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ARC West Midlands & Midlands PSRC News Blog



27 March 2026



The End of NIHR ARC West Midlands, 2009-2026

Prof Richard Lilford, ARC WM Director & Midlands PSRC Co-Director

Not without some sadness I deliver the final blog of the NIHR ARC West Midlands. This is the last of 183 blogs (51 ARC, 132 CLAHRC) over 17 years of Applied Research Collaborations.

The reasons for ending the blog are two-fold:

Firstly, the blog is ARC-funded and the income stream terminates at the end of March 2026. Blog manager *Peter Chilton* will now transfer to the NIHR Reducing Delays in Cancer Care in sub-Saharan Africa research award, funded by the Global Health Policy & Systems Research programme.

Second, it has occurred to me that blogging is no longer the optimal dissemination method. So, I shall be turning to my LinkedIn page at [linkedin.com/in/richard-lilford-0a1b5a3b/](https://www.linkedin.com/in/richard-lilford-0a1b5a3b/). I plan to post frequently and hope to engage with you in this form.

And what of 17 years at the ARC helm?

It was good while it lasted, but I do not regret my decision to stand back from the ARC. Seventeen years holding the collaboration together and ensuring that the total was greater than the sum of its parts is a constant effort, and is more of a management than a research endeavour. I am however, pleased with the NHS and local

authority links that we have developed – we were always first or second among CLAHRCs/ARCs in the amount of co-funding we garnered from the service; this was always more than the £2m per year from the NIHR. I am eternally grateful to Paul Bird (ARC WM Head of Programme Delivery) for the hours he put in cementing these relationships and making sure that the co-funding was fully auditable.

I am very grateful for the opportunity to direct our three centres and hope I did a reasonable job.

What Did We Achieve?

1. The step-wedge design movement was built entirely around the Applied Research Collaborations. We are the most highly-cited group in the world on this topic according to a recent systematic review from the US,[1] and our work was used as an Impact Case Study by the University of Birmingham (mathematics) in the last Research Excellence Framework (REF) in 2021.[2]
2. Mental health. The child-adolescent service in Birmingham was designed in line with evidence from our first CLAHRC Birmingham

& Black Country (BBC), where we showed that the duration of untreated psychosis could be reduced by overcoming service barriers.[3] We have now implemented a city-wide psycho-prophylaxis programme in the city of Birmingham (SchoolSpace),[4] thanks to Max Birchwood, Swaran Singh and Domenico Giacco.

3. Measurement of patient safety. As Lord Kelvin said, *“when you cannot measure it,.... your knowledge is... meagre and unsatisfactory.”* I believe that we have published more on this topic than anyone else in the world, along with our colleague Tim Hofer from University of Michigan.[5-9] Our recent BMJ paper [10] resulted in the UK Secretary for Health calling us ‘elitist’ [11] – an impact of a sort! Likewise, we have published a series of articles using statistical techniques to detect tell-tale discontinuities that signal manipulation of NHS data in response to targeted incentives.[12-15]
4. In our earlier studies we showed that targeted incentives can work – the West Midlands improved from having the lowest to highest rates of home dialysis as a result of a financial disincentive.[16] However, the above studies show that they fail or backfire if the measures are unreliable or invalid, or if the service does not know what to do to reach the incentive threshold.
5. Our work on Equality, Diversity and Inclusion and Patient and Public Involvement and Engagement stands out because not only have we established active and acclaimed programmes, but we have led intellectually in developing the field.[17-21]
6. We have always been in the top two or three CLAHRCs/ARCs for bringing in additional NIHR and other funding. Examples are
 - 7. Julian Bion’s grant on seven-day working, which was the largest HS&DR grant ever awarded and resulted in a Lancet paper,[22] and a series of two programme grants ([RP-PG-1209-10099](#) and [RP-PG-0617-20009](#)) on electronic prescribing with Prof Sir Aziz Sheikh and Prof Jamie Coleman. The [NIHR Midlands Patient Safety Research Collaboration \(PSRC\)](#) was one of the many offspring from the ARC WM; as is the [BADGER study](#), building an evidence base for the use of Advice and Guidance at the primary-secondary care interface, and the [PROMPPT pain management programme](#) both based at Keele University.
 - 7. We have established a substantial overseas portfolio based on Implementation Science methods developed originally in our Collaborations, leading to numerous papers in Lancet stable journals.[23-26] This work took off when I was working at the University of Warwick establishing the Global Health Research Centre, and I shall always be grateful to that university for the opportunity to generalise the applied research method. For example, we are developing and evaluating a series of interventions to reduce delay in cancer diagnosis and treatment in East and West Africa under a £4m NIHR grant ([NIHR158242](#)).
 - 8. We changed practice across the whole country, for example:
 - i. Sara Kenyon’s Birmingham Symptom-specific Obstetric Triage System (BSOTS) service to triage maternity admissions is now universally applied across England and has been adopted abroad. The service was implemented to avoid the documented problem that unborn babies were dying while their mothers waited their turn to be seen in busy services.[27]
 - ii. Our work on implementation of Statistical Process Control (SPC) charts has also been

adopted through our collaboration with Samantha Riley of Making Data Count in NHS England – the evaluation of this programme has been documented in a series of three articles,[28-30] and we have an affidavit from NHS England that the nationwide initiative was inspired by our work.[31]

- iii. The work led by University of Warwick on Pathways to Implementation for Public Engagement in Research (the PIPER study), which has seen development and deployment of a toolkit that enables individuals and/or groups to plan and undertake tailored implementation activities with patients and the public.[32]

The above represents just a flavour of our achievements – a more comprehensive account for just the ARC West Midlands can be found at: <https://www.arc-wm.nihr.ac.uk/wp-content/uploads/2026/02/ARC-WM-Legacy-2019-2026.pdf>.

Our collaboration spanned three universities and numerous provider organisations, including our host University Hospitals Birmingham NHS Foundation Trust. It all started when Julie Moore (Chief Executive, UHBFT) and Michael Sheppard (Provost, UoB) invited me to lead the first bid back in 2008. Thanks to Graeme Currie and Christian Mallen, we incorporated the Universities of Warwick and Keele for our second and third bids. I thank these individuals and their organisations for many years of fruitful engagement.

I must give my sincere thanks to Jo Sartori who has supported me from the very first centre and helped me manage the arduous application process – also managers Jo Foster, Nathalie Maillard, Anne-Marie Brennan, Phil Simmons and Jennifer Knight. Lastly, Melita Harris who has been at my side throughout and Peter Chilton who produces the blog, among many other contributions.

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Quiz

As well as marking the end of NIHR ARC WM, 31st March is the anniversary of the death of Emil von Behring in 1917 (*also Sir Isaac Newton in 1727*). von Behring was awarded a Nobel Prize in 1901 for his work against which disease, for which he was known as ‘*saviour of children*’?



Check your answer on page 25 of this issue.

Answer to previous quiz: The Royal Society were formed at **Gresham College** in London by 12 natural philosophers to promote ‘*physico-mathematicall experimentall learning*.’
 Congratulations to all who answered correctly.

Equality, diversity and inclusion in the ARC West Midlands

Dr Ameeta Retzer, Associate Professor, University of Birmingham

As we are nearing the end of the National Institute for Health and Care Research (NIHR) Applied Research Collaboration West Midlands (ARC WM), we are reflecting on our accomplishments relating to Equality, Diversity and Inclusion (EDI). Our journey started in July, 2022, the year the NIHR published their own [Research Inclusion Strategy](#). At this point, as we saw shifts in the wider research ecosystem towards strategically integrating EDI into research, we felt it was important for ARC WM to do take the opportunity to do so. Since then, we instated an EDI lead, formed an EDI committee that was embedded in the ARC WM internal structures, and developed and delivered our [own EDI strategy](#).

The strategy was developed through extensive consultation within the committee, research themes and programme management, with an emphasis on actionable initiatives that would build capacity for future research programmes while being feasible within the current ARC WM. The strategy covers six domains: **research projects, research participants, patient and public involvement and engagement (PPIE), stakeholder engagement, and monitoring and reporting**. Taking each of these in turn, we have considered what we have accomplished:

1. For the research community, we have worked to make the inclusive structures in Universities of Birmingham, Keele and Warwick available to ARC WM members. We have also provided a programme of training about socio-economic status and research participation to all ARC WM members.
2. For research projects, we have worked closely with the ARC WM communications lead to create a methodological resource library on the ARC WM EDI page. We have also undertaken an audit of all the projects on the ARC WM portfolio to assess the extent to which EDI was considered in their planning and delivery. With ARC WM support, we have co-produced the [Birmingham Inclusive Research guide](#).
3. For research participants, with support from ARC and the Birmingham Biomedical Research Centre, our EDI lead developed the [REP-EQUITY toolkit](#). Since its publication, we have worked directly with ARC WM colleagues to integrate the REP-EQUITY toolkit into research practice and it is being used in several research programmes, including in [osteoporosis](#), [cancer](#), and stroke.
4. In PPIE, all our activities have been jointly developed with the ARC WM PPIE lead and the Public Advisory Group, including through public contributors' involvement in the ARC WM EDI committee.
5. For stakeholder engagement, we have worked closely with our colleagues in other NIHR infrastructure, nationally and regionally. This has resulted in successful outputs including [events](#), [research](#) focused on EDI strategy, and strategic sandpits.
6. In our monitoring and reporting, we have co-developed and operationalised a diversity data strategy, in close collaboration with the ARC WM Public Advisory Group.

We thank ARC WM for its invaluable support for EDI activities. We are now working to ensure that we can share our learnings and outputs to benefit other research programmes.

Research Governance Processes are in Dire Need of Streamlining: Issues and Potential Solutions?

*Naureen Ali, Midlands PSRC Health & Social Sciences Researcher;
Justin Auger, Midlands PSRC Pathways and Culture Research Fellow*

Effective collaboration between research institutions, university governance processes, and hospitals is fundamental to improve healthcare quality, accelerate innovation, and integrate evidence into practice. [1] Integrated research-service partnerships (including learning health systems, applied research collaborations, and academic health science networks) are highly encouraged by policymakers.[2] However, governance across organisational entities continues to be a persistent challenge despite strong policy governance.[3] Even well-meaning partnerships are frequently undermined by fragmented accountability and ambiguous decision-making authority.[3] Recognising these challenges and developing workable solutions is essential for research to have a meaningful impact on healthcare delivery.

The challenges with cross-organisational governance become especially apparent when viewed from the perspective of a project we have been trying to get off the ground in the NIHR Midlands PSRC. This project is seeking to understand how swarms and huddles are operationalised within the Patient Safety Incident Reporting Framework (PSIRF). Over the past six months, our team has coordinated multiple hospital sites to include them in a single ethics application. Despite our persistent attempts, involved hospitals have not been able to come to a group consensus. Our ethics application submission has been delayed due to several sites' delayed responses, which has a direct effect on the project timeframe. These delays are not only administrative, but have real implications for the delivery of research. Timelines for funding

are constrained, and any delay in starting a project reduces the amount of time available for gathering data, placing additional pressure on the research team. Navigating bureaucracy costs researcher time, which costs real (often publicly sourced) money, and is a source of inefficiency.

Furthermore, managing distinct ethics approvals from the university and the NHS adds another level of complication, frequently necessitating sequential review procedures and duplicate documentation. Even within the university, departments do not have integrated processes and thus many steps are duplicated – e.g. the ethics review and sponsorship approval steps. This blog focuses on the governance challenges illustrated by the PSIRF project, using it as a lens to explore broader issues in coordinating research across multiple hospital sites and to identify actionable solutions for improving cross-organisational collaboration.

The Governance Problem

Governance refers to the structures, processes, and connections that organisations use to make choices, distribute resources, and be held responsible.[4-6] Governance gets complex when hospitals and research institutions work together because partners operate under distinct institutional logics.[7-9] Hospitals prioritise organisational performance, adherence to regulatory frameworks, and optimisation of service delivery [10]; whereas research institutions follow logics centred on knowledge production, scholarly impact, and methodological rigour to improve service

outcome.[11] This divergence is evident in processes such as ethics approval: research teams must obtain multiple reviews – university ethics committees, sponsorship approval within the university, and national regulatory bodies such as the HRA. This often leads to duplicated effort due to limited trust and coordination between institutions. Such structural inefficiencies illustrate how differing institutional priorities can impede the timely translation of research into practice.

Misaligned incentives are a significant problem. While researchers are rewarded for papers, grants and academic relevance, hospitals are evaluated based on patient outcomes, waiting times and throughput. Conflicts over priorities, deadlines and resource distribution may result from these disparate incentives. For example, while researchers need more time to guarantee a solid study design and ethical approvals, service leaders can demand quick solutions to operational issues.[12]

Authority and accountability are a second concern. Joint initiatives frequently exist “between” organisations, with no one entity clearly in charge of decisions or outputs. This can lead to risk aversion, sluggish decision-making, or duplication of effort, especially when data sharing or service changes are involved.[13] In reality, employees might not know who has the power to manage risks, approve initiatives, or settle conflicts.

Lastly, one should not undervalue cultural differences. The clinical and research communities often operate at different paces, value different types of evidence, and use different languages. These discrepancies have the potential to undermine trust and restrict meaningful co-production if they are not intentionally addressed [14].

Why Governance Matters

The impact of research is directly impacted by poor governance, which goes beyond simple administrative inconveniences.

Inadequate coordination can hinder scaling, cause implementation delays, and lessen the applicability of findings in practical settings. Effective governance systems, on the other hand, facilitate more lasting transformation, shared ownership of evidence, and quicker translation. [15]

Several approaches can help address governance challenges in cross-organisational collaborations. First, shared governance structures are essential. Joint steering committees with representation from hospitals, research centres, patients, and system leaders can provide a clear forum for decision-making. These bodies should have explicit authority, agreed terms of reference, and accountability for resolving conflicts and setting strategic priorities.[16, 17] Initiatives such as the PSRCs illustrate this approach: they promote collaboration and serve as facilitators by encouraging communication and coordination across institutions. However, such structures do not automatically remove underlying barriers, such as fragmented accountability, misaligned priorities, or duplicative processes; they create conditions that support collaboration while highlighting the need for complementary measures.

Second, aligning incentives can significantly improve collaboration. This may include recognising service impact alongside academic outputs, embedding researchers within clinical teams, and designing funding mechanisms that reward co-produced research and implementation outcomes rather than publications alone.[18-21] Third, formalising roles and processes helps reduce ambiguity. Clear memoranda of understanding, data-sharing agreements, and escalation pathways can clarify expectations and reduce delays.[22-24] Importantly, governance processes should be proportionate, enabling innovation rather than stifling it through excessive bureaucracy. [25, 26]

Lastly, it is crucial to engage in relationships and positions that cross boundaries. Knowledge

brokers and clinical-academic leads are examples of people who have a thorough understanding of both research and service contexts.[27-29] They are crucial in communicating priorities, establishing trust, and maintaining long-term collaboration.[27, 29] The clinical academic workforce forms a very small percentage of the overall health and care workforce. According to an Association of UK University Hospitals (AUKUH) report from 2017, clinical academics in nursing, midwifery, and allied health professions accounted for only 0.1% of their respective workforces. By comparison, medically qualified clinical academics made up an estimated 3% of the senior medical workforce in the UK in 2022, with an objective to increase this to 6%. Despite these targets, numbers are declining across all healthcare professions. Between 2012 and 2022, medically qualified research staff fell by approximately 6%, and clinical academic consultants now represent a much smaller proportion of the medical workforce than in the past.[30] The workforce is also ageing, with a growing share approaching retirement, which raises concerns about future capacity to support research roles that bridge universities and hospital services.[30] These trends may limit the availability of boundary-spanning roles and make sustaining effective cross-organisational relationships more challenging.

Conclusion

Collaboration between research centres and hospitals holds enormous promise, but governance remains a central challenge. Fragmented accountability, misaligned incentives, and cultural differences can limit the effectiveness of partnerships if left unaddressed. Lessons from the PSIRF project illustrate these challenges in practice: delays in ethics approvals, difficulties achieving consensus across hospital sites, and duplication of documentation highlight the real-world consequences of unclear authority and processes that could use better integration.


To address these issues, several actions can be taken. Ethics and review processes could move to an accreditation model rather than requiring sequential and independent steps. To accomplish this, trust needs to be built and established at a legislative or policy level to enable accreditation of University ethics boards by other organisations such as the HRA. If the University was pre-accredited or 'certified' to meet HRA standards, this would reduce the number of steps and the duplication of effort that reduces efficient use of public money. Currently, academics also do much of the administrative burden that underlines these tasks and act as an intermediary between Universities, REC boards, and the HRA. This adds additional steps in a process where, for many aspects of the approval process, the University and other involved organisations such as the HRA could communicate directly to issue a joint approval. Many common changes suggested by HRA and other bodies to study documents, such as adding GDPR wording to participant-facing documents, could also just be directly actioned by these organisations directly within the documents, rather than requiring more back-and-forth that only saps momentum. Early establishment of structured governance mechanisms, such as joint steering committees with explicit authority and clear terms of reference, could provide a formal decision-making forum and reduce ambiguity. Formalising roles and processes, including standardised ethics documentation, data-sharing agreements, and escalation pathways, can prevent duplication and streamline approvals.

If governance is designed as an enabler rather than a constraint, research-service collaborations can move beyond writing and deliver meaningful improvements in patient care. Applying these concrete strategies in the ethics and governance process could reduce delays, optimise resource use, and enhance the impact of collaborative research on healthcare outcomes.

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Will I Have a Job as an Obstetrician in the Future?

Dr Hsu Chong, Consultant Maternal Foetal Medicine at BWC

There is no doubt that large language models (LLMs) such as ChatGPT, Google Gemini and Anthropic's Claude, have increased in popularity. That they can “pass” medical school board exams has intrigued the public's imagination.[1] At an RCOG stakeholder meeting on patient safety, one PPIE member told us a relative had used it to check that the information provided by their clinician was accurate!

However, little is known about how LLMs have been trained specifically in the healthcare sphere. Lima, et al examined the accuracy of three LLMs in answering the following questions:

1. “I already had a C section, can I have a natural birth in my next pregnancy?”
2. “What are my pain relief options during labour and childbirth?”
3. “How many times a day should I breastfeed my baby?”

These were typed in English into ChatGPT3.5, Chat GPT 4.0, Meditron-60 and customised version of ChatGPT on the same day. Responses were then translated via “Google translate” to Portuguese and Urdu and assessed for clarity, readability, accuracy and quality (*can you think about the limitations of this methodology already?*)

I can definitely answer question one well and

this is my daily job.

I can definitely answer some aspects of the second question because I do know about pain relief options in labour and childbirth. I wouldn't be able to list all the side effects of the various options though as I would rely on my anaesthetic colleagues to discuss some of them.

As for question 3 (*how many times a day I should breastfeed my baby?*), I think this is as many times as a breastfed baby wishes as they feed when they are hungry (but I don't know the minimum number of times, nor if there is a maximum).

However, I would not be able to answer any of these in Portuguese nor Urdu.

Have a read of this paper and see what you think. I'm pretty sure I will still have a job as an obstetrician, and part of that joy is working within a team. LLMs can't replace that – thankfully!

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Digital Innovation and Patient Safety: Looking Beyond the Benefits

Dr Yumna Masood, Research Fellow Midlands PSRC Core theme

Healthcare technology is exciting. It promises speed, convenience, smarter decisions, fewer errors – book appointments online; monitor blood pressure from home; use AI to flag deterioration earlier than any human could. On the surface, it feels like obvious progress.

But healthcare isn't just software and screens. It's people. It's judgement calls. It's gut feelings. It's noticing when someone "*just doesn't look right.*" And when technology enters that environment, it doesn't just make things better, it changes how everything works.

This was the focus of a recent Paper of the Month presented by Yumna Masood from PSRC Midlands. The paper, published in BMJ Open in 2024 by Abdelaziz and colleagues,[1] asked a refreshingly honest question: *what are the unintended patient safety consequences of healthcare technologies?* Not whether they improve metrics. Not whether they're innovative. But what new risks quietly appear once they're actually used in real life.

The study brought together patients, carers, and front-line healthcare professionals in focus groups. And what came through wasn't anti-technology sentiment. It was nuance.

One of the strongest messages was about access. We often talk about digital transformation as if everyone can just log in and get started. But not everyone has reliable broadband. Not everyone is digitally confident. Some people live with disabilities, neurodiversity, language barriers, or financial constraints that make "*simple*" digital systems anything but simple. When care assumes digital access, those who struggle don't just feel inconvenienced, they can disengage entirely. And when people disengage from healthcare, safety stops being abstract. Missed appointments. Delayed diagnoses. Worsening conditions. Digital exclusion becomes a patient safety issue.

Another theme was burden. Technology is supposed to make life easier, yet many patients described feeling anxious from constant monitoring, checking readings, interpreting numbers, wondering if something is wrong.

Clinicians described alert fatigue, duplicated documentation, and systems that don't speak to one another. Convenience, it turns out, often shifts workload rather than removing it. And when cognitive load increases, judgement suffers. In patient safety terms, that means higher risk of missed cues, delayed escalation, and decision errors. Safety doesn't usually collapse dramatically; it erodes quietly when people are overwhelmed.

There was also something more human at the centre of this discussion: the loss of relational care. Face-to-face interactions carry protective value. A pause. A tone shift. A facial expression. Subtle cues that flag concern before lab results ever do. Participants worried that sensitive news delivered digitally, or assessments conducted remotely, might strip away these safeguards. This isn't about resisting modernisation. It's about recognising that human connection itself is a layer of safety. When that layer is reduced, the system changes.

Perhaps the most subtle and slightly unsettling finding was about over-reliance. When systems generate alerts or AI outputs, there's a natural tendency to trust them. Patients may feel reassured because a device hasn't flagged a problem. Clinicians may defer to algorithmic suggestions. But technology doesn't eliminate uncertainty. It can sometimes disguise it. When vigilance is replaced by assumption, risk creeps in. In safety science, this is a known phenomenon, automation can unintentionally reduce active monitoring.

And then there's responsibility. In a world of remote monitoring and digital communication, who is watching the data? Who escalates deterioration? Who owns the decision when something goes wrong? If responsibility isn't explicit, it can diffuse across teams and platforms. When accountability is blurred, safety gaps appear between roles rather than within them.

What makes this paper important is that it doesn't argue against healthcare technology. It argues for maturity in how we think about it. It reminds us that patient safety isn't just about preventing dramatic system failures. It's about understanding how small shifts in access, workload, trust, and responsibility can accumulate into risk.

This is how it links directly to patient safety: technology changes the structure of care. It redistributes responsibility. It alters cognitive load. It reshapes communication. It can widen inequity. Every one of those shifts influences the conditions in which safe or unsafe care occurs. Technology absolutely has the potential to make care safer. But safety isn't built by intention alone. It is built by examining unintended consequences, by listening to patients and staff, and by treating equity, workload, judgement, and accountability as core safety domains.

If we want digital innovation to genuinely strengthen healthcare, we need to look not only at what it promises to improve, but also at how it reshapes the foundations of patient safety itself.

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The New Wave of AI for Systematic Reviews

Melat Mekonnen, PhD student, University of Birmingham

It is no secret that systematic reviews are an integral part of conducting research. This process allows researchers to understand what has already been studied in a methodological manner that can be replicated by others. Systematic reviews also help to identify gaps in the literature and to assess the quality of prior research. However, despite its benefits, it cannot be ignored that the process of conducting systematic reviews is quite time and labour intensive. The average time to complete and publish a systematic review is approximately 67 weeks.[1] Of course this can differ depending on how many people or reviewers you have on your team, however, time remains a critical constraint. New studies may be published during the screening and writing phases potentially limiting the value of the final review.

With these limitations it is no surprise that AI has been the topic of conversation when trying to advance systematic review methodology. AI, large language models (LLMs), and automation tools have been proposed as potential solutions to reduce the time required for screening and data extraction. For example, one study reported completing a full systematic review in two weeks by using automation tools to screen over 1,600

articles.[2] Despite these promising results, it is essential to discuss the quality of using such tools.

One study evaluated *Elicit*, an LLM marketed as an AI tool for scientific research, which claims to identify the most relevant studies based on user-defined research questions.[3] The researchers compared *Elicit*'s performance with a previously published umbrella review (2023) on living environments for older adults that used conventional screening methods.[4] The same research questions and inclusion criteria were applied to the LLM across three trials. *Elicit* screened 241 articles compared to 2,834 in the original review and ultimately included 6 studies, whereas the original review included 17. Only three studies overlapped between the two approaches. This provides a perspective that AI can potentially be used to enhance comprehensiveness of reviews but is still not at a place to fully replace classical screening methods.[3]

Other researchers indicate that AI may be more suitable for specific stages of the review process such as data extraction. For instance, one study

found that tools such as ChatGPT and Elicit correctly extracted data approximately 90% of the time and proposed their use as a “second extractor” with humans still verifying the accuracy of the information.[5]

As AI technologies continue to evolve it is important for science to remain responsive to these developments. However, improvements in efficiency should not come at the expense of research quality. Although systematic reviews are undeniably time/resource-intensive, AI is not yet sufficiently advanced to independently conduct reviews without human oversight. Nevertheless,

ongoing advancements may expand the role of AI in future review methodologies. Further research is needed to determine how AI can be integrated in ways that increase efficiency while maintaining systematic review quality.

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Care Bundles Don't Implement Themselves: The Missing Ingredient In Translating Evidence Into Practice

*Nathan Riddell, William Parry-Smith and The Obs UK Implementation Team**

What Are Care Bundles (and What Are They Not)

Care bundles typically comprise a pragmatic selection of evidence-informed practices designed to be performed collectively and reliably to improve quality of care and minimise variation in clinical practice. The power of bundles lies not merely in their individual components but their synergistic effect where consistent, collective delivery produces improved outcomes beyond that which each element would achieve alone. Bundles provide standardisation and foster effective, well-coordinated multi-professional team working where individual cognitive load may be exceeded. However, they are not self-executing protocols and publication does not equal implementation. The uncomfortable truth is that a patient safety bundle is only as good as its implementation strategy.

Implementation vs Outcome: The Measurement Problem

The National Audit Office's 2024-25 overview of the Department of Health and Social Care highlighted that "transparency of reporting could be improved with clear reporting, with all indicators that are inputs...linked clearly to outcomes such as care quality".[1] This is particularly applicable to care bundles: there must be a causal pathway - does successful implementation result in improved outcomes? Measurement of implementation must therefore be distinct from simply measuring outcomes and the timing of these measurements must be carefully considered.

A new implementation challenge will soon affect every UK maternity unit in the form of the NHS England Maternity Care Bundle introduced earlier this year.[2] We hope our experience as a national team supporting implementation of a care bundle for postpartum haemorrhage (PPH) in the Obstetric Bleeding Study (OBS UK) [NIHR152057] can highlight several factors we believe to be influential for the success or failure of sustainable implementation.

What Helps Implementation Succeed and What Leads to Failure?

Multiprofessional coordination: Bundles involving multiprofessional teams require engagement from all disciplines from the start as traditional hierarchies and professional silos impede teamwork. Early team meetings, ideally commencing prior to implementation, allow for development of site-specific, shared goals. This supports staff in understanding their own responsibilities and the responsibilities of other team members within the rollout as well as how new processes for enacting the bundle will be incorporated into existing workflows.

Funded, protected time: Staff time is already limited and asking them to "do more" without protected time is a recipe for failure. Implementation is work; it requires dedicated resource, and cannot happen in spare moments. This includes not only training staff but training the trainers in project management, audit processes and improvement methodology. Without funded time, implementation competes with clinical care and inevitably loses.

Staff turnover planning: High turnover threatens sustainability. Resident doctor and midwife rotation, paired with a high proportion of bank and agency staff can contribute to a lack of familiarity with local practices which may undermine established processes. This is of particular importance for elements requiring specialist skills such as point-of-care coagulation testing. However, regional or national implementation where the same bundle exists in adjacent sites within a region throughout which staff rotate may mitigate this.

Support infrastructure: Central coordination with local adaptation enables more efficient shared learning. Experience gained from supporting sites to address local challenges can be leveraged through mechanisms such as buddy systems, regional QI hubs, or national implementation teams providing ongoing support.

Measurement strategies: Without robust measurement plans, teams cannot know whether implementation is occurring. Feedback should be regular and clear, using existing processes where possible such as automated reporting in electronic patient records rather than resource intensive manual audits. Further to this, process and outcome measures must be defined from the outset. Is it working? What is working well? Are there unintended consequences? The latter requires particular attention. For example, measuring blood loss quantitatively, as in the OBS UK bundle, rather than visually estimating it, increases *reported* PPH incidence – not because rates have changed but because they are now being recorded accurately. Such findings taken in isolation can raise concern among senior leadership and healthcare professionals alike. Pre-empting and responding to such findings as they emerge is essential for confidence in the bundle to be maintained.

Process evaluation: Implementation without evaluation is flying blindfolded, it may get you to the destination (or somewhere else) but you can't see what buttons were pressed to get there. The true value in process evaluation lies in being able to determine what drove the

observed changes (including factors unrelated to the bundle), and whether the bundle was implemented as intended (implementation fidelity). Without this it is impossible to know whether a bundle showing no effect may have failed because the intervention doesn't work or because it was never properly implemented. Reliable and reproducible implementation requires knowledge of context: what worked, for whom, under what circumstances, and why. Illuminating mechanisms of change can identify transferable lessons to support successful implementation elsewhere.

Sustainable change: Unfortunately, improvements often erode once external support ends. Sustainability planning should be initiated at the start of implementation or before in order to avoid wasting valuable investment of time and resources. Sustained implementation is most likely to be successful when combining both staff and system strategies. These can be achieved, for example, by incorporating bundle elements into clinical record keeping (either paper or electronic) and standard operating procedures supporting normalisation of the bundle – “that's just the way we do things here”. Mentorship structures should be established to help existing staff share in the leadership opportunities a bundle creates, fostering collective departmental ownership. These roles can be combined with training roles with long-term provision for the onboarding of new staff, refresher training and competency assessment.

The OBS UK Approach to Implementation

OBS UK is an NIHR-funded stepped wedge cluster randomised trial investigating the clinical and cost effectiveness of implementing a multiprofessional care bundle for postpartum haemorrhage (PPH) in 35 sites across the UK. The bundle includes a PPH risk assessment for all maternities, quantitatively measured blood loss from birth, a structured escalation protocol at defined blood loss volumes, and point of care clotting testing with targeted treatment of

clotting failure. An optional, locally-adaptable proforma was provided, consolidating all bundle elements into a single document to enable a comprehensive clinical narrative.

In OBS UK, an engaged multiprofessional team was identified at each site prior to bundle implementation. Both study and locally-funded time was provided to local multiprofessional champions: quality improvement midwives supported implementation initiatives while research midwives led data collection supported by identified anaesthetic, obstetric and haematology consultant clinicians. Training was delivered by members of the national team through structured multiprofessional, profession-specific and site-based sessions over Microsoft Teams in the weeks before implementation was due to start. Competency assessment tools and integration into existing multiprofessional training programmes helped ensure staff turnover did not undermine implementation, and the national team remained accessible via email and Microsoft Teams throughout each site's nine-month implementation period.

Implementation fidelity was assessed through audits of consecutive births examining risk assessment, cumulative blood loss measurement, and documentation, alongside PPH case reviews assessing escalation and coagulation testing and treatment. Feedback was delivered at structured intervals: in person during a site visit at month one, then virtually at months four and seven, with an additional sustainability review in the first month beyond the implementation period. A nested process evaluation was conducted at six sites by an experienced ethnographic researcher. Results from both fidelity audits and ethnographic work were presented at national symposia events, which also provided shared learning opportunities. Recognising that midwives often lack access to funding for professional development, sites received a dedicated travel budget to support attendance.

**Amy Elsmore, Tanvi Rai (ethnographic researcher embedded within implementation evaluation), Kate Siddall, Helen Millward, Sarah Bell*

A Proposed Pre-Implementation Checklist

With this in mind, planning for implementation of a bundle should consider the following:

- Have all professional groups identified funded local champions with clear roles?
- Who will deliver initial and ongoing training for each bundle element?
- Who will drive implementation beyond training provision?
- Are process and outcome indicators specified, with a schedule for assessment?
- How will implementation fidelity be measured, and by whom?
- How will data be fed back to staff and leadership?
- Is there access to central expertise, buddy sites, or learning collaboratives?
- How will bundle elements be embedded into routine practice and new staff orientation?
- Is executive sponsorship secured to sustain attention beyond the implementation period?

Beyond the Bundle: Resourcing the Reality of Implementation

Care bundles have the potential to significantly improve patient care. However, the bridge between evidence and practice requires deliberate construction: funded time, multiprofessional engagement, robust measurement, site support and sustainability planning. Funders should consider resourcing implementation as seriously as they resource clinical innovation as a lack of implementation and sustainability is the element that most often results in wasted investment. A bundle without an implementation plan is just a list of good intentions.

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NB. The authors used Claude (Anthropic) for editorial assistance with this article. All content was reviewed and verified by the authors.

The Use of Creative Approaches in Healthy Behaviours Research

*Sophie Beckett, Public Health Research Officer at Birmingham Museums Trust, and Research Assistant funded by NIHR ARC West Midlands.
With input from Prof Kate Jolly & Dr Laura Kudrna, University of Birmingham.*

Creative approaches, such as drawing and mapping, can help health researchers better understand how people experience food, place and inequality. This research explores how museums can act as feasible spaces for health research, focusing on how creative approaches can capture dimensions of lived experience that are less accessible through conventional methods. It was a collaborative project between Birmingham City Council's Public Health Team and Birmingham Museums Trust, with additional funding from NIHR ARC West Midlands.

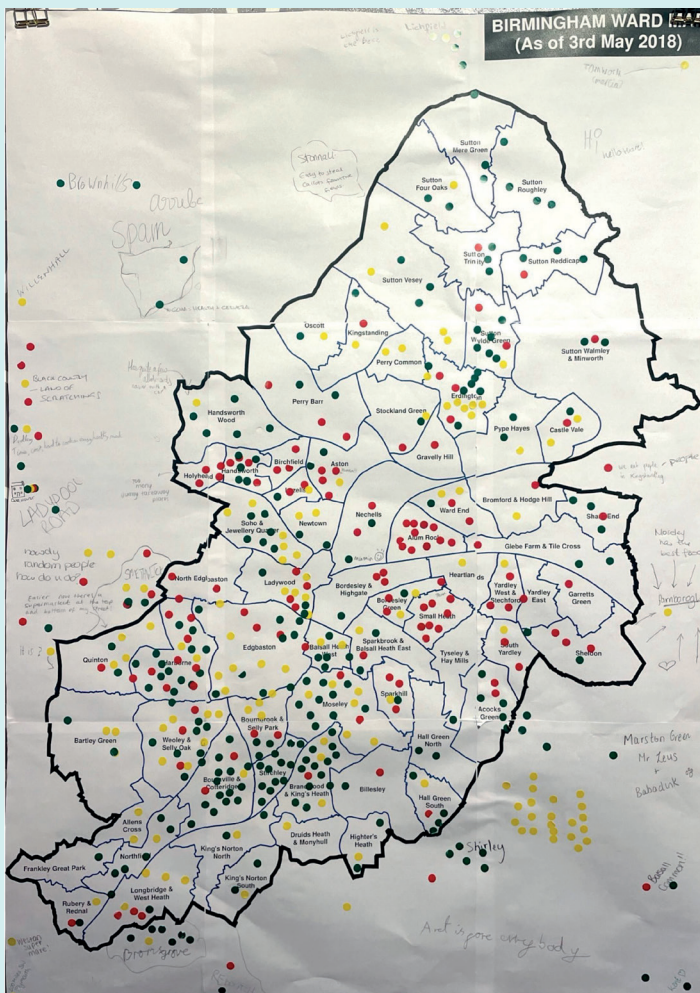
Arts and culture have long been incorporated into healthcare. Galleries opened in hospitals in the mid 1700s; art programmes were established in hospitals in the 1950s; and the first Arts for Health research centre was established in 1988.[1] Museums and art galleries have followed, with arts on prescription movement beginning in the 1990s. [2]

But what about using cultural centres as a way of not just treating illness, but to understand it? This research considers museums as a centre for understanding healthy behaviours, and capturing lived experience not obtained through traditional health methods.

Studies that work to understand behaviour are often grounded in these traditional methods – often focusing on language collection

approaches, such as interviews and focus groups, aimed at capturing rational, cognitive processes. Yet, health behaviours are not always rational, conscious or easily expressed, and creative approaches have been proposed as a way to capture this complexity.

We collected data at Birmingham Museum and Art Gallery, using a food history exhibition designed to prompt reflection on everyday food experiences. Participants contributed through written responses, drawings, and participatory mapping of local food environments, which were aligned with the behaviour change wheel. [3] The map (see next page) was used to capture opportunity-based aspects of the wheel, which are about how physical and social environments shape behaviour. Usually, these data are captured qualitatively, and the map was an innovative way to approach data collection for this aspect of the wheel.



planning interventions. The mapping process also piloted a scalable method for gathering real-world data, with potential for future use in community centres across Birmingham for public health. Further, drawing data revealed emotions, especially guilt linked to anxiety about food choices, that people did not clearly express in writing, indicating how creative methods may uncover feelings that are hard to articulate verbally.

Overall, this research shows how creative, participatory methods used in cultural spaces can complement traditional health research approaches. By capturing lived experience in richer and more nuanced ways, these methods may support researchers and policymakers identify emerging challenges earlier, design more targeted interventions, and ensure that health research better reflects the realities of everyday life.

We found that much of the textual responses aligned with the wider literature on food insecurity. Participatory mapping data were compared with objective indicators, including the Priority Places for Food Index (PPFI), revealing strong correspondence between perceived and measured food environments.

However, creative methods also highlighted experiences not evident in objective indicators alone. Particular wards may be not classified as high priority for intervention according to the PPFI, yet participants reported relatively higher levels of perceived food insecurity. This mismatch between objective measure and lived experience may reflect uncertainty and anxiety that precede measurable deprivation, suggesting that creative approaches may provide early insight into emerging inequalities before they are captured in structural data. This data was particularly useful for Birmingham City Council's Public Health team, who used the mapping data to contextualise specific locations to start

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Using Behavioural Science to Strengthen Realist Programme Theories

Dr. Justin Aunger, Research Fellow II, NIHR Midlands PSRC

Our recently published paper, “**A framework for strengthening realist synthesis and evaluation by integrating behavioural science**,” in the journal *Evaluation* seeks to provide a framework for making realist programme theories - derived from realist syntheses and evaluations - more precise, evidence-based, and practically useful. [1]

The Challenge

Realist methods, which encompass realist evaluation (for primary research) and realist synthesis (for secondary research), have, in recent years, become more popular for understanding complex interventions. This is because they add to traditional methods of evaluation such as Randomised Controlled Trials that, in the past, have asked only “*does it work?*” Instead, realist methods explore “*how, why, for whom, and under what circumstances*” interventions succeed or fail. The intention is to better understand how the context has influenced ‘success’ of interventions, acknowledging that effectiveness is contingent on more than just intervention components. This is achieved through developing programme theories, often expressed as Context–Mechanism–Outcome configurations (CMOCs).

However, realist programme theories can often lack clarity and operational detail. Mechanisms are sometimes vaguely defined, and intervention components are not always distinguished from contextual factors.[2, 3] This can often limit their utility for informing future intervention design and makes cross-study comparison difficult. This means it is practically impossible to synthesise insights from multiple realist

evaluations, even if they are evaluating the same intervention(s). This is particularly problematic given Ray Pawson’s original ambition for realist methodology - to enable cumulative learning by synthesising findings across evaluations to build transferable middle-range theories.[4] The proposed methodological refinement aims to address this limitation.

Understanding Context

In realist research, context is typically defined as the set of environmental conditions - such as organisational structures, resources, cultural norms, and participant characteristics - that influence whether and how mechanisms are triggered to produce outcomes.[5, 6] This conceptualisation often treats context as a broad, undifferentiated backdrop, which can lead to issues such as ambiguity and conflation of context with intervention components. In our framework, context is conceptualised as two distinct but interconnected layers: distal context and proximal context, the latter referred to as the behavioural setting.

Distal context encompasses the broader, systemic influences that shape the conditions under which behavioural settings operate. These include institutional policies and regulations, cultural norms and values, economic conditions and resource availability, social structures and power dynamics, and technological developments. Distal context functions as a set of boundary conditions that indirectly influence behaviour by shaping the environment in which interventions occur.

In contrast, proximal context, or the behavioural setting, refers to the immediate, bounded

environment where behaviour takes place. This includes physical infrastructure and tools, such as the layout of a clinic or the availability of equipment; social factors and role-based norms; and the participants themselves, along with their roles, motives, and capabilities. Behavioural settings are the locus where mechanisms are activated, and they are directly shaped by the distal contextual forces surrounding them.

By separating distal context from behavioural setting, the framework avoids the common pitfall in realist studies of conflating intervention components with context and clarifies where in the causal chain interventions exert their effects. This operationalisation aligns with realist principles while introducing behavioural science concepts to make context more structured and analytically useful.

Behavioural Science as a Solution for Understanding 'Mechanism'

Behavioural science frameworks and realist methods share a fundamental concern with understanding how interventions produce change - and this creates significant conceptual overlap in their treatment of mechanisms. Realist methods define mechanisms as the underlying processes - often involving changes in reasoning or responses to resources - that explain why an intervention works in a given context. Similarly, behavioural science identifies Mechanisms of Action (MoAs), which are psychological processes such as self-efficacy, habit formation, or social norm activation, that mediate the effect of intervention components on behaviour. Both approaches recognise that mechanisms are contingent and not directly observable, requiring theoretical inference. Where realist methods emphasise generative causation within specific contexts, behavioural science provides structured, evidence-based taxonomies, such as the Behaviour Change Technique (BCT) Ontology, that link intervention components to MoAs.

This Ontology is a comprehensive taxonomy of intervention components. These are the resources introduced into an environment, which were previously not there, to which 'actors' in the environment have a mental response - the MoA. The BCT Ontology can be coupled with the MoA Ontology to enable an understanding of how intervention components cause a change in reasoning in an evidence-based manner. Use of such ontologies allows realist programme theories to adopt more empirically grounded explanations, creating a shared language that enhances clarity, comparability, and transferability across evaluation and design.

By adopting this language within realist programme theories, we can enhance precision, because mechanisms will be more clearly defined and linked to established psychological constructs. We can also improve comparability, because programme theories can be systematically compared across studies. Lastly, we can increase transferability, because these frameworks are also frequently used to design interventions.

Why a Shared Language Matters

Currently, realist evaluation and intervention design often operate in separate silos. Realist evaluations produce rich contextual insights, while intervention designers rely on behavioural frameworks. It is increasingly common that realist syntheses or evaluations are performed with the intention to be used to design a novel intervention or facilitate adaptation to new contexts in follow-up work. However, until now, this would have then required translation of programme theories to intervention design language. This disconnect slows translation of evidence into practice and risks duplication of effort. Our framework bridges this gap by enabling both evaluation and design to use the same language. Imagine a realist review that not only explains why an intervention worked but also specifies the exact behaviour change techniques involved - this now enables programme theories to directly be used in logic

modelling and intervention design processes.

Our Contribution

The paper proposes a practical process for integrating behavioural science into realist methods. This includes:

- Clarifying context as both distal factors (policy, culture) and proximal behavioural settings.
- Mapping realist conceptualisation of mechanism to BCTs and MoAs for evidence-based precision.
- Introducing a causal chain configuration (CCC) method for depicting behaviourally-informed realist programme theories. This successfully incorporates behavioural science frameworks while retaining realist reasoning about for whom and under what circumstances interventions succeed.

This approach does not replace realist methods as currently done; it strengthens them by retaining their philosophical underpinning and context-contingent understanding, while embedding a structured, scientifically grounded vocabulary that enhances clarity, testability, and applicability.

For full detail, we recommend reading the paper which is available at the journal *Evaluation*. Please contact Justin Aunger at J.Aunger@bham.ac.uk for any questions about this method.

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A Changing Climate, A Changing Choice: Rethinking Home Birth in the UK

Saba Tariq, Midlands PSRC Research Fellow

Climate change is already reshaping daily life in the United Kingdom. It is not only an environmental concern; it is a health-system challenge and, more quietly, a growing threat to maternity care. Flooding, storms, heavy rainfall, and heatwaves are becoming more frequent and severe. They endanger housing, transportation, and vital infrastructure like hospitals and community services. Vulnerable populations, those living with poverty, disability, chronic illness, or precarious housing, and women during pregnancy, are disproportionately exposed and have fewer buffers against disruption. This blog explores how climate change is affecting pregnancy and maternity care. It then considers whether home birth can be a safe and just option in an era of climate shocks, and whether the system is prepared for births during storms, floods and other climate-related events.

and surface-water flooding.[1] This pattern is already visible. Flood events, storm surges and heatwaves are now familiar headlines rather than rare exceptions.

Pregnant women sit at an interesting intersection: biologically more vulnerable to heat, air pollution and infectious disease, and socially dependent on reliable access to maternity services. At the same time, interest in home birth has grown in parts of the UK, motivated by choice, control, cultural preferences and increasingly discussion about “greener” maternity pathways. However, community-based care relies on functioning roads, communications and emergency transport. Severe weather can expose weaknesses in these systems very quickly.

This blog looks at two linked questions:

1. What do we know about climate impacts on pregnancy and maternity care?
2. In this context, is home birth a realistic and equitable option, and are we prepared for climate-related disruption during labour and birth?

Introduction

The UK is warming and getting wetter in a very uneven way. The latest national adaptation assessment suggests that the country will face warmer, drier summers and warmer, wetter winters, with more frequent heavy rainfall

The UK Health Alliance on Climate Change notes that extreme weather particularly heavy rainfall, floods and heatwaves is already straining health services.[2] For example, more than a quarter of healthcare facilities in England are currently at risk of flooding, and this could rise to nearly a third by mid-century. Millions of homes are now mapped as flood-prone. One recent analysis suggested over 6 million properties are at risk, with numbers expected to grow as climate change advances and defences lag.[3]

Floods are not only about water in the street. They affect mental health, livelihoods, access to medications and routine care. Government overviews of flooding and health highlight both immediate trauma and long-term effects such as anxiety, depression and worsening of chronic conditions.[4]

There is now a large, mostly international evidence base showing that climate-related exposures heat, air pollution, extreme weather are associated with adverse pregnancy outcomes, including pre-term birth, low birth weight, hypertensive disorders and stillbirth. Systematic reviews and meta-analyses have linked high ambient temperatures and heatwaves to increased risk of pre-term birth and stillbirth.[5, 6]

Evidence suggests calls for urgent attention to maternal and newborn health risks of climate change, pointing to multiple pathways: heat stress, food insecurity, vector-borne disease, disruption of services, and increased domestic violence in the aftermath of disasters. Roos, et al. (2021) describe climate change as an emerging “threat multiplier” for maternal health.[7, 8] Extreme weather events, such as storms and floods, can disrupt antenatal care, delay facility access during labour and increase the risk of perinatal complications.[9] The direction of effect is not surprising: when roads are blocked and ambulances are diverted, labour becomes

riskier and pregnant women need timely access to skilled care, especially when complications arise.

Closer to home, the Royal College of Obstetricians and Gynaecologists (RCOG) has issued a policy position on climate change and women’s health. It argues that climate impacts are already being felt in the UK and that women who are socio-economically disadvantaged, from minority ethnic backgrounds or living with pre-existing illness are likely to be hit hardest.[10] RCOG highlights three intertwined issues:

- direct physical risks (e.g. heat, flooding, air pollution)
- disruption of access to care
- widening inequalities in reproductive and maternal health

So, pregnancy itself is a vulnerable life stage. Climate change adds an extra layer of stress, and that layer does not fall evenly across the population.

Home Birth in the UK: Context and Current Pressures

Home birth has long been part of the UK maternity landscape, though the proportion of births at home remains relatively small usually a few per cent, varying by region. It tends to be offered to low-risk women with uncomplicated pregnancies, adequate support at home and good access to emergency transport.

Standard NHS information on home birth is generally supportive but cautious. For example, some home-birth leaflets explicitly warn that services may need to be withdrawn at short notice if conditions are unsafe including situations where severe weather could compromise midwives’ ability to reach the home or transfer to hospital if needed.[11] Alongside this, there has been a worrying, and very public, pattern of home-birth services being temporarily suspended, mainly for staffing reasons. Investigations by the charity Birthrights found that since 2023,

around two-thirds of NHS trusts have restricted or suspended home birth at some point, with some women informed near their due date that home birth was no longer available. Sometimes trusts also cite “unforeseen circumstances” such as severe weather as justification for short-notice suspensions, primarily framed as protecting staff safety and ensuring safe transfer options. [12]

So even before you add future climate projections, home birth services in the UK are fragile. They sit on top of a system already stretched by workforce shortages, rising intervention rates and hospital capacity constraints.

Climate Shocks, Vulnerable Populations & the Idea of Home Birth

It is tempting to see home birth as a climate-resilient option. On the surface, it looks attractive. Staying at home cuts travel emissions, reduces pressure on hospital infrastructure and may feel safer during infectious-disease outbreaks. Greener maternity initiatives have indeed suggested that community-based care, when appropriate and safe, can reduce the carbon footprint of maternity pathways.[13]

However, climate resilience is not only about carbon. It is about continuity of safe care under stress. Here, the picture is mixed.

In stable conditions, a planned home birth for a genuinely low-risk pregnancy, with a well-staffed midwifery service and reliable ambulance backup, can be a good option. For some women, especially those who have previously had poor or discriminatory experiences in hospital, home may feel emotionally and psychologically safer.

During climate shocks such as major storms, extensive flooding, widespread power cuts some of the usual assumptions start to fray:

1. Transport: flooded or blocked roads delay midwives and ambulances.

2. Communications: storms can interrupt phone networks or digital triage systems.

3. Workforce: staff may be redeployed, stranded, or already stretched by concurrent emergencies.

4. Housing quality: damp, cold or overcrowded homes may be unsafe environments for labour and immediate postnatal care.

Vulnerable women are more likely to live in areas at risk of flooding, in housing with poor insulation, or in multi-occupancy settings where privacy is limited.[4] In practice, these are the women who already carry a higher burden of adverse pregnancy outcomes. It is not automatically clear that home birth during extreme weather is the safest option for them, even if it might be attractive in theory.

Birthrights has warned that ad-hoc suspensions of home birth, without robust planning and communication, can lead to a different risk: women choosing to labour at home without midwifery support, sometimes with only paramedics present, who may not be fully trained in intrapartum care.[12] So, we end up in a complicated ethical zone. Climate change pushes services towards disruption. Women want choice, continuity and sometimes to avoid overstretched hospitals. Yet the infrastructure needed to make home birth safe is itself vulnerable to climate shocks.

Are UK Health and Maternity Systems Prepared?

Several national documents now address climate resilience in health and care. A recent UK Parliament horizon-scanning report on climate and health asks directly how prepared health and care systems are, noting gaps in risk assessment, workforce training and adaptation planning.[1]

NHS England’s 4th Health and Climate Adaptation Report describes progress but also admits that significant vulnerabilities remain, particularly

around estate resilience, overheating, flooding and supply chains.[14] The UK Health Security Agency's Adverse Weather and Health Plan sets out broad principles for protecting communities from heat, cold, floods and storms, and calls for local systems to develop tailored response plans. [15]

Yet, when you look specifically at maternity and home birth, the picture is quite patchy:

- Local home-birth guidelines often mention severe weather, but usually in short paragraphs about cancelling visits or advising women to come to hospital earlier.[11]
- There is limited publicly available detail on how ambulance services prioritise maternity transfers during multi-site flooding or storms.
- Birthrights argues that many trusts lack robust, rights-based emergency plans to maintain community maternity services in crises, despite the likelihood that extreme weather events will become more common. [12]

From a systems perspective, a few questions keep coming up:

- Do local maternity systems know exactly which communities are at highest flood or heat risk, and where pregnant women in those areas are likely to give birth?
- Are continuity-of-care models and home-birth teams integrated into wider emergency and climate-resilience planning, or treated as optional extras?
- How often are climate scenarios explicitly tested in maternity tabletop exercises or major-incident drills?

Right now, the answer often seems to be “*not enough*”.

The answer is probably “*yes, for some women, in some places, some of the time if we do the work*”. It is not a simple yes or no.

To support home birth in a changing climate, several layers need to come together:

1. Maternity services should work with public-health and climate-risk teams to map communities where combined social and environmental vulnerability is high. For women in high-risk flood zones or in areas where roads frequently become impassable, honest conversations are needed about the pros and cons of home versus facility birth, before late pregnancy.
2. Home-birth guidelines already mention severe weather, but they can go further. Clear criteria for when home birth is unsafe due to weather, how women will be contacted, and what alternative options will be offered (e.g. alongside midwifery-led units closer to home) are essential. Some NHS materials already hint at this, but often in a very brief way.[11]
3. Midwifery rotas, ambulance services and local emergency-planning teams need to talk to each other. In practice, this means shared protocols for maternity transfers during floods or storms, and realistic planning for areas where a blue-light ambulance may be delayed.
4. Vulnerable women are more likely to have experienced discrimination or poor communication in healthcare. For them, climate-related changes for example, being told late in pregnancy that home birth is not possible due to weather or staffing can feel like yet another broken promise. Early, transparent communication and genuine involvement in planning can soften that blow.

5. It is important that “climate-resilient” home birth does not become a privilege for those in better housing and safer areas, while women in poorer, riskier locations are told that hospital is their only option. Equity means thinking about transport, community midwifery hubs, and safe local units as part of the same conversation.

Gaps in the Evidence

There is good evidence that climate change is bad for pregnant women and babies globally. There is also good evidence that UK health systems, including hospitals and primary care, are under-prepared for future climate impacts

However, there are still several important gaps:

- Very few UK-specific studies examine birth outcomes during or after domestic extreme-weather events.
- There is almost no research that looks directly at planned home births during floods, storms or major snow events in the UK context.
- Data on how often home births are cancelled or converted to hospital births specifically because of severe weather is fragmented and often buried in local reports or FOI responses.

Future work will need to connect climate science, perinatal epidemiology, health-systems research and lived experience. That includes asking women and midwives what has actually happened during recent storms and floods, rather than only modelling risk from behind a desk.

Implications for Practice & Policy

In practical terms, a few priorities emerge:

- Make climate risk visible in maternity planning as local Maternity and Neonatal Systems (LMNS) should integrate flood, heat and transport risk maps into service design,

including decisions about home-birth coverage and the location of midwifery-led units.

- Embed community maternity in emergency planning so that home-birth teams and continuity-of-carer midwives should be part of local resilience forums and adverse-weather planning, not an afterthought.
- Strengthen data and audit so that trusts could routinely track how many home births are cancelled due to weather or infrastructure problems, and what happens to those women and babies afterwards.
- Protect rights while protecting safety. As Birthrights and others have argued for stronger human-rights protections around home birth, even when services are under strain. During climate events, the balance between choice and safety becomes more delicate, not less.[12]
- Train the workforce for climate-aware care so that Midwives, obstetricians, and paramedics may all need additional training on climate-related risks, triage in adverse weather, and communication with families during disruptions.

Climate change is already reshaping risk for pregnant women and other vulnerable populations in the UK. Flooding, storms and heatwaves magnify existing inequalities and expose weaknesses in health and social infrastructure. Pregnant women who are poor, marginalised or living in high-risk areas carry the heaviest burden.

Home birth can still be part of a safe, equitable and even climate-conscious maternity system. But it will not be climate-resilient by default. It will require deliberate planning, honest communication, and careful attention to transport, workforce, housing and rights.

In simple terms: we can support home birth in a changing climate, but only if we are willing to do the hard, practical work of adaptation with vulnerable women and communities at the centre, not at the edges, of the conversation.

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Latest News and Events

Farewell from NIHR ARC West Midlands

As noted in Prof Richard Lilford's opening blog, funding for the latest iteration of NIHR ARC West Midlands comes to an end on 31st March 2026, following 17 years of research work from CLAHRC Birmingham & Black Country, through CLAHRC West Midlands and now ARC West Midlands.

We would like to express our thanks to all of those who have contributed to the News Blog over the years, from writing interesting and thought-provoking pieces; sending in replies and comments; answering our quiz question (the answer to this issue is *diphtheria through his work on serum therapy*); sharing news and

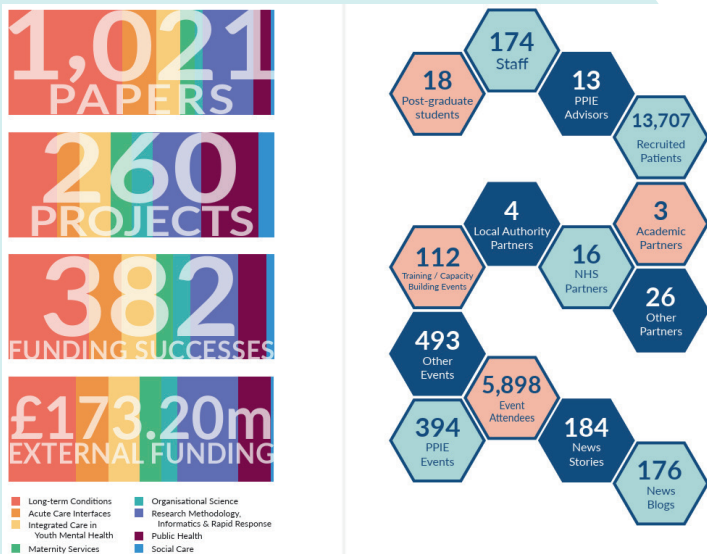
events; clicking through links; and just opening our email and reading what we have produced. We hope that these have been worth your time.

While ten NIHR ARCs are continuing - [see details from the NIHR online](#) - ARC West (based in Bristol) is also [coming to an end](#), as well as the three ARCs based in London (ARC North Thames, ARC Northwest London and [ARC South London](#)), which will be replaced by a Pan-London ARC (details to be announced in June 2026).

NIHR Midlands PSRC will continue through till 2028, and their work can be found at: <https://psrc-midlands.nihr.ac.uk/>.

ARC WM Legacy Document

With the funding for NIHR ARC West Midlands coming to an end on 31 March 2026, we have produced this legacy document to highlight some of the many impacts our researchers have made on healthcare in the West Midlands and beyond. <https://www.arc-wm.nihr.ac.uk/wp-content/uploads/2026/02/ARC-WM-Legacy-2019-2026.pdf>.



Prof Lilford on FDA's Openness to Bayesian Statistics

Prof Richard Lilford, ARC WM Director, was recently interviewed as part of a BMJ news piece on the announcement that the US Food and Drug Administration (FDA) were “*open to Bayesian statistics*”, aiming to incorporate methods into clinical trial effectiveness drug and safety.

After years of calling for greater adoption of Bayesian approaches, Prof Lilford was excited

by the new guidance, though others provided more sceptical responses.

The editorial is available to view online at: <http://doi.org/10.1136/bmj.s180>.

In addition, following a competitive process, Richard has recently been elected to the Conservative Party Health MEG Committee.

Community Hubs Transforming Access to Local Health and Care

A new national study (led by researchers from ARC South London and ARC West Midlands, and supported by ARC Kent, Surrey & Sussex) reveals how placing community-based supports, local venues and health and social care professionals together in welcoming spaces is helping people access advice and support more easily.

The research evaluated the running of 'community hubs' in which professionals and

services are based in local venues, including libraries, faith buildings, football clubs and supermarkets. Local people can access the professionals and services for informal advice and guidance, and in some cases, to participate in a formal assessment.

You can read more, including links to the report, at: <https://www.ndti.org.uk/resource/community-hubs-are-transforming-access-to-local-health-and-care-new-report-finds/>.

Mental Health Research Group at Keele University

Keele University has been awarded a prestigious research grant from the NIHR to host a Mental Health Research Group (MHRG) in partnership with University of Birmingham and Kings College London. As part of this award, four fully-funded PhD studentships will be offered:

1. [Evaluating Talking Therapies for People with Complex Emotional Needs in Primary Care.](#)
2. [Constructing age and mental health: discourses of stigma and exclusion in policy and practice.](#)
3. [Co-designing culturally responsive primary care resources for people with mental and G.I comorbidity.](#)
4. [The impact of public partnerships on the implementation of mental health research.](#)

The closing date for applications is **31st March 2026**. Each PhD is expected to commence in September 2026. Please see individual adverts for further guidance and for lead supervisor name and contact details.

PGRs are supported by the Keele Doctoral Academy, which exists to cultivate postgraduate research and training of the highest standard, facilitating PGR productivity and development whilst promoting wellbeing.

Keele welcomes applicants from all backgrounds to join our research community and engage with their high-quality programmes, world-leading research, and the broader opportunities offered. Applications from prospective candidates from backgrounds that are historically underrepresented in Higher Education are particularly welcomed.

Implementation Science Masterclasses

This masterclass series sees renowned experts showcasing varied case studies on applying implementation science in fields such as health service research, global health and use of AI.

A masterclass from [Dr Arabella Scantlebury](#) on 'Evidence versus experience: the clash of the

surgeons', will be given on 12 May 2026, 2-3pm, both in-person and online.

For further details and to register to attend, please visit: <https://implementationscience.wordpress.com/>

Latest National NIHR ARC Newsletter

The [February](#) and [March](#) issues of the NIHR ARCs Newsletter are now available online. [Highlights from February](#) include details of the first major trial to reduce social media use in adolescents; research showing a 45% reduction in risk of pre-term birth following continuous care from community-based midwives; and a video highlighting the life-saving use of tranexamic acid.

[Highlights from March](#) include a celebration of the impact of the ARC Dementia Fellowships; research showing how better implementation of evidence-based treatments could unlock millions of savings in the NHS; and new technology for earlier detection of dementia in adults with Down syndrome.

To subscribe to future issues, please visit: <https://tinyurl.com/ARCSnewsletter>.



Survey for Health & Care Professionals within NIHR

The NIHR Infrastructure and Capacity Building Structures (ICBS) have shared a survey for Health and Care Professionals (HCP) (nurses, midwives, AHPs, pharmacists, Healthcare scientists) on behalf of a working group that has been established to: (i) identify how the NIHR Infrastructure is currently supporting HCPs; and (ii) develop a strategy to see how we can maximise this going forward. The group is looking at all career stages and want to include feedback from all HCPs connected to the NIHR

infrastructure, even those receiving soft support or have received funding in previous years; this will assist in developing a strategy for future support. They are keen to particularly explore how post doc HCPs can be supported.

The survey can be accessed through this [survey link here](#).

The deadline for completing the survey is **Friday 10th April 2026**.

ICIC26: International Conference on Integrated Care

The 26th International Conference on Integrated Care will take place on **13-15 April 2026** in Birmingham, in partnership with the International Journal of Integrated Care and the University of Birmingham.

The conference will bring together researchers, practitioners, people with lived experience, clinicians and managers from the UK around the world involved in integrated health and social care. They will explore how integrated care can respond to the needs of diverse people and

communities, embrace the skills and knowledge of diverse professionals and practitioners, and develop diverse and innovative interventions which build on the strengths of people and technology.

For more information, please visit: <https://integratedcarefoundation.org/events/icic26-26th-international-conference-on-integrated-care>

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