



UK Health  
Security  
Agency

# Building health system resilience

## Heat resilience in UK hospitals: Thematic Assessment Report

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# Background on heat resilience in hospitals

- Indoor temperatures exceed 30°C when external temperatures much cooler
- 90% of hospital buildings estimated to be vulnerable to overheating
- One third of heat-related deaths occur in hospitals
- Understanding the impact of rising temperatures, opportunities and trade-offs of heat-resilient interventions is vital to strengthen and improve future health system resilience



# Examples of how heat impacts hospitals

## **'My hospital room is unbearable': how the heatwave is affecting Britons**

As the UK experiences some of its hottest ever May weather, five people share their concerns - and tips for keeping cool

## **GPs' warning as heat causes surge in A&E visits**

## **Guy's and St Thomas' systems hit by 'ludicrous' heatwave**

## **Heatwave sparks record number of ambulance callouts**

## **'Only call if life-threatening': London ambulance plea after heatwave sparks busiest day since pandemic**

Days of record-breaking heat across the UK saw London's paramedics inundated with emergency calls

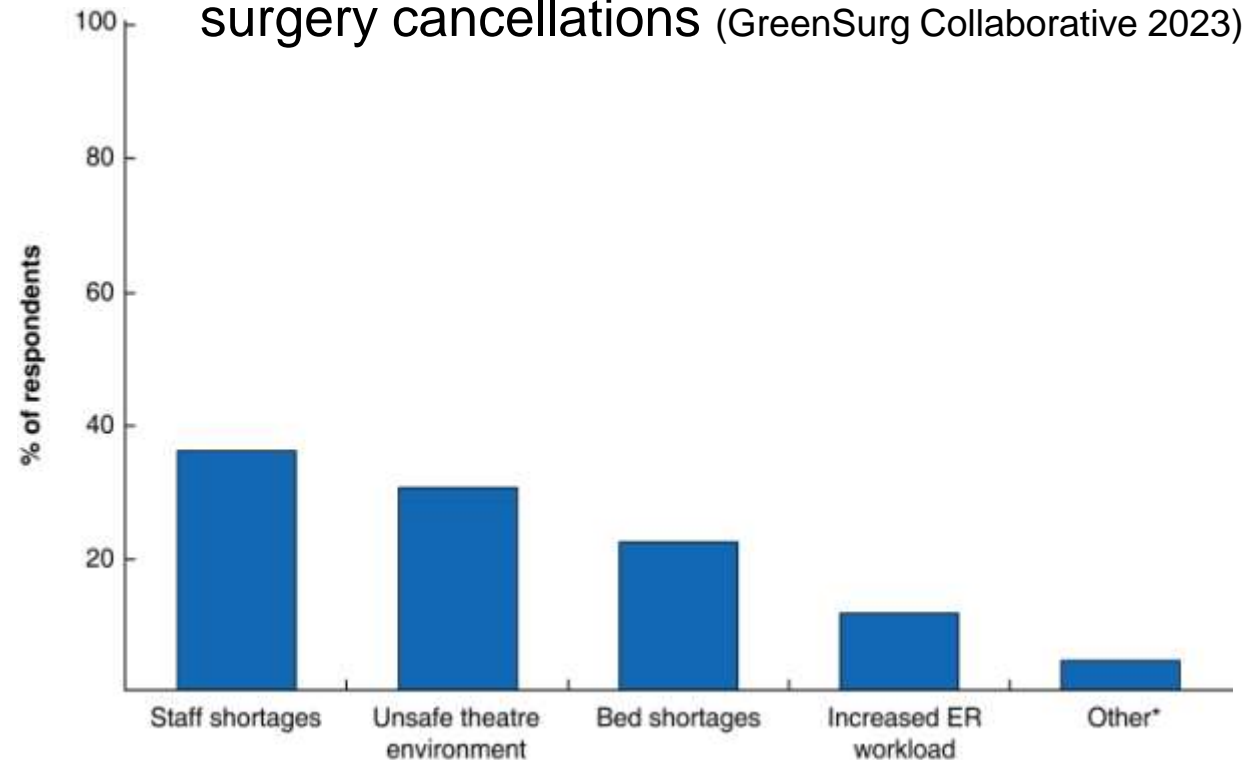
**Climate change: UK hospitals urgently need cooling systems as deaths and admissions are set to rise, government backed report warns**

*BMJ* 2026 ; 393 doi: <https://doi.org/10.1136/bmj-2026-139955> (Published 22 May 2026)

# Examples of how heat impacts hospitals

- 90% of 1,000 healthcare professionals reported occupational heat stress (Davey et al. 2024)
- 20% reported heat-related absenteeism averaging 2.2 days (Davey et al. 2024)
- Extreme heat caused operating theatre and MRI room closures, loss of critical beds, equipment malfunctions (Brooks et al 2022)
- Clinical IT systems failure at Guy's & St Thomas' hospital prevented access to patient records – paper & pen processing

- 85% of surgeons, anaesthetists and critical care doctors said hospitals lacked plans to maintain elective surgical safety and capacity in summer (GreenSurg Collaborative 2023)
- 18.5% reported heatwave led to elective surgery cancellations (GreenSurg Collaborative 2023)



Source: GreenSurg Collaborative, 2023

# Question: Observed impacts of heat in hospitals

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# Assessment Reports

## Activities

Lead assessments

### Health Effects of Climate Change (HECC) in the UK

State of the evidence 2023



Published Dec 2023

### Climate change and mental health: thematic assessment report



Published Nov 2025

## Thematic assessment reports

- Heat-resilient hospitals
- Healthy homes
- Healthy landscapes

### Future Scenarios

Analysis of future health impacts, quant and £

# Summary of scoping workshop – January 2026

- Convened stakeholders to conduct a research prioritisation exercise
- Aims were to refine scope, identify priority research needs, clarify uncertainties and agree next steps
- Representatives from UKHSA, NHS, DHSC, Wales, Scotland & Northern Ireland

## Report themes identified:

- Theme 1: Understanding the pathways by which overheating in hospitals impacts health and service delivery
- Theme 2: Actions that can be taken to reduce overheating
- Theme 3: Developing the case for action



# Questions the report will answer

- What **evidence** is there on the impact of heat on hospitals?
  - What are the **pathways** (e.g. impacts on patients, staff or hospital functions)?
  - What are the **mechanisms** (e.g. physiological stress, sleep disruption, staff performance)?
  - When are **heat events** likely to occur?
- What **actions** (such as mechanical/behavioural etc) can be taken to reduce the impacts of overheating in hospitals?
  - What are the **potential risks** of interventions?
  - What is the **feasibility** of implementation?
  - What are the **economic** benefits and costs?
- What current evidence is there around the estimated **economic costs** of overheating impacts in hospitals in the UK?
- What is the estimated future impact on English hospitals in terms of exposure to extreme heat events and **hospital admissions** under a future climate warming scenario of 2°C above preindustrial levels by 2050?
- What **critical gaps in evidence** remain towards effectively answering the above questions?

# In and out of scope

## **In scope**

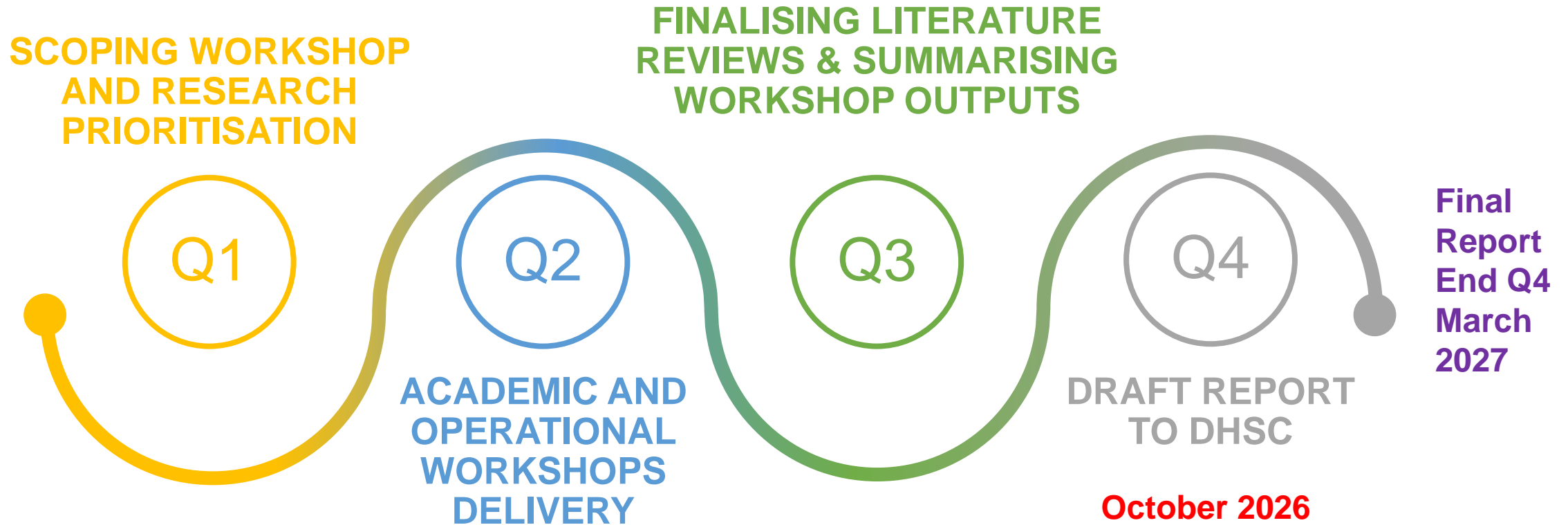
- Pressure: high indoor temperatures
- Setting: secondary care settings
- Audience: DHSC, NHS Trust and Estate managers, senior clinicians
- Outcomes: Indoor temperature in hospital settings, thermal comfort, mortality and morbidity in hospital patients, disruptions to service delivery (e.g. cancelled operations).
- Geography: England, with scope to expand to 4 Nations on discussion.

## **Out of scope**

- Pressure: other extreme weather events
- Setting: Primary care settings and care homes
- Outcomes: Impacts on staff attendance, performance and mental health

UKHSA's role is not for implementation within the health system.

# Assessment report roadmap: where are we now?



- Scoping workshop held in January
- Academic workshop held in April
- Pathways and cooling interventions literature reviews both underway
- Operational workshop planned for late June

# Research projects in this space



## Staff, patient & operational impacts

- THERMOCARE  
*Davide Filingeri, University of Southampton*
- Heat-Resilient Paediatric Care:  
*Chengzhi Peng, University of Sheffield*
- Impacts of heat in paediatric secondary care in England  
*Becca Elson, GNHS*



## Cross-cutting projects

- HEARTH  
*Rajat Gupta, Oxford Brookes*
- Climate Change and Health Security HPRU  
*Shakoor Hajat, LSHTM*
- ARCHI  
*Lauren Davis, Care Without Carbon*
- ETHOS  
*Justin Sheffield, University of Southampton*
- CHARNN  
*Chengzhi Peng, University of Sheffield*



## Estate / built environment

- Digital twins for hospital heatwave resilience strategies  
*Federica Pascale, Anglia Ruskin University*
- Developing a Decision-Support Framework for Climate Responsive Building Envelopes in UK Hospital Buildings  
*Federica Pascale, Anglia Ruskin University*
- Integrated Sustainable & Resilient Healthcare Real Estate (INSURE HRE)  
*Federica Pascale, Anglia Ruskin University*

## Upcoming workshop: operational delivery

- We will be hosting a virtual workshop 0900-1230 on Tuesday 23<sup>rd</sup> June
- We would like to invite operational colleagues from across the NHS to join the workshop to share insights into
  - Frontline experience of heat periods and heatwaves in hospitals
  - Current utilisation of heat adaptation measures in hospitals including evidence of effectiveness
  - Barriers experienced in the implementation of cooling in hospitals
- The workshop will take place under Chatham House rules
- Scan the QR code to register your interest in attending!



# Question: Cooling measures

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# Question: Barriers to implementing cooling interventions

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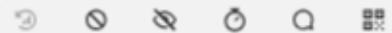
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What are the main barriers to implementing cooling interventions?



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Waiting for participants



# Acknowledgements

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- Kirsty Morrison
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- Tatiana Adamczewska
- Anh Tran

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**QR code to register interest in operational workshop:**



# Pathways of overheating in hospitals

