

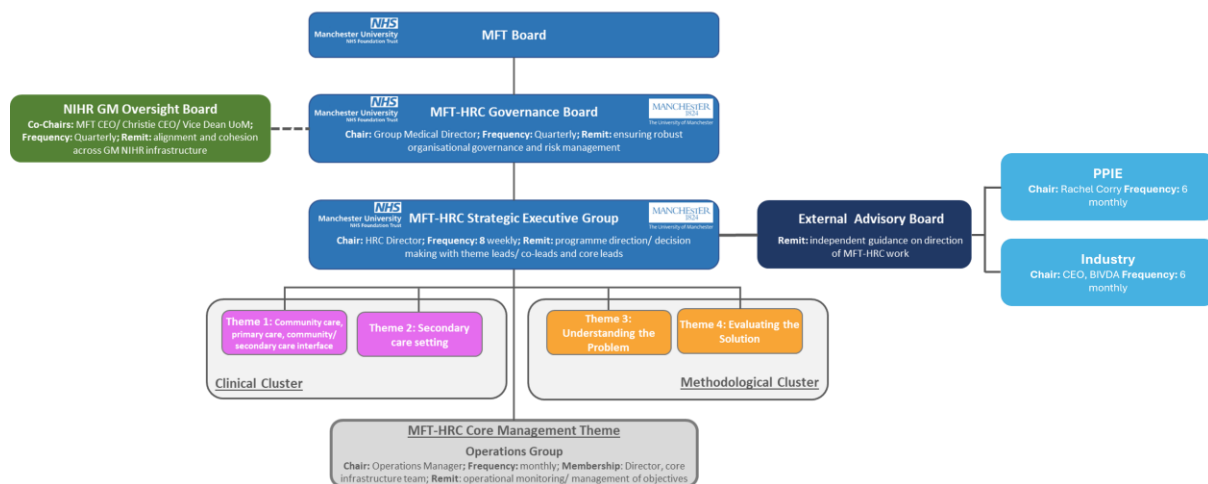
NIHR HealthTech Research Centre in Emergency and Acute Care Sustainability Strategy

Sustainability Lead

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Governance

To ensure accountability, coordination, and effective management of delivery against the centre's strategic goals, delivery of the strategy will be led by the centre's Sustainability Lead: who will develop an action plan to measure outcomes and periodically review to assess progress against objectives. The strategy remains a live document, in which aims and objectives are flexible, and may be periodically realigned to remain in congruence with the centre's overall strategic objectives and operational capacity. Implementation of the Sustainability strategy will be overseen by the HRC Operations Group (of which the HRC Sustainability Lead is a member), with escalated responsibility to HRC Theme Leads, Co-Leads, and Researchers. Sustainability will be a standing item on the agenda. Overarching achievement of centre-level objectives are overseen by the HRC Strategic Executive, with changes in scope or scale escalated to the HRC Governance Board: Chaired by Sohail Mushni, who similarly holds oversight of the implementation of the MFT Green Plan as chair of the Trust's Population and Health Oversight Committee.



Strategy vision

The overarching vision of the NIHR HRC in Emergency and Acute Care is to transform emergency and acute care by driving the commercial development of health technologies (HealthTech). We are committed to ensuring that considerations for environmental sustainability, the impact of our activities, and the impact of our research, is championed in all we do. Our sustainability strategy has been developed in consultation with key-stakeholders in sustainability from across the R&I ecosystem, HRC Network, and industry. Our vision for Sustainability is built around core values which will be embodied in everything we do across the whole research lifecycle of the HRC.

Aligned with NIHR's Commitment to Climate Health and Sustainability, we are committed to demonstrating how the HRC will contribute to NIHR's mission of reducing the environmental impacts of our activity and actively exploring new ways to decarbonise health and social care through the research that we do. Our approach embeds the following cross-cutting themes:

- Building global, cross-sector partnerships and networks
- Ensuring our work addresses ongoing NIHR priorities to tackle global health inequalities.
- Addressing health inequalities
- Placing the needs of patients and public at the centre of all that we do

Aims and Objectives

Working in close partnership with other HRCs, The University of Manchester, Manchester Biomedical Research Centre (MBRC), and our industry colleagues we have the following four aims:

1. Operational Delivery: Minimise the carbon footprint of our research delivery and day-to-day activities.
2. Knowledge Mobilisation: Disseminate sustainability-focused research and ensure alignment with sustainable healthcare innovation goals.
3. Training and Capacity Building: Equip R&I staff, innovators, and stakeholders with the skills to embed sustainability into their roles.
4. Sustainable Research: Integrate sustainability into research priorities, ensuring healthcare innovations reduce resource intensiveness and support a net-zero future.

Aim 1 – Operational Delivery: Minimise the Carbon Footprint of the operational delivery of our day-to-day research activities.

We will first undertake work to understand the current impact of our activities, and then take action to reduce the carbon footprint of core operations.

We will take action to incorporate sustainability into the day-to-day operation of our centre. We will undertake routine assessments of the carbon impact of each of our projects to identify areas of action. We will work with our partner organisations to reduce our impact through better research design, more considerate research use, and a reduction in waste. Our core staff will be empowered to take ownership of the carbon impact of their work, and will commit to activity to reduce the carbon impact of their workplace.

Objectives

1.1 Impact Assessments: To understand the potential impact of our evidence generation projects, we will implement a system of Sustainability Impact Assessments to be undertaken with each new project. Impact Assessments will give a high-level view of the potential impact of each project on the environment, and highlight any areas of concern where actions could be considered to reduce carbon impacts.

1.2 'Hotspot' Identification: Following the implementation of Sustainability Impact Assessments into our standard project set-up process, data generated will be routinely reviewed to identify areas of research which may have a particularly significant impact. Investigation will then follow to understand the cause and any possible mitigations.

1.3 Sustainability in Job Descriptions: Future job descriptions for the core HRC staff will be revised to include a commitment to sustainability. This will ensure accountability of core staff to sustainability commitments, and help to ensure such commitments are embedded into day-to-day work.

1.4 Sustainability in Staff Appraisals: HRC core staff will be asked to make a goal related to sustainability in their annual appraisals, with progress against these regularly monitored.

1.5 Carbon Reduction Guidelines: Using the NIHR's Carbon Reduction Guidelines as a model for sustainable research design, we will look to implement consideration for the environment into all levels of our research through more sustainable research planning. Implementation would include consideration for sustainability in study design, grant preparation, study conduct, data collection and monitoring.

1.6 Sustainability in Project Prioritisation: The HRC will utilise the process in which new collaborators interact with the HRC, including its enquiry form, assessment forms, and project prioritisation process, to ensure that due regard is given to sustainability within project prioritisation and innovation scoping processes – so that projects with potential benefits to sustainability are identified and prioritised appropriately.

1.7 Sustainability in Due Diligence: When working with new commercial partners, the HRC will look to ensure that companies share a commitment to sustainability, including where appropriate a viable Carbon Reduction Plan. The HRC will work with its commercial partners who do not meet these requirements to develop the company's maturity in regard for sustainability.

1.7 Implementation of LEAF: The HRC will partner with the University of Manchester to help implement the Laboratory Efficiency Assessment Framework (LEAF) into its affiliated laboratories. This would ensure that due consideration for the environment is integrated into laboratory work directly associated with the HRC, reducing its associated footprint. Concordance with LEAF principles is externally assessed and regularly reviewed in-order for associated labs to keep their accreditation.

1.8 Research Practices: Where reasonably practicable, the HRC will work to incorporate sustainable practice into its research design. Utilising innovative practices and novel technologies such as wearables, remote monitoring, and home visits, we will look to minimise the impact of our research while simultaneously maintaining the highest standards for research quality and inclusivity.

1.9 Staff Travel: Where reasonably practicable, the HRC will look to minimise unnecessary staff travel, utilising modern practices such as remote working and online meetings to ensure travel is reduced while still maintaining the highest levels of conduct and working environment.

Aim 2 – Knowledge Mobilisation: Equip our staff, innovators, and stakeholders with the skills to embed sustainability into their work.

To equip clinicians, academics and industry partners with the skills and confidence to navigate this evolving field, we will work to disseminate knowledge and resources to our community of researchers and innovators to grow awareness and confidence in sustainable

innovation. We will share our knowledge, and best practice in sustainable research and innovation. We will equip our stakeholders with the appropriate knowledge and skills to innovate sustainably.

We will achieve this by sharing knowledge and resources, alongside creating opportunities for mentorship, cross institutional engagement, training, and collaboration we will create a supportive environment where expertise and best practice in sustainability are shared and professional development is encouraged, enabling more effective collaborations, and more sustainable research.

Objectives

2.1 Case studies: To share knowledge and good practice, we will develop case studies of sustainability-focused innovations and research that highlight positive carbon impacts of novel innovations as an example to future researchers and innovators

2.2 Internal Guidance: Internal guidance will be prepared to develop knowledge confidence in HRC and other internal MFT staff in sustainable research. Guidance will cover topics such as how to incorporate sustainability into research design, and how to talk to external stakeholders about sustainability. This will help HRC staff and other relevant staff to embed sustainability into their roles.

2.3 Promotion of Sustainability to New Partners: When working with new prospective partners, be they industry or academic, the HRC will look to promote awareness of sustainability and its importance in healthcare and innovation – helping to ensure that companies can align their principles to the needs of the NHS.

2.4 NHS Sustainable Procurement Requirements: To Support external partners in co-designing sustainable innovations to align with NHS carbon reduction and procurement goals, the HRC will work with each new industry partner to promote awareness of the NHS Supply Chain and NHS England requirements for procurement around sustainability, including Carbon Reduction Plans for and Evergreen Assessments for supplier organisations, and carbon footprints for products. Where reasonably practicable, the HRC will use any relevant work with industry partners in preparation for certain aspects of these requirements by encouraging partners to embed sustainability into their research and product design.

2.5 Resource Hub for Industry and Innovators: To improve access to resources on sustainability, the HRC will create a centralised resource hub for access to relevant tools, information, policies, training, and funding opportunities. This will help industry and innovators to access sufficient information and learning to not only meet mandatory requirements for sustainability in the NHS supply chain, but to also further integrate sustainability into the concept and design of their products, should they wish to do so.

2.6 Checklist for Sustainable Innovators: To help embed sustainability across the conceptualisation and design of technologies, the HRC will create a simple to use checklist for sustainable innovators. The checklist would help introduce early consideration for sustainability in the development pathway of products, and will be modelled upon the Design for Life Roadmap outlined by the Department of Health and Social Care.

2.7 Promotion of Circular Economy Principles: The HRC will work with innovators to promote net zero co-design of technologies where feasible and realistic by encouraging the use of circular economy principles where appropriate, and leveraging partnerships with the UKRI

Circular Economy Hub, and in alignment with the principles of the Department for Health and Social Care's Design for Life Roadmap.

2.8 Stakeholder mapping and needs scoping of industry challenges: The HRC will conduct an exercise of stakeholder mapping of key industry and sector collaborators to fully understand the challenges faced by the UK HealthTech sector when it comes to meeting the NHS's net zero ambition. Collaborative sessions will then be held to explore, in partnership with industry representatives, ways that the sector can meet such challenges: including any suggested adaptations that the NHS, NIHR, and regulators could make to facilitate industry in meeting the challenges identified.

Aim 3 – Capacity Building: Build a community of sustainable innovators and researchers.

To build a community of practitioners and innovators with expertise in sustainable innovation, we will look to give our staff and researchers the skills and confidence to incorporate sustainability into their roles and research. We will work with innovators and industry to integrate sustainability into product design and evidence generation.

We will work with the themes of the HRC to continuously scope learning needs and provide responsive events and resources, linking to the training passport being developed by the MBRC. By integrating interactive online resources, practical workshops and expert led masterclasses we will provide accessible high-quality training in sustainable innovation.

Objectives

3.1 Expansion of Carbon Literacy Training: To provide the skills, knowledge, and confidence to HRC staff to embed sustainability into their job-roles, the HRC will expand upon its existing offering of Carbon Literacy Training offered by the Carbon Literacy Project to all its core team. Once accredited, staff will be asked to undertake a pledge to reduce their carbon footprint in the workplace, which will contribute towards the HRC's intention around the carbon impact of its operational delivery.

3.2 Master's Experience Projects: The HRC will work with colleagues in the university of Manchester to offer novel opportunities for education around sustainability challenges in the HealthTech sector by offering a limited number of projects such as literature reviews and data research. This will contribute to the overall work of the centre in understanding the challenges posed to by climate change to the HealthTech sector, whilst simultaneously contributing to the overall skills, experience, and knowledge of students in the field.

3.3 Training Resources for Researchers and Innovators: The HRC will work with partner organisations to provide training resources for researchers and innovators that it will make available online to improve their knowledge and confidence in sustainable innovation and helping to embed sustainability into the innovation pipeline.

3.4 Early Careers Research in Sustainability: The HRC will support early career researchers to access funding opportunities in sustainable research, and to incorporate sustainability into ongoing work, this will help build a community of researchers and innovators with interest and experience in sustainable healthcare research.

Aim 4 – Sustainable Research: Integrate sustainability into our research priorities, expanding our sustainable research portfolio, and ensuring healthcare innovations reduce resource intensiveness and support a net-zero future.

The delivery of high-quality research is essential to our aim of decarbonising the health and care system, and will be imperative to the NHS if it is to meet its aims of achieving net-zero emissions. Therefore, we will work to embed sustainability into our research, so that the HRC can help explore innovative ways to decarbonise care pathways while simultaneously delivering benefits to patients and staff.

We will work to expand our portfolio of sustainability related research as we seek to integrate sustainability into evidence generation for novel technologies. Furthermore, we will seek to quantify the impact of more technologies on the environment.

Objectives

4.1 Scoping: The HRC will look to embed sustainability into the way that it actively scopes for novel innovations, ensuring that the centre is well-placed to find sustainable and innovative solutions to meet future challenges.

4.2 Care Pathway Analysis: To maximise our potential to reduce the carbon intensity of care pathways, the HRC will undertake a process to identify the highest intensity care pathways relevant to its scope, and identify particular ‘black-spots’ within these pathways where new technologies have the potential to have the most impact on the carbon footprint of care.

4.3 Promotion of Sustainability Related Research Funding: The HRC will actively horizon-scan to identify new funding opportunities related to sustainable device development and care pathway decarbonisation with the aim of identifying relevant technologies and researchers to advance to application stage and eventual funded research.

4.5 Embed Sustainability into Research Objectives: For research that falls outside of the scope of existing related funding opportunities, the HRC will seek to embed sustainability into research aims and objectives, where relevant and reasonably practicable. By capturing the potential co-benefits that innovative technologies have for the environment, alongside benefits to patients and the health and care system, there is potential to strengthen the value proposition of novel solutions.

4.6 Quantify the Carbon Impact of New Technologies: Where relevant and reasonably practicable, the HRC will seek to quantify the carbon impact of novel technologies as part of the evidence generation process, utilising the expertise of its methodology cluster to add to our understanding of new technologies and potentially strengthen their value proposition.

4.7 Expand our Portfolio of Digital Technology Research: The HRC will expand its portfolio of digital technology research to help facilitate the movement towards digitally enabled pathways where clinically appropriate. We will leverage technologies such as Wearables and Remote Monitoring to facilitate the movement of healthcare delivery to lower intensity carbon settings.

Cross-Cutting Themes

Across all of our activities relating to sustainability, we will embed our cross-cutting themes: patients and the public are at the centre of what we do, and we will ensure that they are at the centre of our approach to sustainability and the issues that we aim to address together. Likewise, the HRC is committed to tackling health inequalities and embracing Inclusive Research practices to ensure that solutions meet the needs of our diverse populations.

Inclusive Research

Existing evidence shows that climate change disproportionately affects the most vulnerable in our society. The HRC is committed to tackling health inequalities, including those augmented by climate change. The HRC will work to further understand the risks posed by climate change to vulnerable populations and then work to engage these same populations in the co-development of solutions.

5.1 Identifying Vulnerable Populations: The HRC will undertake work to actively identify which populations are most likely to be affected by climate change and extrapolate what challenges this may pose for the health and care system, and for tackling health inequalities in the future.

5.2 Engaging Vulnerable Populations in our Approach to Sustainability: Following identification of populations most vulnerable to the effects of climate change, the HRC will then work to actively engage these populations through our patient involvement networks. Alongside our approach to PPIE, we will work to actively engage disadvantaged communities into our future sustainability related research, to ensure our solutions are suitable for the populations they are designed to serve.

Patient & Public Involvement and Engagement (PPIE)

We will embed PPIE throughout the work outlined in our sustainability strategy: we seek to inform patients about the relationship between climate and their health, and empower them to be involved in our decision making, and how we best use the HRC to address these challenges.

6.1 Understanding Patient Perceptions of Climate and Health: The HRC will run a workshop to understand patient and public perceptions of climate and health, including how this impacts them, their priorities, and priorities for our action. We will use the outputs from this work and continue to engage this patient group as we work to formulate an education and engagement programme for patients.

6.2 Education and Engagement with Patients Around Climate and Health: Using our preliminary findings on public perceptions of climate and health, we will work with patient groups to co-develop an engagement programme for sustainability where we will seek to inform patients of the link between the climate and their health, the risks posed to the health system by climate change, and some of the changes needed.

6.3 Co-creation of Climate Priorities: Following our engagement programme, we seek to involve our patient group in centre activity and the co-creation of resources that would help improve our understanding of patient priorities when it comes to climate related health challenges. This includes the types of devices patients would like to see, and how they would like a sustainable health service to look, and how they would like the HRC to work with industry to address these issues. We will use these relationships and resources to inform our process embedding sustainability into technology prioritisation.

We will look to engage with people representing populations disproportionately affected by climate change, in line with the Inclusive Research approach above.

Budget

There is no designated budget for the delivery of this strategy. Therefore, delivery of many of the objectives will be overseen by the HRC core-team: the HRC core-team are funded by the NIHR and already have an interest in overseeing the delivery of objectives overlapping with NIHR organisational strategies, and likewise MFT and R&I local strategies that have objectives relating to sustainability. We will seek to fund delivery of objectives relating to research delivery and technology co-development through the obtainment of collaborative research grants which specify such objectives, or through leveraging industry funding where appropriate.

Impact

We will measure the impact of our sustainability strategy through the contemporaneous development and monitoring of an action plan which will specify task level actions for each objective. Where necessary, objectives will be modified and adapted to meet the demands and capacity of the HRC. Other measurements we will use as Key Performance Indicators will include:

- Number of industry, NHS, and research colleagues who have attended relevant training.
- Journal publications, conference presentations, abstracts and seminars produced using the outputs of HRC research relating to sustainability.
- Resources including training and educational resources developed as a result of this strategy
- Applications for sustainability related funding opportunities.
- Uptake of further research with sustainability related objectives.
- New collaborations with industry or others as a result of the training.
- opportunity or interaction with the HRC with sustainability as an objective
- Accessing the training resources and materials relating to sustainability.
- Impact assessment scores demonstrating an improvement in the sustainability impact of our research delivery.
- Feedback from public and patient participants and partners

Collaboration

We work closely with other NIHR infrastructure in Manchester including [Manchester Biomedical Research Centre](#), [GM Patient Safety Research Collaboration](#), [Applied Research Collaboration GM](#), [School for Primary Care Research](#) and other infrastructure to support national and local opportunities. We will link with sustainability experts from other HRCs to identify and deliver collaboration opportunities through the HRC network. With our core HRC team, we will work with industry partners, patients, and the public to identify and deliver relevant sustainability research opportunities.