



2026

Pregnancy in a warming world

The health risks of heat and the case for action in the UK

Introduction

The health consequences of climate change are already being felt in the UK. In the summer of 2022, an estimated 3,000 heat-associated deaths were recorded during a heatwave that saw temperatures exceed 40°C for the first time – a record which was made ten times more likely by climate change.^{1,2,3} The severity of the conditions prompted the UK Health Security Agency and the Met Office to issue the first Level 4 Heat Alert since the national heatwave plan was introduced two decades earlier and led the government to declare a national emergency.⁴

Whilst the 2022 heatwave posed a risk to life across the general population, the health burden of heat falls disproportionately on those with greater physiological vulnerability.⁵ Older people, individuals with underlying health conditions, infants, and pregnant women face significantly elevated risks from exposure to extreme heat – risks that are determined by the body's capacity to respond to thermal stress at particular stages of life.

For pregnant women, this vulnerability is acute and increasingly well-evidenced. A growing body of research demonstrates that heat exposure during pregnancy is associated with a materially increased risk of preterm birth, stillbirth, congenital anomalies, and obstetric complications.⁶ Critically, clinically significant risks to pregnant women arise at temperatures that fall below higher alert thresholds – meaning that existing response frameworks may not be activated at the point where harm is already occurring.

To ensure policy coherence, the specific risks posed to pregnant women from extreme heat must be systematically recognised in climate change adaptation policies as well as in maternal health policy. Currently, pregnant women are inconsistently identified as a vulnerable group in key public guidance documents and overlooked in departmental frameworks. These gaps reflect broader structural weaknesses in the UK's approach to extreme heat adaptation; a tendency toward short-term episodic emergency response rather than long-term resilience planning, as well as a fragmentation of responsibility across government departments and agencies that dilutes accountability for protecting the most vulnerable.

This report sets out the case for a more systematic and coherent approach to protecting pregnant women from the health impacts of rising temperatures. It examines the evidence on heat and pregnancy, identifies the specific policy gaps that

place pregnant women at avoidable risk, and makes targeted recommendations for change – focused on ensuring consistent recognition of pregnancy as a determinant of heat vulnerability across relevant policy and guidance frameworks and embedding resilience to extreme heat in ongoing maternity care policy reforms.

The case for action

In recent years there has been growing political and public concern about the broader state of maternity and neonatal services in the UK. The National Maternity and Neonatal Investigation, launched by the Secretary of State in June 2025 and chaired by Baroness Amos, was established with the express aim of driving urgent improvements in patient care and safety, and providing bereaved families with accountability.⁷ Its recommendations, expected in spring 2026, will inform a new national action plan produced by the National Maternity and Neonatal Taskforce.^{8,9}

This renewed political focus on maternal health is both timely and necessary. The most recent MBRRACE-UK data reveals that overall maternal mortality in the UK was 20% higher in the period 2022-24 than in 2009-11, signalling a failure to deliver on the previous government's commitment to halve maternal deaths by 2025.¹⁰ The reforms now being developed must deliver meaningful improvements that can be sustained into a future that will be significantly affected by climate change.

To ensure that maternity care is of the standard needed both now and in the future, the government must also respond to the emerging and growing risks that climate change poses to maternal health. A systematic review of 198 studies across 66 countries (most of which were high income) found that the risk of pre-term birth increased by 26% with maternal exposure to heat waves. The same review also found elevated risks of stillbirth, congenital anomalies, antenatal bleeding, and prelabour rupture of membranes during heat events.¹¹ These are not marginal risks, and as temperatures continue to rise they will intensify. Compounding the physiological effects, analysis has shown that the number of days on which pregnant women face elevated heat risk has doubled in the UK – with an average of 13 additional risk days per year between 2020-2024.^{12,13}

The vulnerability of pregnant women to extreme heat is increased by an NHS that is not yet adapted for high temperatures, and the impact of this is already being seen. The 2022 heatwave triggered operating theatre closures, critical IT failures, and a surge in emergency calls that placed healthcare services under severe strain.^{14,15} Maternity units are not exempt from these pressures and

unsafe ward temperatures caused alarm to new parents and raised legitimate concerns about the safety of mothers and newborns.¹⁶ As the government looks to adapt the NHS and ensure the health service is prepared for the future, maternity units must be a priority.

It is important to recognise that heat risk to pregnant women is contextual. In the UK, clinically significant risks arise at lower threshold temperatures – a challenge that existing alert and response frameworks are not always designed to address. Research being undertaken by the Wellcome-supported Maternal and Pregnancy Health and Elevated Heat (MAGENTA) project, based in Swansea and London, will help to better understand heat risk and pregnancy in the UK. MAGENTA combines high-resolution heat mapping with direct monitoring of home environments, population-level pregnancy data, and biological sampling. In doing so, it will measure real-world heat exposure and examine how it interacts with deprivation, ethnicity and urban heat to influence pregnancy outcomes, while also shedding light on the underlying biological mechanisms. Findings are expected to be published later in 2026 and will be an important guide for shaping the UK responses.

"When we started talking about it, we were like, 'Should we be doing this in Swansea? Let's get Brazil on board.' However, after reviewing the literature, I realised that extreme heat was a relative, not an absolute concept: the danger lay in a woman's exposure to levels of heat to which she was not acclimatised."

Professor Cathy Thornton,
MAGENTA's biological
research lead¹⁷

A framework for change; recommendations for government

The frequency, intensity, and duration of extreme heat events in the UK is increasing, with growing implications for maternal and neonatal health. While further research will strengthen the understanding of the relationship between heat exposure and pregnancy outcomes in the UK, the existing evidence base is already sufficient to justify taking both preventive policy action and a precautionary approach now. Current national policy frameworks do not yet reflect the scale or systemic nature of the risks facing pregnant women; guidance remains inconsistent across institutions, where maternity services are insufficiently adapted to rising temperatures, and heat-health planning does not consistently respond to the vulnerability of pregnant women.

A more coordinated and forward-looking policy response is therefore required. This response must embed maternal health within the UK's wider climate adaptation and public health resilience agenda, and ensure that maternity reforms account for the realities of a warming climate.

1. Establish a consistent national approach to heat-health risk for pregnant women

Despite growing evidence on the health impacts of extreme heat on pregnant women, their inclusion in public guidance on heatwaves is inconsistent. For example, pregnant women are highlighted as an at risk group in the UKHSA 'Beat the Heat: staying safe in hot weather' guidance for the public, but they are not referenced in, for example, the NHS guidance on heatwaves.^{18,19} This inconsistency risks creating confusion for both the public and healthcare professionals, and may reduce awareness of the risks associated with heat exposure during pregnancy, alongside the measures that can mitigate these risks.

There are also important gaps within national frameworks. The NHS England's Fourth Health and Climate Adaptation Report recognises the broader health impacts of extreme heat, both in terms of heat-related illnesses and the overheating of health facilities, but it does not explicitly identify pregnant women amongst those that are most at risk.²⁰ The Adverse Weather Health Plan (AWHP) Equity Review acknowledges the physiological vulnerability of

pregnant women to heat exposure and the associated risks of poor birth outcomes, but fails to provide concrete protective measures pending further evidence development.²⁰ This risks delaying action despite an evidence base that already demonstrates clinically significant harm.

In addition, there needs to be greater consideration of the risks associated with temperatures that fall below the threshold for 'extreme' heat. Researchers are increasingly recognising that the risks of heat are context-specific and that more moderate temperatures are also associated with negative health outcomes. Current policy frameworks, which are largely orientated around acute heatwave thresholds may therefore underestimate the scale of risk.

Recommendation: The Department of Health and Social Care (DHSC), working with UK Health Security Agency (UKHSA), NHS England, and relevant government departments, should ensure that there is consistency in recognising the vulnerability of pregnant women to extreme heat in both public communications and key policy frameworks.

Priority actions should include:

- An urgent cross-government review of all relevant public guidance, clinical advice, and policy frameworks on extreme heat to identify inconsistencies and gaps regarding the inclusion of pregnant women. This review should be informed by standardised risk classification to evaluate the risk of heat exposure across different vulnerable groups.
- DHSC should be responsible for the mandatory inclusion of pregnant women as an at-risk group in all public health guidance on heatwaves, with clear recommendations on how to minimise risks from exposure.
- Recognising that evidence on effectively reducing heat-health risks in pregnancy is still being generated, UKHSA should adopt a precautionary approach to including measures to protect pregnant women in the 2027-2028 Adverse Weather Health Plan (AWHP), accompanied by professional guidance for maternity and community healthcare providers.

- A review of existing heat thresholds and alert systems should be conducted to ensure they adequately reflect the risks posed by moderate, adverse and cumulative heat exposure for clinically vulnerable populations, including pregnant women. DHSC should work with UKHSA to strengthen the response to lower heat thresholds in the AWHP to more adequately reflect the temperature ranges at which vulnerable groups, including pregnant women, experience clinically significant risks. The revised plan should include measurable actions to minimise risks with clearly identified delivery partners.

2. Embed climate resilience within long-term maternity care policy reform

The UK's maternity and neonatal care system is not currently designed to operate effectively under conditions of increasing heat exposure. This results in an absence of appropriate policies, specific guidance for health professionals in maternity settings, and well-adapted services that remain cool in the face of rising temperatures.

Recent maternity reforms initiatives led by NHS England, such as the overhaul of clinical standards and the Maternal Care Bundle, have rightly prioritised reducing maternal mortality and improving responses to conditions which pose the greatest risk to life.^{22,23} However, climate related risks, particularly extreme heat, are likely to become an increasingly important determinant of maternal and neonatal outcomes over the coming decades and have not yet been sufficiently considered.

Evidence indicates that pregnancy heat-risk days in the UK are increasing significantly with maternity units increasingly experiencing the operational pressures that are associated with overheating.²⁴ Without anticipatory adaptation measures, climate change projections suggest that these pressures will intensify. Long-term maternity reform should therefore incorporate climate resilience as a core system-planning consideration, alongside addressing the most urgent and longstanding challenges in maternity care.²⁵

Recommendation: DHSC and NHS England should embed extreme heat resilience within maternity and neonatal care reform, infrastructure planning, and service delivery.

Priority actions should include:

- DHSC and NHS England should work to ensure that maternity services are equipped to manage rising temperatures and associated health impacts. Specific measures should include, but are not limited to, developing heat-specific clinical guidance for maternal and neonatal care and assessing the resilience of maternity units to heat, with a view to prioritising adapting these settings in upgrades to the NHS estate.
- The National Maternity and Neonatal Taskforce should ensure that the new national action plan for maternity care considers long-term resilience and specifically preparedness for extreme heat, in response to the evidence on risks in pregnancy and association with negative health outcomes. The plan should include concrete actions for building resilience and set out clear responsibilities for DHSC and NHS England for delivering these actions.

Extreme heat is no longer an isolated or exceptional event, but an increasingly frequent feature of the UK's climate that has significant implications for public health, healthcare infrastructure, and population resilience.

Pregnant women represent one of the groups most physiologically vulnerable to these impacts, yet current policy and maternity frameworks do not adequately recognise or respond to this reality. The evidence linking heat exposure during pregnancy to adverse maternal and neonatal outcomes is substantial and growing.

The current period of maternity-related reform presents an opportunity to ensure that the future of maternity care is designed to respond to the realities of a changing climate. A failure to integrate heat resilience into these reforms risks embedding new vulnerabilities into systems that are already under significant strain. It is imperative that action is taken now.

Endnotes

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