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Research article

Advancing and integrating climate and health policy in the United Kingdom: Insights from national policy actors

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ABSTRACT

Introduction: Calls for better integration of climate and health policy agendas are increasingly common to enhance synergies and minimize conflicts. This article explores U.K. policy actors' perspectives on the current status and potential for more effective integration.
Materials and methods: 43 semi-structured interviews with individuals working in climate change, health, their intersection, and adjacent policy areas were transcribed and subjected to qualitative content analysis.
Results: Most participants agreed that climate and health policies require further integration to increase support for climate policy and maximize health benefits. Despite widespread acknowledgment of the growing significance and scale of climate change impacts on human health, practical policy integration remains limited due to, *inter alia,* siloed decision-making, resource constraints, and short-term thinking. Opportunities for integrating these agendas include emphasizing co-benefits, leveraging the scale of the National Health Service (NHS), and learning from devolved governments. Proposed strategies to improve policies and outcomes involve enhanced cross-sector coordination, dedicated resources, fit-for-purpose evidence development, and enhanced community engagement.
Discussion: A better-resourced, holistic approach addressing the wider determinants of health and prioritizing vulnerable populations could significantly improve climate and health policy outcomes. The 10 Year Health Plan for England offers opportunities to build on established cross-government climate commitments and consider how co-benefits from illness prevention can be achieved most effectively.
Conclusion: There is considerable potential to further integrate climate policy and health policy with clear perceived advantages. While long-standing barriers exist, promising opportunities are emerging.

1. Introduction

1.1. Growing threats, emerging opportunities

In the UK, as elsewhere, climate change impacts are increasingly evident and far-reaching, including more frequent and severe flooding, growing water scarcity, and rising temperatures with more frequent and severe heatwaves [1]. These carry serious physical and mental health consequences [2]. Annual summer heat-related deaths, for example, have exceeded 3000 [3]. These health effects fall unevenly across society, exacerbating existing inequalities [2,4].

Simultaneously, climate policies – whether for mitigation or adaptation – offer significant potential to benefit public health [5,6]. Active travel, better-insulated buildings, and healthier diets can reduce both healthcare demand and greenhouse gas emissions (GHGs) [7,8]. Urban green space and nature-based solutions to flooding can deliver co-benefits for ecosystems, mental health and wellbeing, and resilience to extreme weather [9].

Growing awareness of these interconnections has made climate and health policy integration a subject of growing interest for policymakers, advocates and researchers, giving rise to new interdisciplinary frameworks like Planetary Health [10,11]. In the U.K., policy initiatives to better integrate these agendas have included the 2008 Sustainable Development Unit (SDU) and its successor *Greener NHS*, whose

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decarbonization efforts are now underpinned by the UK's National Health Service (NHS) becoming the first to adopt legally binding net-zero targets [12,13]. Since its creation in 2021, the UK Health Security Agency (UKHSA) has worked with government agencies, departments and academic institutions to generate evidence on the effects of extreme weather and emerging patterns of disease [14,15]. The Centre for Climate and Health Security, established in 2022 under the UKHSA, coordinates expertise across the agency. Wales and Scotland have pioneered their own approaches, including ground-breaking legislation in Wales to prioritize the health and wellbeing of future generations [16,17].

Nevertheless, many opportunities for better integration remain unexploited [18–20]. Calls for greater climate-health policy integration have been widespread [e.g. 21,22,8]. However, barriers and opportunities remain under-explored. This study examines the views of UK policymakers, practitioners and advocates (hereafter referred to collectively as 'policy actors'), as expressed in interviews, on current climate-health policy integration; their visions for optimal integration; key barriers to realizing them; but also opportunities and strategies to make progress. It forms part of a multinational study with parallel research, based on the same set of questions, in Brazil, Caribbean nations, Germany, India, Kenya, and the U.S., enabling comparison across diverse governance contexts [23].

1.2. Policy integration in theory and practice

Policy integration is an established concept in public policy/ public administration disciplines. Our approach was influenced by well-established research into how environment and climate-related objectives are, or could be, integrated into wider day-to-day policy of more established sectors to obtain the most effective results [24,25]. The concept of silos is often used to diagnose the problem of separate government departments operating as inward-looking and self-contained entities, focusing primarily on their own narrowly conceived goals without regard for outcomes that involve collaboration or coordination with others [26]. Much of the existing environmental and climate-related literature focuses on diagnosing and categorizing barriers and enablers to overcoming such silos [24,25]. It also emphasizes the importance of the institutional environment in determining the success of policy integration efforts across silos. In this, institutions are taken to be systems of rules, norms and cultural patterns of meaning that shape courses of action, towards the achievement of common goals [27].

This literature identifies a number of important institutional variables underpinning policy integration, such as processes to exchange relevant information, evaluate existing or proposed policies and resolve conflicting priorities; inter-ministerial/ organizational dynamics, including resource allocation; and high-level leadership [24,25]. It also identifies the importance of the functional relationship between long-term climate or environmental policy objectives and the objectives of other policy sectors into which integration is sought; the extent to which relationships are conflictual, or affinities and co-benefits can be identified [25]. While "climate-in-all-policies" and "health--in-all-policies" agendas emerge from distinct epistemic communities, there are significant synergies and co-benefits between them [6]. With such synergies increasingly recognized, our research was interested in how far the institutional context in the UK is conducive to or hampers their realization, and what can be done to deliver greater ambition.

1.3. Outline of this article

This article begins by outlining our interview-based methodological approach to investigating these questions (Section 2). Section 3 presents our main findings, illustrating them with key quotes from our interviews. This then informs a discussion (Section 4), which reflects on UK findings on health and climate policy integration in the light of international experience, and comparable efforts to integrate environmental and climate policy. It further reflects on the opportunities presented by a government that was elected after our interview evidence was gathered, as well as future research avenues suggested by our findings and by this new institutional context. Section 5 concludes.

2. Materials and methods

After approval was granted by the UEA Faculty of Science Research Ethics Subcommittee in December 2023, between January 2024 and January 2025, semi-structured interviews were held with 43 individuals working in either climate policy (n = 9), health policy (n = 8), their intersection (n = 21), or related areas (n = 5) such as housing and land-use planning. These categories were intended to help identify possible differences of emphasis or opinion on relevant themes. Potential interviewees were identified through professional networks, online searches and snowball sampling, then recruited via email. Participants included parliamentarians (n = 2), government advisers (n = 2), central government civil servants (n = 6), devolved (country-level) government (civil servants (n = 5), local government (n = 5), government agencies (n = 8), academic researchers (n = 7) and representatives from NGOs, advocacy groups and think tanks (n = 9), at various career stages.[1]

Interviews were conducted via Teams and transcribed. Three researchers (ES, TR, JG) conducted qualitative content analysis in ATLAS.ti using both deductive and inductive codes drawn from interview topics and inductive codes that emerged from participants' responses.[2]

Certain limitations to our approach need to be acknowledged. Firstly, recruitment proved challenging with parliamentarians and central government departments in particular. Secondly, participants may have been more supportive of climate-health policy integration than non-participants; this self-selection effect is common in qualitative research of the kind undertaken here. We focused on individuals with direct professional involvement in climate and/or health policy, whether through policymaking, implementation, research or advocacy, to gather informed perspectives on institutional barriers, opportunities, and strategies for integration. While in principle, this approach can complement research with affected communities, whose lived experiences of climate and health impacts warrant investigation using appropriate participatory methods, involving communities in this way was beyond the scope of our study.

Thirdly, our original intention was to explore how participants' perspectives might differ systematically across categories. However, the high degree of consensus on key themes, together with uneven distribution across categories and small sample sizes within categories meant that such segmented analysis did not yield meaningful differentiation, with the distinction between public health and healthcare orientations as the one notable exception. While we explored participant perspectives through qualitative analysis, we did not independently verify factual claims against documentary sources, nor did we test the feasibility of suggested strategies through policy analysis – both of which would require different methods and were beyond the scope of this study.

While our approach elicited valuable insights and identified common themes, the sample should not be considered statistically representative of U.K. policy networks. We therefore avoid citing exact numbers when reporting specific views. To minimize bias, we framed interview questions neutrally (e.g., "Should climate policies and health policies be more closely linked than they currently are, or more separated?") and grounded findings in participants' own statements. To mitigate the

[1] 'Devolved' government refers to parts of the United Kingdom, such as Scotland, Wales, Northern Ireland and parts of England that have been granted a greater level of self-government than the rest of the country.

[2] Coding generated 927 unique codes applied 3,357 times across transcripts (median applications per code = 2). Details on the coding methodology and most frequently applied codes are provided in Supplementary Materials.

possibility of misunderstandings or inaccuracies and validate findings, we sought feedback from over 80 professional invitees at a preliminary findings briefing and additional respondents at the report launch event in early 2025. This latter event in particular allowed us to reflect on how our findings relate to a new policy context provided by the advent of a new government in mid-2024. Further methodological details, including interview questions, are included in the supplementary materials.

3. Results

3.1. Current status of integration of climate policy and health policy

Most participants observed that the widely acknowledged links between climate change and human health are reflected in various policy documents and related initiatives. However, effective integration of these links into more detailed policymaking was seen to remain limited at multiple levels. Reasons cited for this gap included siloed government departments, insufficient resourcing, and a lack of cross-cutting policy frameworks or venues for more integrated policy development.

Siloing was observed to occur between levels of government as well as sectors, highlighting vertical and horizontal coordination issues. Horizontally, as one interviewee put it,

> "If you go to what used to be BEIS [the Department for Business, Energy & Industrial Strategy], they will talk about business, and they don't give a monkey's about climate change or health. If you go to the Department of Health, they'll [acknowledge] that climate change might be bad for health, but they've got COVID recovery, and cancer, and four-hour waits… And if you go to anyone else in Treasury, for instance, they don't care about any of the above, they just want things to carry on as [they are]."
>
> - Academic / policy adviser

While local and devolved governments (particularly Scotland and Wales) may take relatively integrated approaches to climate and health policy internally, they face challenges aligning these efforts with fragmented UK-level requirements. In the words of one Scottish respondent:

> "When it comes to the implementation of policy it starts to fall down those different silos. So in the context of adaptation…locally we've identified that as a priority so we have our range of partners working on a climate risk assessment that's multi-agency. The challenge then is marrying that up with national requirements which are falling down in a very siloed way."
>
> - Public health expert in Devolved Administration

Despite these overall limitations, participants identified the Greener NHS initiative as a relative success. Building on the efforts of the Sustainable Development Unit (2008–2020), it has generated interest and improved understanding among healthcare professionals about more sustainable practices. This represents a significant step forward in integrating climate considerations into the healthcare system (if not wider public health), emphasizing sustainable practices and reducing the carbon footprint of healthcare services while, more recently, also addressing adaptation.

Wide variation in awareness and engagement levels is evident among medical professionals [e.g. 28–30]. However, there are also signs that the medical profession is becoming more conscious of its role in climate and sustainability governance, and is educating its new students accordingly. The General Medical Council, the body regulating professional standards, now includes sustainability duties in its standards of care and behavior expected of all medical professionals [31].

3.2. Views about optimal integration

Most respondents expressed a view that climate and health agendas *should* be strongly linked, with many advocating a holistic approach that reflects their inherent interconnections. Many advocated a "climate-in-all policies" and/or "health-in-all-policies" approach, to promote better integration of both climate and health considerations across all policy areas [6].

> "One shared property between health and climate change is [that they are] very overarching…they're both areas that impact or have interactions with basically all areas of government and public sector and society essentially.'"
>
> - Public health expert in Devolved Administration
>
> "I would say they need to be dealt with together… the One Health concept…which is a holistic look at the animal, plant, and human health interface and that multi-layer approach to dealing with hazards like climate change and health…I believe in that concept – that we need to understand the interface of them all together as…one thing. So, yeah, I think they should be aligned, and where they're integral…to good policymaking is understanding health and climate change at the same time."
>
> - Civil servant, UK regulatory agency

Participants working in public health roles emphasized addressing wider determinants of health – housing, transport, air quality, access to green spaces, mental health, and availability and quality of healthy and nutritious food – focusing on preventing illness and promoting well-being. Interviewees from more specific healthcare roles tended toward a narrower focus, primarily on decarbonizing the NHS through initiatives like reducing emissions from anesthetic gases and improving energy efficiency in healthcare settings.

Participants identified vulnerable groups - those less able to control their environment, adapt their behaviors or respond to new risks - as a necessary and critical focus of climate and health policies. They include children, the elderly, people with pre-existing health conditions, disabilities, or in settings such as prisons, schools and social care, those experiencing homelessness, or those in more socio-economically deprived communities that often include significant ethnic minority populations [2,15]. These groups face disproportionate climate impacts, notably from increased heat stress in urban settings [15].

3.3. Barriers to optimal integration

Despite the clear need and acknowledgment of the benefits of integrating policies in principle, participants noted and elaborated upon a number of barriers in practice, distilled here under eight headings.

3.3.1. Resource constraints

Chronic underfunding and limited resources and capacity were most frequently cited as the most significant barriers to greater climate and health policy integration. A lack of dedicated roles and budgets often results in work on climate and health being done informally, leading to inconsistencies and gaps. Even with dedicated partnership roles, opportunities may be limited by structural barriers.

> "[T]he key barrier is that it is still the case that work on climate and health is done in people's own time within the public health system and health in general. Like for me, 90% of my job is not climate; I spend probably two days a week working on climate, unpaid – completely unpaid."
>
> - Experienced public health professional

3.3.2. Short-termism

A focus on short-term objectives was identified as an impediment to long-term efforts to address climate and health issues. The health service often reacts to immediate demands (including political pressure to avoid negative media coverage of the NHS), undermining efforts to address longer-term issues. One participant noted

"… an inherent bias in the [UK government] system against long-term sustained action and investment which is very, very difficult to tackle…But we definitely see that in public health where you try and make a case for anything that needs to be done over a long period."

– Advocate / policy adviser

As a result, decision-making does not fully consider future climate impacts. One participant, a government policy adviser, vividly observed that "we're still building hospitals on floodplains – new hospitals. It is such a short-term vision of the future that I cannot believe that is the case."

3.3.3. Bureaucratic inertia

Some participants cited resistance to change or inertia within large and bureaucratic systems and institutions, particularly the NHS. Such systems are designed for stability and resilience, making transformational change especially challenging.

"Healthcare systems and hospitals are usually inert to most forces that try to get them to change…Cost pressure, supply constraint – they are built to be incredibly stable and resilient systems, and they do a very, very good job of resisting the will of a CEO, a CFO, a health minister, a patient, anything."

- Former government civil servant

3.3.4. Siloing and fragmentation

Siloed decision-making between and within government departments (nationally and locally) fragments policymaking for climate and health. The decision to devolve public health responsibilities to local government (under the Health and Social Care Act (2012)) separated it from the health service (which has most to gain from effective public health but had no effective remit to engage). Meanwhile the remit of the Department of Health and Social Care remains essentially confined to healthcare rather than wider public health. Such a division of responsibility has arguably resulted in deteriorating public health, adding to unsustainable (more carbon-intensive) demands for healthcare as well as worsening inequalities (interview, academic).

Pursuing inter-disciplinary working brings complexity that generally slows policy delivery. Faced with additional complexity with no additional resource available to offset this 'downside', 'policy leads' from non-health sectors may decide to avoid integration with health agendas (see also discussion of 'expertise', below).

3.3.5. Science-policy interface

Participants described various barriers that were specifically evidence-related; among these were that research outputs often fail to match practical needs. Available evidence may be neglected when civil servants are unfamiliar with the particular form it takes, as has happened for example with research findings on behavior change (see also [32]).

Several participants questioned whether conventional evidence hierarchies, typically privileged in healthcare decision-making, are appropriate for evaluating complex system-wide changes needed for climate and health policymaking. They argued that different types of evidence may better inform transformational change, allowing it to be delivered in a timely manner. Transformational, system-level interventions to deliver meaningful progress do not fit well with the expectations of central government (Treasury) Green Book-style assessments.

"So evaluating them in the way and providing the evidence that an economist would require is really an unreasonable ask I'd say. [B]ecause actually plenty of good policy is made on the basis of other dimensions…[T]his is a little bit of a deflection by saying that there isn't enough evidence. I think we need to challenge that as a professional cohort and say well what's the threshold for evidence required for *this type* of intervention."

- Experienced public health professional

While the importance of evidence-based policymaking was acknowledged, some participants argued that sufficient evidence already exists to justify action, and that the focus of effort should shift accordingly, in the face of particularly urgent challenges.

"[S]o that's why I'm not writing any more reports on climate change and health because we have the evidence there that we need…."

– Academic / policy adviser

3.3.6. Expertise

Effective integration requires knowledge across multiple domains (i.e. climate, health, and other sectors such as transport and housing), but some participants observed that this is rare and difficult to achieve within existing professional frameworks.

"[Y]ou haven't got many people who have got really good expertise on both climate change and health, or if you have, they're probably quite rare. So it's either about climate change people trying to learn about health, or public health, or health people trying to learn about climate change…I think you need people with a good understanding across both really."

- Civil servant, devolved administration

Expert actors need to know their counterparts' agendas to propose appropriate contributions and shared solutions. Even with such expertise in place, structured programs to enable it to develop effectively may not exist.

3.3.7. Industry influence

Industries reliant on fossil fuels and the house-building sector, whose lobbying power can delay adoption of more ambitious and integrated policies, were also identified as significant barriers.

"In climate change clearly we are seeing a lot of influence from the fossil fuel industry…and so we're quite concerned about what we call the commercial determinants of health, the negative impacts of companies and industries that are influencing and lobbying in some ways legitimately for their commercial interests but potentially in the process causing quite significant harm to public health. So there's a question for government about … transparency."

– Advocate / policy adviser

3.3.8. Lack of venues where integrative progress can gain momentum

One particularly well-placed interviewee noted that while other cross-cutting issues, such as housing and planning, have structures that allow for developing relevant proposals, of the kind that could be included in a central government spending review, for example, climate and health policy lack this. It is therefore unclear where actors with knowledge of relevant evidence and systems could come together to develop major policy initiatives such as a White Paper. Windows of opportunity open and close more unpredictably, requiring advocates to be prepared for these moments rather than pursuing more structured policy development.

3.4. Opportunities to advance integration

Despite the cited barriers to better integrating climate and health policies, several promising opportunities were seen by participants to have potential to facilitate improvement.

3.4.1. Emphasize co-benefits

Participants frequently highlighted the potential for significant co-benefits arising through increased integration, and how these can be highlighted to reinforce or deepen existing commitments to climate objectives. Promoting a shift towards more plant-based diets, active travel, and household retrofitting were frequently mentioned as areas where significant co-benefits could be achieved, and where significant emission reductions remain to be fully exploited. These actions reduce emissions whilst also addressing serious health issues such as obesity and cardiovascular disease, and improving mental health and physical fitness. Quoting recent research, one (academic) participant noted that local government public health interventions can be 3–4 times as effective as the NHS in producing health gain [33].

Several participants focused on the need for retrofitting existing housing stock. Better insulation, installation of energy-efficient heating systems, and improved ventilation can reduce carbon emissions and improve indoor air quality.

Within healthcare settings, better patient education on conditions like diabetes and asthma represents a highly efficient carbon-saving intervention. The high proportion of the NHS carbon footprint accounted for by medicines and medical supplies highlights how progress on a more disease-prevention-oriented approach could yield considerable emission reduction benefits.[3]

3.4.2. Exploit economies of scale in the health system

The sheer scale of the NHS – one of the largest employers and service providers in the UK, accounting for 10% of GDP and £170bn in purchasing power - offers substantial opportunities to make impactful change. The Greener NHS program demonstrates what is achievable. The NHS can leverage its purchasing power and influence over supply chains and consumers to drive large-scale changes through efforts such as prioritizing plant-based menu choices and retrofitting buildings for improved energy efficiency.

3.4.3. Learn from devolved experience

Finally, learning from the approaches taken in the devolved governments of Wales and Scotland presents valuable opportunities. The Wellbeing of Future Generations (Wales) Act (2015) offers a pioneering legislative framework focused on sustainable development, which facilitates stronger integration of climate and health policies, and addresses health inequalities that are exacerbated by climate change. Scotland's approach includes the development of a climate emergency strategy within NHS Scotland, providing lessons for capacity building and policy alignment.

3.5. Strategies to advance integration

Participants proposed four main strategies to advance policy integration given identified barriers and opportunities: enhanced cross-sector coordination and interdisciplinary cooperation; establishing dedicated roles and resource allocation; ensuring evidence is fit-for-purpose; and engaging and empowering communities.

3.5.1. Enhanced cross-cutting coordination and interdisciplinary cooperation

One participant observed that embedding individuals with expertise and insights on health considerations into other policy areas can help to ensure that health outcomes are consistently addressed for more effective policies. Another explained that this integration goes beyond bringing together climate and health experts to involve specialists in other related areas such as housing and transport.

Three specific institutional or legislative innovations were suggested by different participants. One was to introduce legislation for a new Public Health Act requiring all government departments to consider health outcomes more comprehensively in policies and funding decisions. A second suggestion was for a cross-departmental 'Healthier Nation Commission', modeled on the Climate Change Committee to provide independent, expert advice and hold government accountable for its decisions through five-year programs with dedicated budgets. A third suggestion was that a new Minister for Resilience and Adaptation could oversee the integration of climate and health policies, among other areas, ensuring a holistic approach across government departments.

3.5.2. Dedicated roles and resource allocation

Many participants stressed the need for dedicated roles and resources to ensure sustained focus and expertise. This includes removing financial and skills barriers while ensuring climate adaptation is considered in all spending decisions rather than like-for-like replacements.

3.5.3. Accessible, fit-for-purpose evidence

A third strategy mentioned by participants is to ensure that evidence is accessible and fit for purpose including establishing focused research agendas addressing the practical needs of policymakers and developing and using robust and relevant indicators to inform policy decisions.

Participants suggested that indicators for adaptation, while more complex than net-zero targets, are conceivable. A couple of participants explained that the adaptive pathways model – an approach to guide decision-making under uncertainty – can be adopted to help policymakers respond to risks and make more informed decisions even where precise data are not available [34].

3.5.4. Engaging and empowering communities

Some participants emphasized co-producing policies with affected communities to ensure tailoring and buy-in. This includes amplifying unheard voices and ensuring equity in the process. Participants highlighted the value of 'lived experience' projects that bring policymakers and communities together for genuine co-design, enabling mutual understanding of constraints and opportunities. Table 1 summarizes the potential strategies and opportunities, raised by participants, in relation to the barriers discussed earlier.

Table 1
Barriers and proposed opportunities and strategies to overcome them.

Barrier	Potential strategies/ opportunities
Resource constraints	• Dedicated roles and resource allocation • Emphasize co-benefits to justify investment • Leverage NHS purchasing power
Short-termism	• Learn from Wales Future Generations Act • Adaptive pathways approach for long-term planning • Reform Treasury assessment methods
Bureaucratic inertia	• Leverage NHS scale for system-wide change • Build on Greener NHS momentum
Siloing and fragmentation	• Enhanced cross-cutting coordination • Minister for Resilience and Adaptation • Healthier Nation Commission
Science-policy interface	• Fit-for-purpose evidence and indicators • Adaptive pathways approach • Community engagement for practical insights
Lack of expertise	• Interdisciplinary training and collaboration • Embed health experts across departments • Build structured development programmes
Industry influence	• Community empowerment as counterweight • Transparent lobbying processes • Engage progressive industry leaders

[3] All except one of our interviews took place before the calling of a general election in the UK, and the incoming government's announcement of prevention as a priority for health policy reform in a new 10 Year Plan for Health. Had interviews been held later, it is very likely that interviewees would have referred to this as an important opportunity.

4. Discussion

These findings align with previous research showing relatively limited integration of climate and health policies across UK nations [19]. They also identify key features of the UK institutional landscape in which efforts to improve the situation must necessarily occur, and add new insights into the necessary conditions for change, and possible pathways for progress.

Echoing findings from the literature on environmental/ climate policy integration, we find that although the 'functional relationship' between long-term climate and health objectives is positive in principle, institutional realities often work to obscure this. Aside from the kind of siloing that is an endemic feature of all governments, we find that the overriding political priority given to the NHS is an enduring feature of short-termist UK political culture, which can work to the detriment of wider public health goals. While entrenched bureaucratic inertia may have some benefits, it works against the kind of transformative agenda that adequately responding to the climate crisis requires.

Similarly, the Treasury is an especially powerful presence in the UK, partly on account of its holding joint economic and finance ministry functions, and its ability to cap the financial resources other departments have at their disposal. Its unhelpful strictures for demonstrating the value for money of proposed policy interventions must be followed by advocates for more transformational types of change, on climate and health-related policy and indeed elsewhere [35]. Devolution of policy-making adds a degree of multi-level complexity to aligning national and sub-national action that particularly affects Scotland and Wales.

Improving integration in the short term in these circumstances will require a degree of opportunism until more adequate venues for evidence and information exchange and integrated policymaking are developed, and greater resourcing for public health programs in particular is forthcoming. This, in turn, will take committed leadership.

These findings resonate with those from the wider multinational study [23]. Across all six geographies, participants identified departmental siloing across government as a central barrier, along with the destabilizing effect of administration changes on climate and health initiatives. Resource constraints and institutional inertia within large healthcare systems were similarly prominent in Brazil, Germany and the US. Yet despite these common challenges, strategies recommended by participants converged on enhanced cross-sectoral collaboration. 'Health in all policies' and 'climate in all policies' approaches were advocated in Brazil, the Caribbean, Germany, Kenya and the UK. The need for multi-level governance aligning national and sub-national action was identified in Brazil, Germany, Kenya and the UK, reflecting coordination challenges posed by devolved or federal structures. These parallels suggest that the barriers identified by UK study participants are not unique to this country context but represent more widely shared challenges facing climate and health policy integration internationally.

4.1. Signs of integration

Since our interviews, the election in 2024 of a Labour government has created a new context for climate and health policy integration. The *10 Year Health Plan for England* commits to prioritizing actions to deliver the existing commitment to a net zero health service (by 2040 for emissions the NHS controls, and 2045 for emissions it can influence) [36]. All NHS bodies are expected to decarbonize and increase resilience to climate risks. A £100 m partnership between the NHS and the newly state-owned Great British Energy, set up to promote renewables and energy efficiency, indicates new connections being established. The plan's three declared 'shifts' - from hospital to community as a focus for healthcare; from treatment to prevention; and analogue to digital - each have potential to advance climate, health, financial and wider sustainability co-benefits, if carefully designed and implemented.

Additionally, the £42 million joint UKRI/National Institute for Health and Care Research funding program for transdisciplinary research hubs announced in 2025 to support decarbonizing health and social care in NHS England indicates increased commitment to generating the kind of evidence many have been calling for on challenges, including low-carbon transport, housing, diets, responses to extreme temperatures [37].

Nevertheless, obstacles and headwinds presented by competing priorities are not hard to find. For example, climate and health integration does not feature explicitly in the new government's five headline Missions that are intended to inform its overarching policy goals [38].[4] Although this innovation in government could have presented opportunities to develop new venues for cross-cutting policy, calls to, for example, develop joint budgets with shared outcomes across the Mission areas were not heeded in the April 2025 spending review, and government remains straitjacketed by its strong commitment to 'fiscal rules' [39]. Despite the cost-effectiveness advantages of local government public health services over the NHS in producing health gain, the 10 Year Plan says nothing about this balance, and does not commit to significantly increasing preventive spending in the short-term. Ambitious proposals remain stuck while the scale and severity of climate impacts intensify.

4.2. Future research agendas

In several cases, the eight barriers to integration that we identified have a tendency to reinforce one another. The precise dynamics by which this occurs could be investigated in future research. More positively, future research should explore how devolved governments have been more able to overcome departmental siloing, identifying specific mechanisms that might be transferable to the rest of the UK. The role of evidence in policy integration requires examination both descriptively, to understand current practice, and normatively to identify improvements. Emerging concepts like *Preventative Investment* merit investigation, particularly given the Treasury's newly apparent acceptance of the importance of assessing long-term preventative benefits, to understand how these might shift government culture away from short-termism [40, 41]. As one participant (and launch event respondent) noted, demonstrating how the climate-health agenda supports all five government missions – showing that economic dynamism and environmental sustainability, wealth and health, go hand-in-hand – could prove crucial for maintaining momentum. Without human and planetary health, sustainable communities defined by security and opportunity cannot be created or maintained.

Development of meaningful adaptation indicators for health systems remains challenging but necessary, as participants noted. Unlike net-zero mitigation targets, adaptation lacks obvious benchmarks, yet indicators could help track progress. Research into alternative financing mechanisms beyond traditional public funding could unlock new resources for integrated climate-health interventions. Equally important is understanding how to translate existing evidence into policy action more effectively, and how to create integration processes robust enough to withstand political changes.

Additionally, our findings suggest a need for field-testing participants' recommended strategies through varied methodologies and with larger sample sizes. International comparative research could illuminate different approaches, particularly from Global South contexts with distinct governance structures and climate risks. More specific climate-health policy domains – adaptation, health system sustainability, and disaster preparedness – require deeper investigation, as does integration with adjacent sectors, such as agriculture and transport.

[4] The five Missions include: 'kickstarting economic growth', becoming a 'clean energy superpower', 'safer streets', 'breaking down barriers to opportunity and building' 'an NHS fit for the future' [38].

5. Conclusion

The findings of this study underscore both the urgent need and significant potential for better integration of climate and health policies in the UK. While there is growing recognition of the intrinsic links between climate change and human health, practical integration in national policymaking remains limited by a combination of siloed decision-making, resource constraints, and a lack of long-term planning.

However, substantial opportunities exist to improve the situation by emphasizing co-benefits, leveraging the scale of the NHS, learning from pioneering approaches in Wales and Scotland, and fostering greater cross-sector coordination. A holistic, more systemic approach that addresses the wider determinants of health and prioritizes vulnerable populations will be essential.

Participants in our study emphasized how the urgency of addressing climate impacts demands moving from evidence-gathering to decisive action, using frameworks appropriate for transformational change rather than incremental adjustment. Significant legislative reforms may be necessary, such as establishing a Minister for Adaptation and Resilience or enacting a new Public Health Act that requires all departments to consider health implications. In the meantime, the government's 10 Year Health Plan and overall mission-led approach offer more immediate opportunities to embed climate and health thinking across policy.

By seizing these opportunities while addressing the identified challenges, the UK can develop more integrated, effective policies that protect human and planetary health.

Data statement

Due to the sensitive nature of some of our interview questions, the data collected for the study are confidential and will not be archived publicly.

CRediT authorship contribution statement

Tim Rayner: Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Formal analysis, Data curation. **Elta Smith:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation. **Candice Howarth:** Writing – review & editing, Methodology. **James Graham:** Investigation, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.joclim.2026.100684.

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