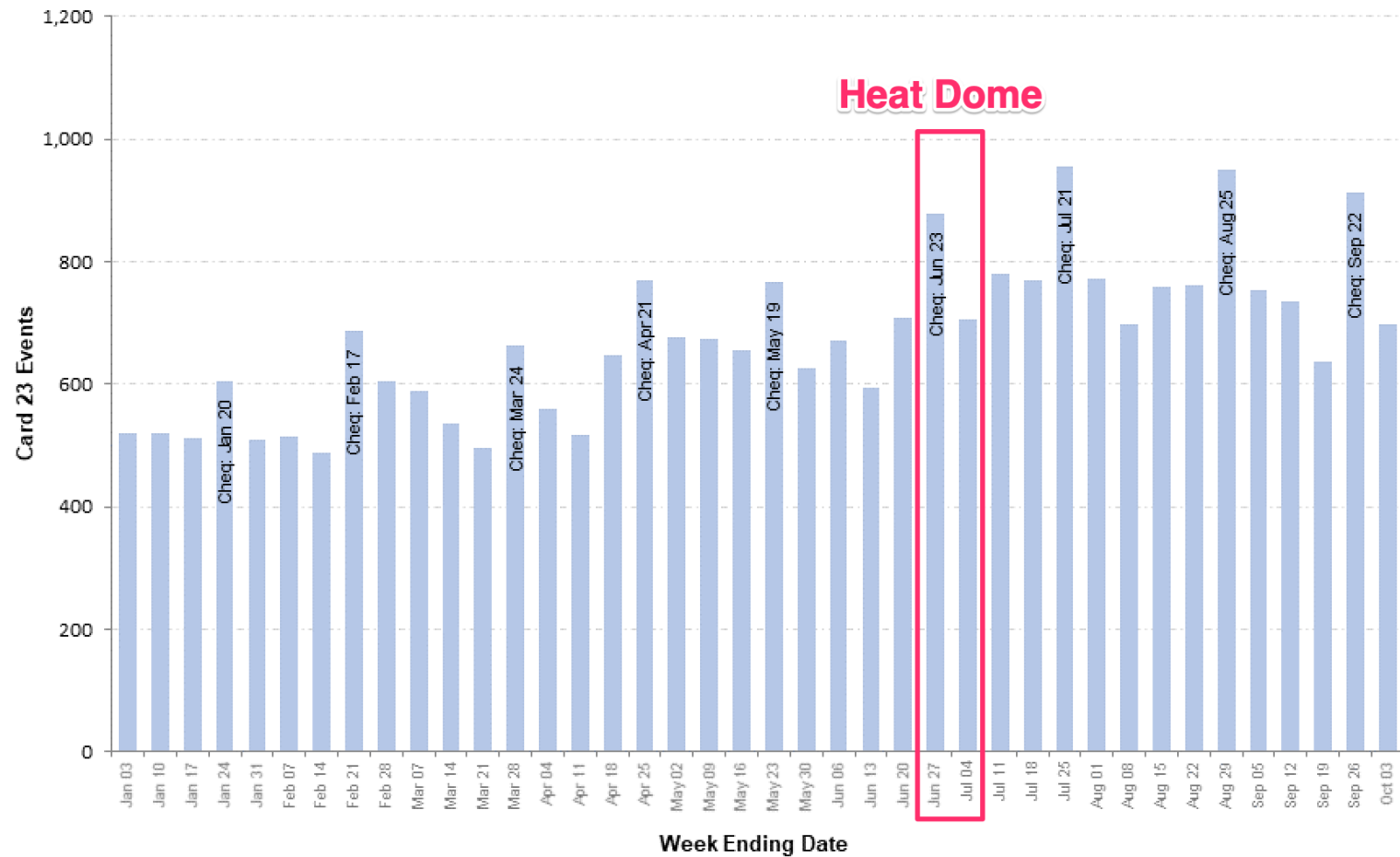
Significant OLD in Fraser (red), Vancouver Coastal (blue), Island (green) Health Authorities



Card 23

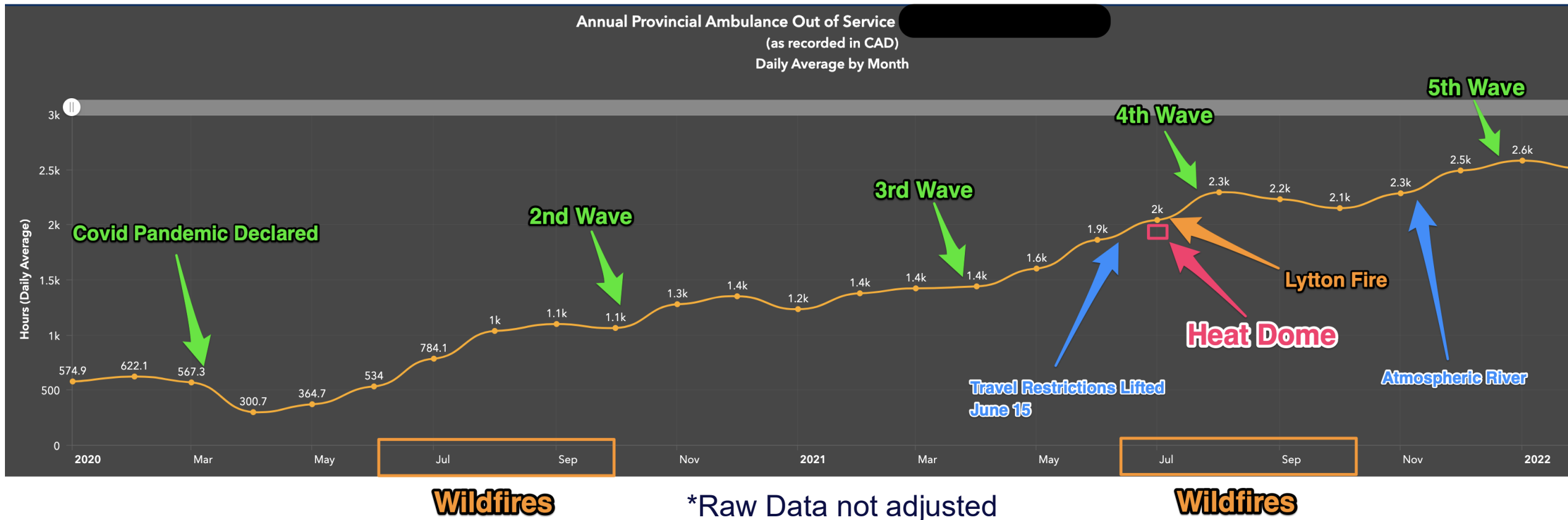
Opioid Crisis is an underlying pressure

MPDS Card 23 Overdose/Poisoning Events by Week - Province - Oct 03, 2021
with Income Assistance Cheque Dates



Contributing Factors

- COVID
- Wildfires
- Staffing



Dr. Kyle Merritt – MD, CCFP-EM



THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

Faculty of Medicine

Ask your questions: [slido.com](https://www.slido.com) | [#heatdome](https://twitter.com/heatdome)



Canada has 1st 'climate change patient' in world

TIMESOFINDIA.COM / Updated: Nov 10, 2021, 08:25 IST

yahoo!news | Yahoo News Australia

Doctor reveals why he wrote 'climate change' on patient's medical chart

euronews.green

NEWS

CLIMATE

NATURE

LIVING

ECO-INNOVATION

OPINION

SERIES 

Frustrated doctor diagnoses woman with 'climate change' in world first

COLUMN: Know the risk factors of heat-related illness

B.C. heat victims in 2021 were mostly older adults with existing health concerns who lived alone

[BLACK PRESS SUBMITTED](#) / Jul. 21, 2022 11:00 a.m. / [COLUMNISTS](#) / [OPINION](#)

COLUMN: Support for seniors needed during climate change

Nelson's Dr. Marian Berry writes about the mental health impact on seniors

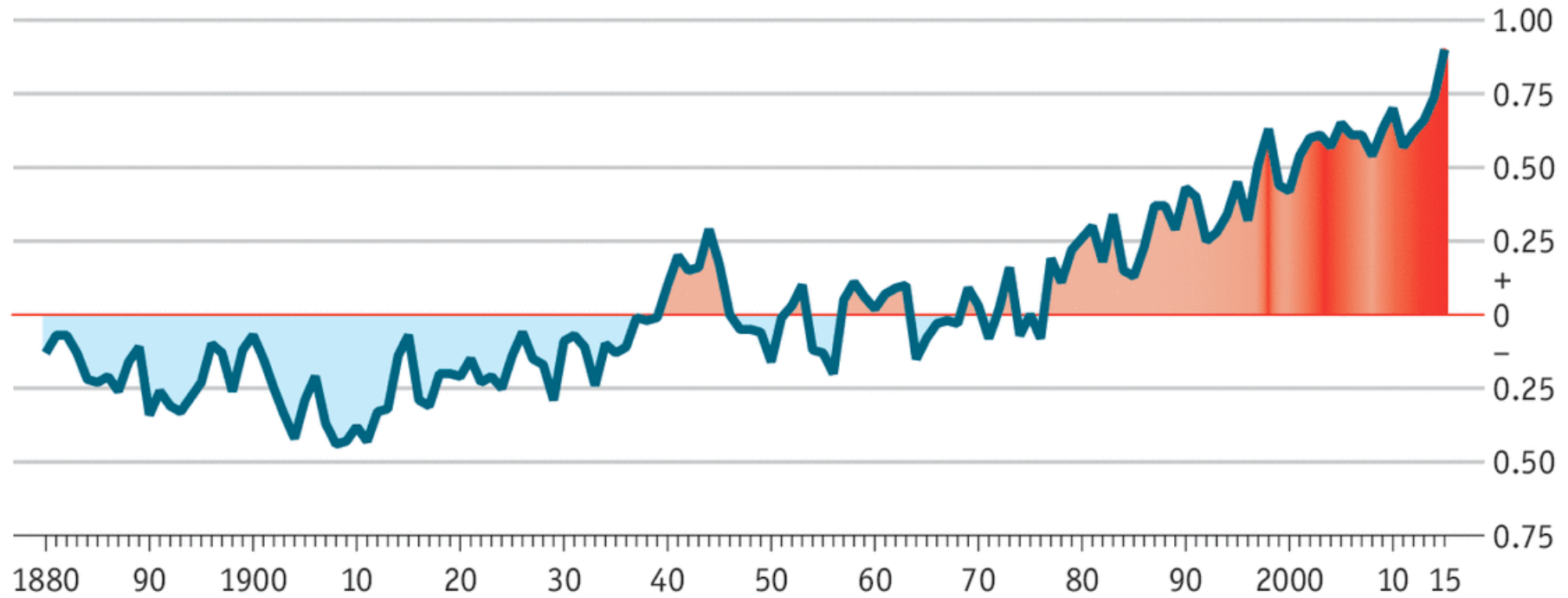
[BLACK PRESS SUBMITTED](#) / Mar. 9, 2022 12:00 p.m. / [OPINION](#)



Sizzling

Global surface temperature, deviation from 20th-century average, °C

15 hottest years



Source: NOAA

Economist.com