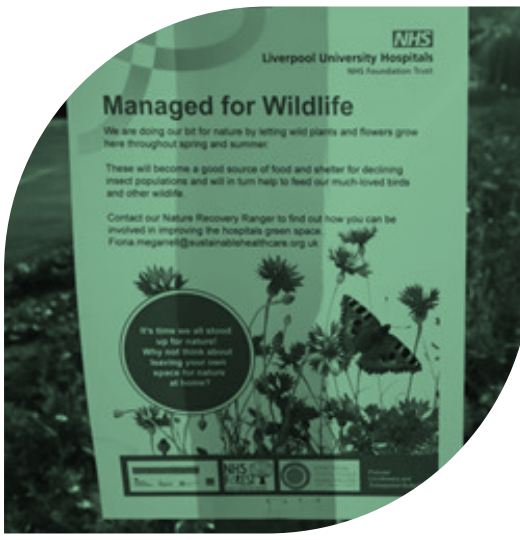
NHS
Cheshire and Merseyside

Green Plan

2025-2028



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Foreword

In March 2022, the first Cheshire and Merseyside system Green Plan was published, mere months before the establishment of the new integrated care system (ICS). The Plan reflected the Green Plans of NHS trusts, local authorities and partners from across Cheshire and Merseyside and commented on system-wide priorities and co-ordination. It also laid out the strategic path, directing discussions across the system and detailing specific steps to lower carbon emissions, increase environmental awareness, and eliminate unnecessary duplication.

Our Green Plan has been refreshed for 2025-2028, and we remain absolutely committed to ending our contribution to climate change by 2040 in line with the national ambitions of NHS England. As an organisation, we are committed to working individually as well as at Place and System level. Since the adoption of the first iteration of our Green Plan we have actively engaged with partner organisations to establish system priorities and have been working towards delivering them. This exemplifies the collaborative efforts of Cheshire and Merseyside ICS in mitigating our carbon footprint, reducing health inequalities, and enhancing social value.

From reducing single-use plastics to implementing energy-efficient systems, every step we take is designed to minimise our environmental impact. But our commitment goes beyond just environmental sustainability - we also create social value by partnering with local organisations and supporting initiatives that benefit the community. As an anchor institution, we have a unique opportunity to effect positive change. By leveraging our resources, expertise, and influence, we can drive economic development, promote social equity, and improve overall wellbeing. This approach recognises climate change as the most significant health and human rights issue facing us today, and the transition to net zero as an opportunity to tackle inequalities and the wider determinants of health. It is an approach that is fundamentally important to the future survival of the NHS, the population, and the planet.

We invite all our stakeholders - from employees, to patients, to partners - to join us in this important journey.

Raj Jain
Chair

Graham Urwin
Chief Executive

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AD Partnerships & Sustainability

Introduction

The NHS produces approximately 4-5% of the UK's greenhouse gas emissions, 40% of UK public sector emissions, and on a global level, healthcare generates so much carbon dioxide equivalent (CO_2e) that if it were a country, it would be the world's fifth biggest polluter.

Climate change is the greatest health threat facing the world, but it also offers the greatest opportunity for us to redefine the social and environmental determinants of health in order to provide sustainable health services across Cheshire and Merseyside and to deliver the ambitions as set out in Delivering a Net Zero National Health Service, namely:

- *For the emissions we control directly (the NHS Carbon Footprint), net zero by 2040, with an ambition to reach an 80% reduction (from 1990 levels) by 2028 to 2032.*
- *For the emissions we can influence (our NHS Carbon Footprint Plus), net zero by 2045, with an ambition to reach an 80% reduction (from 1990 levels) by 2036 to 2039.*

Cheshire and Merseyside is home to 2.7 million people across nine 'Places' which are coterminous with individual local authority boundaries: Cheshire East, Cheshire West, Halton, Knowsley, Liverpool, St Helens, Sefton, Warrington, and Wirral.

Demand for health and care services is very high and growing and our services are not sustainable without a different approach in how we work together, and a shift in focus away from the treatment of illness to one of prevention and wellbeing.

This Plan outlines our commitment to deliver sustainable and high-quality services and highlights how we work with our partners to positively impact the wider determinants of health to address health inequalities and to embed social value.

United Nations Sustainable Development Goals

The UN Sustainable Development Goals are a universal call to action to end poverty, protect the planet, and improve the lives and prospects of everyone everywhere. The 17 Goals were adopted by all UN Member States in 2015, with the intention of achieving the Goals by 2030.

Our Green Plan, Social Value Charter and Anchor Framework are aligned to the Goals, and we will continue to work with our partners to encompass them at the heart of our work.

1. System Leadership and Workforce Development

Systems Leadership is about leading across boundaries, addressing complex, challenging, and seemingly unsolvable problems, managing multiple uncertainties, acknowledging that no single person or organisation can solve these issues alone, and understanding that the best way forward is to leverage as many people's skills, ideas, talents, and knowledge as possible. The ICB is passionate about delivering real change and working at scale with and across other public and third sector organisations and partners in order to enable faster adoption of innovation to address the social challenges of ill health and to deliver our net zero promises.

Through working closely with local communities, local authorities, and other public bodies, third sector organisations and our suppliers we will achieve the ambitions as set out in this Green Plan. Working at scale gives greater potential to deliver jointly for a bigger transformational impact and working with place-based partners gives us the potential to develop innovative initiatives such as district heat networks.

1.1 Workforce development

The ICB has long been promoting sustainability within its workforce and will continue its efforts to make "green thinking" a fundamental aspect of the organisation's culture. Whilst *"Becoming a Net Zero NHS"* is now a mandatory training requirement and there are sustainability clauses within all role descriptions, there is still much to do.

Engaging further with our workforce is critical to the success of enacting the Green Plan, and ongoing key components of sustainability literacy for ICB employees will include:

- **Knowledge of environmental issues:** Understanding current environmental challenges, and knowing their causes, effects, and potential solutions.
- **Critical thinking and problem solving:** Encouraging individuals to think critically about the impact of their choices and actions.
- **Systemic thinking:** Recognising the interconnectedness of social, economic, and environmental systems.
- **Ethical considerations:** Committing to ethical practices that respect people and the planet.
- **Action-oriented mindset:** Advocating for sustainable practices and implementing them in daily life.

Goal	Measurement	Delivery
1. Create Green Plan intranet pages for staff access and external webpages for other stakeholders, upload Green Plan content and progress updates accordingly.	ICB website has a Sustainability section. Staff intranet area to be created.	Delivered 2022 2025
2. Incorporate sustainability clause into all ICB job descriptions/ role requirements.	*Delivered - 2022.*	2022
3. Incorporating a sustainability element into all staff appraisals.	Staff appraisal documentation amendments.	2025

4. Introduce a mandatory sustainability/ climate change training module for all staff from April 2023.	*Delivered* - Building a Net Zero NHS *part of ICB mandatory training.*	2023
5. Promote sustainability practices in the workplace via staff engagement sessions, communications, and updates.	Staff engagement in sustainability activity.	2025 ⇒

These ambitions and priorities support eleven of the Sustainable Development Goals:

2. Sustainable Models of Care

As we face the consequences of climate change and environmental degradation, it is crucial to re-evaluate our approach to healthcare delivery. Sustainable healthcare models prioritise the health of individuals, communities, and the planet. By integrating principles of environmental stewardship, social equity, and economic viability, these models aim to create a more resilient and efficient healthcare system. Sustainable models of healthcare are inherently embedded throughout our Green Plan.

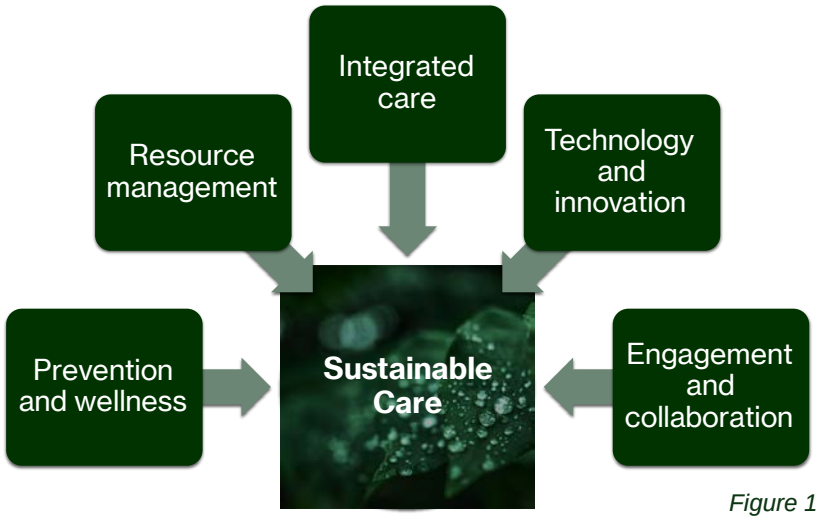


Figure 1 – components of sustainable healthcare.

Prevention and wellness: Preventive care lessens the burden of chronic diseases and enhances overall public health. Implementing prevention/ early intervention strategies, reduces the need for costly treatments and hospital admissions, leading to better patient outcomes.

Resource management: Minimising waste and enhancing efficiency reduces costs and greenhouse gas emissions. Traditional healthcare models have a significant negative impact on the environment. Sustainable models mitigate these effects through practices such as recycling, energy conservation, and the use of certified sustainable products.

Integrated care: involves co-ordinating services across different providers to ensure seamless care for patients. By breaking down organisational silos, the NHS and partners can improve care co-ordination, reduce duplication of services, and provide more holistic care to communities.

Technology and innovation: Digital health solutions such as telemedicine, remote monitoring, and electronic health records can improve access to care, enhance communication between healthcare providers, increase efficiency, reduce costs, and empower patients to take control of their health.

Did you know?

The Earth is 4.6 billion years old; let's scale that to 46 years. Humans arrive 4 hours ago. Our Industrial Revolution began 1 minute ago. In that time, we have destroyed over 50% of the world's forests. We will finish off fossil fuels in the next 15 seconds.

Engagement and collaboration: Involving local communities in decision-making ensures that services are tailored to meet their specific needs and preferences, and fosters a sense of ownership and accountability, leading to better health and wellbeing. Collaboration also helps in the efficient allocation of resources and development of innovative solutions to address healthcare challenges.

3. Climate Adaptation

The importance of climate adaptation work cannot be overstated. In the face of ever-evolving climate threats the healthcare system must be ready to tackle extreme weather events, shifts in disease patterns, and their impact on vulnerable populations. Without developing robust adaptation strategies, the NHS cannot sustain effective healthcare services. The threats are multifaceted and are already impacting demand for services, staffing, supply chain, travel and transport, digital systems, and physical infrastructure.

Climate adaptation involves adapting to the current and future effects of climate change in order to reduce vulnerability and build resilience to its impacts. It involves implementing strategies and measures to protect communities, ecosystems, economies, and infrastructure from the negative effects of global warming. Unlike mitigation, which focuses on reducing greenhouse gas emissions to prevent further climate change, adaptation acknowledges that some level of climate change is already inevitable and irreversible. As a result, it is crucial to embrace the new realities brought about by a changing climate; we are living in a climate emergency [Figure 2] – it is not a looming threat in an imagined distant future.

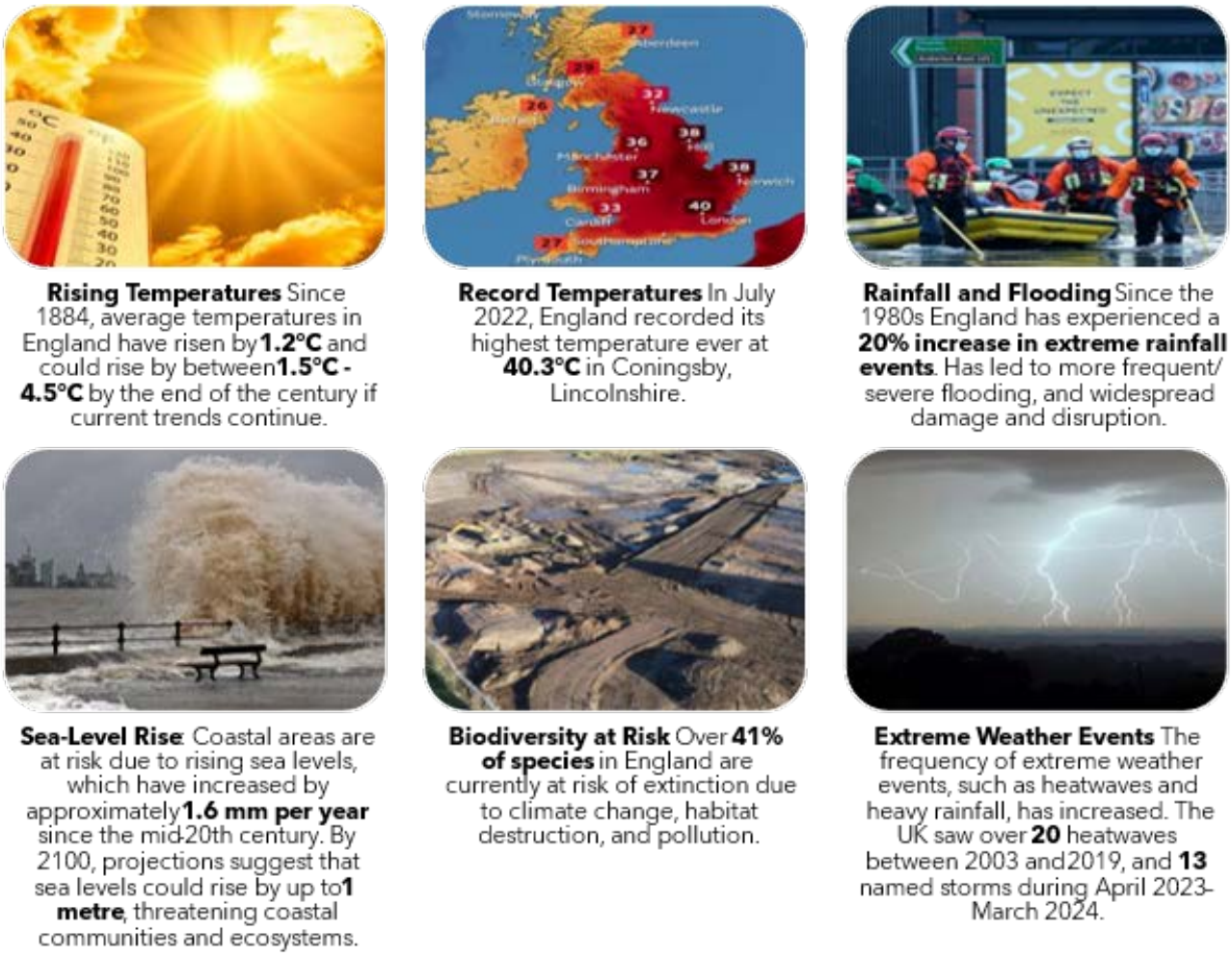


Figure 2 - Climate change in the UK

3.1 Why adaptation needs to be a raised priority in Cheshire and Merseyside

Climate change exacerbates existing health conditions and introduces new risks to populations worldwide. Rising temperatures lead to heat-related illnesses, worsen air quality and increase the prevalence of vector-borne diseases. Extreme weather events cause physical injuries, displacement, and mental health issues. Changes in precipitation patterns impact water quality and food security, leading to malnutrition and waterborne illnesses. The impact on the delivery of health and care services in Cheshire and Merseyside will see:

- Risks to primary care and hospital estate, supply chains, transport, and public health.
- Increased pressure on the system caused by heatwaves, pests, diseases, heat exposure and extreme weather events.
- Widening of health inequalities as vulnerable people and places are disproportionately affected by climate change.

The summer of 2022 was a serious heat event where temperatures in the UK reached over 40°C (104°F) for the first time. The Met Office and UK Government issued the first ever Level 4 (red) heat health alert[1], and there were over 3,000 excess deaths in England, particularly in the over 65's.

The impact on the NHS in Cheshire and Merseyside included the widespread use of mobile air conditioning units to keep wards, MRI scanners, IT servers, and medicines fridges cool; increased A&E admissions for respiratory problems and impacts of dehydration; delays to patients requiring planned operations, and issues with ageing NHS buildings not designed to cope with high temperatures.

3.2 Climate projections and key risks

The UK has already seen an increase in extreme weather events such as storms, heatwaves, and floods which are likely to become more common as the climate continues to warm. These events cause widespread damage to infrastructure, homes, and ecosystems. Climate change projections for the UK point to increased temperatures, more frequent extreme weather events, and rising sea levels. These changes are expected to impact agriculture, health and care, infrastructure, and coastal areas in particular.

Flooding and drought

Climate change will affect the amount and timing of rainfall and will also impact the demand for water and its quality, as well as the way land is used – all of which will put pressure on water resources. Summers are likely to get hotter and drier, significantly increasing demand for water, and winters are likely to get warmer and wetter.

[1] Level 4 is reached when a heatwave is so severe and/or prolonged that its effects extend outside health and social care, and/or where the integrity of health and social care systems is threatened. At this level, illness and death may occur among the fit and healthy, and not just in high-risk groups and will require a multi-sector response at national and regional levels.

Treatment plants, pumping stations and sewers may no longer be adequate to cope with the changes in climate, and some infrastructure, critical for providing water supplies, will be more vulnerable to flooding.

- Risks to people, communities, and buildings
- Risks to water quality / household water supply
- Reduced water for cleaning, sanitation and personal hygiene leading to increased incidences of waterborne diseases such as diarrhoea and gastroenteritis
- Respiratory difficulties caused by particulate matter that would normally be washed away by rain

Figure 3 - Map showing parts of Cheshire and Merseyside projected to be below the annual flood level by 2030. (Image: Climate Central.)

Currently 10% of UK hospitals are located in areas of significant flood risk, with a further 495 emergency services, 2,474 GP practices and 2,187 care homes at risk in England. Under all global warming scenarios, these numbers are expected to increase.

Research published in 2023 also revealed that for up to two years post flooding the prevalence of depression, anxiety, and post-traumatic stress disorder (PTSD) remained elevated for those impacted. The ICS can therefore expect to see increased demand on mental health services in coming years, potentially exacerbated by reduced access to services also impacted by flooded infrastructure.

Vector-borne diseases

Transmitted by vectors such as mosquitos, ticks, and sandflies, each year VBDs cause more than one million fatalities in humans, with populations in the tropics and subtropics being most at risk. However global warming, changes in land use, and worldwide travel and trade are facilitating the conditions in which vectors can spread and thrive across the globe. Indeed, the WHO now estimates that 80% of people on the planet are affected.

In April 2023, UK Research and Innovation (UKRI) and the Department for Environment, Food and Rural Affairs (DEFRA) announced a £7.5m funding package for vector research. Shortly following the funding announcement, the UKHSA published a report describing how chikungunya, dengue, and Zika viruses could become transmissible in southern parts of the UK as early as 2040, spread by the invasive Aedes albopictus (Asian tiger mosquito) and native Culex mosquito species.

Did you know?

From the 15thC, malaria, or 'fen ague', was widespread in the coastal and marshy areas of south-east England, the Fenlands, and northern England. The last indigenous case of malaria in England was in the early 1950's.

The UK is home to around thirty-six indigenous mosquito species, a number of which are able to act as vectors. It is currently too cold in the UK for significant transmission of disease, but cases of Zika, dengue, and chikungunya have occurred in France and Italy. Furthermore, outbreaks of malaria, not seen in the UK since the 1940's, could emerge once more as sustainable wetlands are re-established.

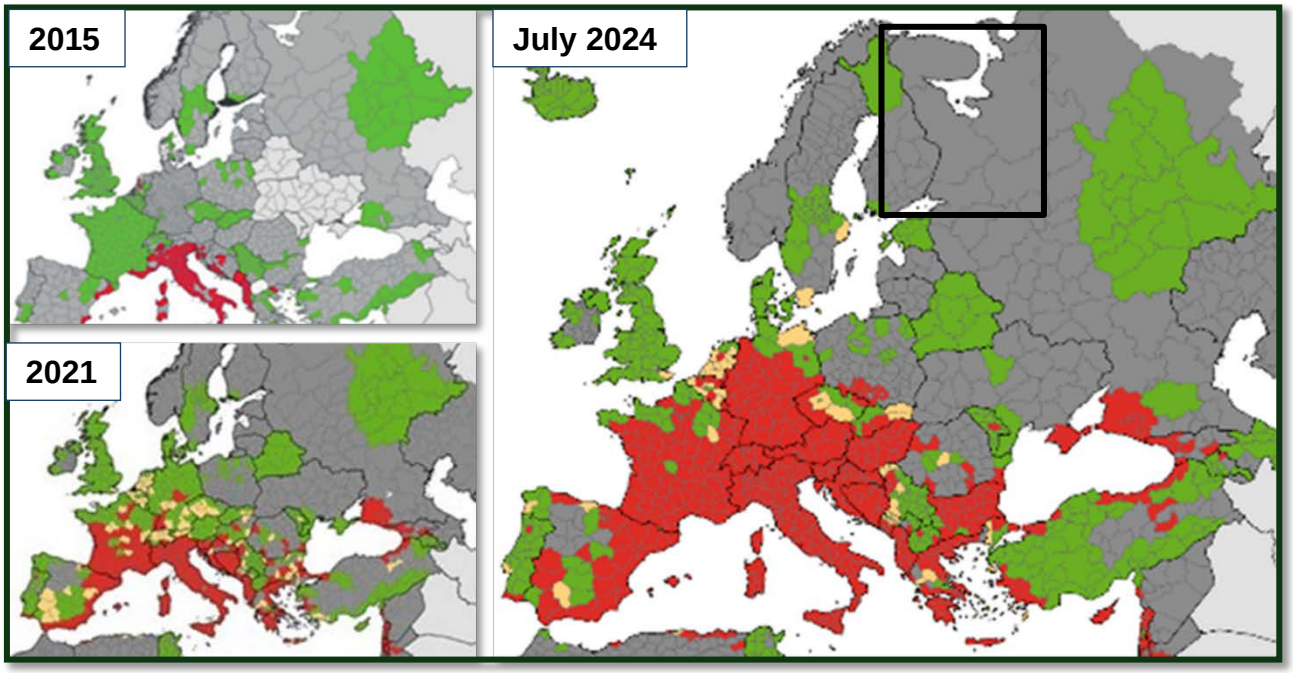


Figure 4 - Known distribution of Aedes albopictus in Europe at 'regional' administrative level, 2015, 2021 and status as of July 2024. Source: European Centre for Disease Prevention and Control and European Food Safety Authority.

Three main diseases are spread by ticks in the UK: Lyme borreliosis (bacterial), tick-borne encephalitis (viral), and Crimean-Congo haemorrhagic fever (viral).

The native sheep tick is a Lyme disease and tick-borne encephalitis vector. Lyme disease is on the rise, attributable to both climate change and the proliferation of deer populations. (Interestingly, there are now more deer in the country than at any point since Roman times.) Consequently, as temperatures warm, we can anticipate an escalation in the ticks' capacity to transmit diseases.

Tick-borne encephalitis (TBE), vectors started to emerge in the south of England around 2018/19. Ongoing studies are currently mapping the potential spread; however, it is relatively rare with only four cases reported since 2019. Whilst it is a vaccine-preventable disease, the current threat level does not warrant rolling out a nationwide vaccination programme.

Crimean-Congo haemorrhagic fever (CCHF) is transmitted by a non-native tick. Currently the risk is low in the UK, however the tick could establish itself in the UK as the climate warms.

Heatwaves and high temperatures

The UK is experiencing more frequent, longer and severe heat events; indeed, the ten hottest years since 1884 have all occurred since 2003. Such events include heatwaves, which the Met Office define as periods of at least three consecutive days in which a temperature threshold is met or exceeded, and heat periods, which the UKHSA define as at least one day with an amber heat-health alert in at least one region and/ or the mean Central England Temperature being at least 20°C (68°F).

The impact of heat on health varies across the population, with vulnerability factors including advanced age, physical and mental health conditions, pregnancy, and environmental factors. Heat can impact health and cause excess mortality for vulnerable populations. Injuries, cardiovascular-related diagnoses, mental health problems, and

dehydration are the main contributors to people being hospitalised during these events. Heatstroke is the most severe form of heat illness.

3.3 Adaptation strategies and measures

For the NHS, adapting to climate change involves more than just emergency planning, it requires a focus on long-term sustainability measures including resource management, community engagement, and infrastructure development. The tendency of health organisations to react to major disruptions caused by climate change rather than planning and implementing continuous proactive changes that enhance the ability to withstand both present and future climate change impacts has to be addressed. Further barriers include financial constraints and uncertainty, the prioritisation of efficiency measures, weak government policy, and lack of knowledge around climate adaptation and mitigation.

The following list of policy drivers indicate the breadth and scope of the work; with responsibilities superficially placed in different areas of organisations. The inherent risk of different teams operating in isolation and failing to communicate effectively could lead to duplicated efforts, missed opportunities, and a lack of co-ordination.

Successful adaptation strategies require the breaking down of silos and a culture of collaboration to ensure everyone is working towards a common goal and are aligned in their approach. This section outlines adaptation progress made to date, and a roadmap for future action following a successful adaptation pilot project which concluded during the summer of 2024.

Climate adaptation policy drivers

Policy / Strategy	Directive
NHS Third Health and Care Adaptation Report	• ICS' are required to build long-term adaptation planning into Green Plans by 2025.
Health and Care Act 2022	• NHS trusts are required to adapt to any current or predicted impacts of climate change identified within the 2008 Climate Change Act.
NHS Standard Contract Conditions 2024/2025	• NHS trusts are required to deliver decarbonisation and adaptation.
EPRR Core Standards Revision 2023	• Adverse weather arrangements should be reflective of climate change risk assessments and cognisant of extreme events.
10 Year Infrastructure Strategy	• ICS' should be able to develop a sense of the infrastructure investment and action priorities needed to reduce identified [climate change] risks.
Estates Net Zero Carbon Delivery Plan	• Climate change adaptation planning must be considered as part of a business continuity policy statement and the business continuity management system in line with ISO 22301.
TCDF-aligned disclosure	• Climate-related financial disclosure reporting requirements adapted for the public sector, applied to the NHS from 2023/ 2024.
NHS Net Zero Building Standard	• This outlines requirements for the construction of new buildings or major refurbishments and includes some adaptation.

Strategic Case for Green Investment	• Greener NHS includes the case for adaptation in the 'Energy' section of the Strategic Case for Green Investment.
Care Quality Commission Single Assessment Framework	• The environmental sustainability quality statement looks at any negative impact of activities on the environment. The safe environments statement covers environmental risks and climate adaptation.

Adaptation progress

In terms of delivering Green Plans and achieving Net Zero, NHS England set four nationally mandated priorities (estates and facilities; medicines; supply chain, and travel and transport). NHS regions were then required to choose a fifth priority – the north west region ICBs have collectively chosen adaptation since 2022 (as has the north east). The following table summarises annual adaptation progress across the Cheshire and Merseyside system and with regional colleagues in the North West and North East.

2022	2023	2024
ICS Green Plan objective to have climate adaptation plans in place by 2023. NHSE asks NW and NE regions to trial a climate change risk assessment tool (CCRA). Adaptation planning paused whilst 5 C&M trusts and the ICB trial the CCRA from November 2022, (together with trusts from the other ICS' in the NW and NE). CCRA intended to form adaptation strategy and planning templates.	February: NW and NE regions deliver final CCRA tool feedback to NHSE. Tool requires significant work prior to roll-out. August: Greener NHS advise CCRA is being updated. V2 will have improved usability (resolving technical glitches), auto-complete elements and enhanced guidance / functionality for applying consequence scores. NHSE underwent staff reorganisation and CCRA work paused.	NW/NE Greener NHS commissioned Sniffer and Sustainability West Midlands to deliver a pilot project to build capacity to respond to climate change. The project included: • Capacity building and skills training. • Developing new tools and resources. • Adaptation leadership and innovation, and opportunities for peer learning. • Informing next steps for adaptation leadership.

Following the conclusion of the 2024 pilot, a suite of resources, including an Adaptation Framework, was produced. The expectation is that ICS providers, together with the ICB, will utilise this resource for climate adaptation planning.

3.4 Cheshire and Merseyside adaptation priorities

Goal	Measurement	Delivery
1. Set up a Climate Adaptation Committee to drive forward climate adaptation planning and actions across the NHS, including utilisation of the new NHS Adaptation Framework and the *Adapt to Survive* toolkit. Group requires representation from: Sustainability; Estates; Digital; EPRR; Finance; Public Health; VCFSE, local authorities, primary care and Trusts.	Reporting to the Sustainability Board.	Commencing January 2025 ⇒
2. Via the subgroup, facilitate partnerships and/or funding to take forward projects and research innovative approaches to adaptation financing.	Reporting to the Sustainability Board.	January 2025 ⇒
3. Ensure climate risks are embedded into corporate risk assessments.		2025
4. Undertake data analysis exercises to assess the 'numbers behind future climate change'. Look at the impact on various metrics (excess deaths, buildings at risk, impact of heatwaves, economic losses etc.) that climate change may have if nothing were done (business as usual), versus effective adaptation.		Commencing January 2025 ⇒
5. Embed climate adaptation into any natural environment / capital working groups.		2025
6. Prioritise measures such as improved drainage (SUDS), green infrastructure integration, cooling stations (water fountains / shaded benches).		Ongoing
7. Initiate water saving programmes and raise awareness of simple cost-effective measures that organisations and employees can take to reduce water usage. Establish consistent messaging and collaborate with United Utilities.		Ongoing
8. Undertake research into the extent to which digital infrastructure, telecoms and ICT is considering future climate change projections.		Commenced August 2024
9. Assess all hospitals and other health centres that support vulnerable people to identify which are most at risk of overheating and identify suitable measures to reduce the risk, such as implementing green infrastructure, better ventilation etc.		By March 2026
10. Work with all relevant partners to ensure that climate risks are addressed and considered in the commissioning and provision of all health and care services and assets.		December 2024 ⇒
11. Ensure climate risks to health, buildings and infrastructure that affect hospitals, care homes, GPs and other health settings are embedded into corporate risk / business continuity plans.		December 2024 ⇒

12. Monitor changes in vector-borne diseases as a result of climate change to provide more accurate advice on where and when the likely hotspots in the region will be, and what to do if affected.	Linked to UKHSA monitoring.	Ongoing

These ambitions and priorities support fifteen of the Sustainable Development Goals:

4. Air Quality

Poor air quality is a silent threat that can have serious consequences on our wellbeing. According to the World Health Organization (WHO), environmental risks cause 12% of the global burden of disease, and the figure is rising. Of these risks air pollution poses the greatest threat to health, causing an estimated 38,000-42,000 deaths annually in the UK and over 7 million globally.

Over 99% of the global population breathe air that exceeds WHO guideline limits, and costs to the NHS and social care due to direct damage to health from air pollution are expected to rise from a reported £42.88 million in 2017 to over £5.3 billion by 2035. (Public Health England, 2018).

Air quality refers to the level of pollutants present in the air we breathe. These pollutants come from a variety of sources including vehicle emissions, domestic coal and wood burning, industrial activity, and natural sources like wildfires. Poor air quality can lead to a range of health problems (Figure 5), from respiratory infections to more serious conditions like asthma and lung cancer. An overview of the health evidence is available in the Chief Medical Officer's report on air pollution published in 2022.

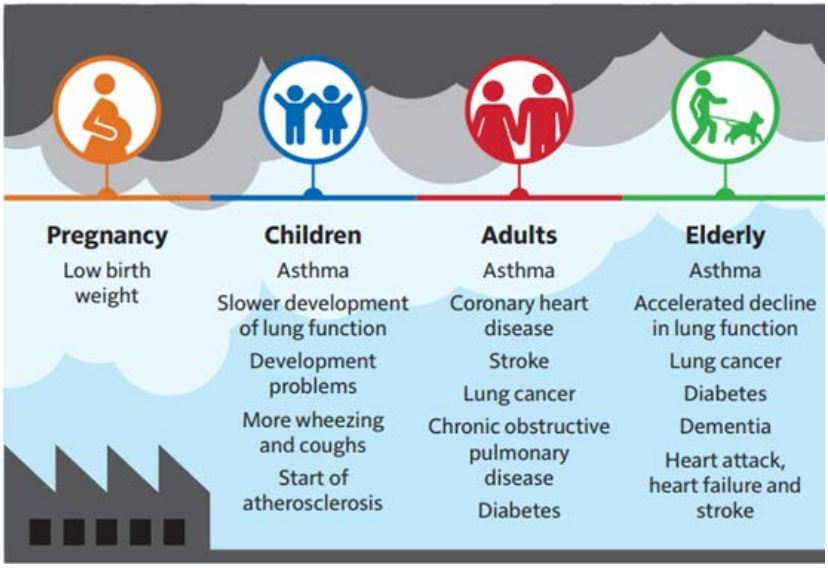


Figure 5 - Health effects of air pollution throughout life. Chief Medical Officer's annual report 2022.

4.1 Emissions to solutions: how we are tackling poor air quality

Air quality is a health inequalities issue as certain groups are disproportionally impacted by air pollution. Pregnant people, children and older adults are the most vulnerable, and poorer communities are more impacted due to where they live (intersecting with other equalities characteristics such as ethnicity).

Working closely with partners and key stakeholders, including local authorities, the ICB's approach to addressing air quality is rooted in collaboration. The Sustainability Board's Air Quality sub-group has defined priorities within the system, including endorsing an NHS stance on air quality and health to drive action; involving top-level leaders in air quality discussions; connecting on initiatives related to both indoor and outdoor (ambient) air pollution; and exchanging effective strategies.

The ICB hosted a clinician from the Chief Sustainability Officer's Clinical Fellows scheme during 2023-2024, and they worked throughout the ICS to formulate an air quality strategy and action plan aimed at reducing greenhouse gas emissions and mitigating the adverse effects of both indoor and outdoor air pollution. The resulting key action areas are highlighted in the following infographic [Figure 6].

Figure 6 - Air quality framework recommendations.

4.2 Indoor and outdoor air quality

Indoor air quality

Broadly, there are three main sources of indoor air pollution – particulate matter (PM), gases, and volatile organic compounds (VOCs).

PM

Particulate matter are microscopic particles which can penetrate deep into the lungs causing respiratory issues and exacerbating conditions such as asthma and bronchitis. Long term health effects include a higher risk of cancer and cognitive decline. Due to the size of $PM_{2.5}$ and $PM_{0.1}$, the particles can cross from the lungs into the bloodstream enabling them to be carried around the body causing damage to other organs.

The UKHSA has estimated that between 2017 and 2035 in England, 1,327,424 new cases of disease would be attributable to $PM_{2.5}$, with the highest numbers of these predicted to be from coronary heart disease, diabetes and chronic obstructive pulmonary disease (COPD).

Gases

Radon, a colourless and odourless gas, is naturally present in soil and can seep into homes through cracks in the foundations. Long term exposure increases the risk of lung cancer.

Carbon monoxide is produced by the incomplete combustion of fuels such as gas, oil, and wood. Prolonged exposure can lead to headaches, dizziness, and death.

Carbon dioxide is a natural component of the air we breathe out, but excess levels of CO_2 indoors can cause drowsiness, headaches, and impaired cognitive function.

Sulphur dioxide, ozone, and nitrogen oxides: these gases are produced by combustion, such as burning fossil fuels or using certain household products. They can irritate the respiratory system, exacerbate existing health conditions like asthma, and contribute to the formation of smog and acid rain.

VOCs

Volatile organic compounds (VOCs) are a group of chemicals emitted as gases from products such as paints, air fresheners, cleaning solutions, nail varnish, scented candles and deodorants. They have been linked to nausea, fatigue and headaches; some are also carcinogenic.

Outdoor (ambient) air quality

Outdoor air pollution is primarily caused by the release of harmful gases and particulate matter into the atmosphere from various sources including vehicles, industrial activity, and burning fossil fuels. Apart from its impact on human health, outdoor air pollution can lead to acid rain, smog formation, and damage to ecosystems.

DEFRA notes some changes in trends around sources over the last decade. Those most relevant to the healthcare system are:

- Cleaner energy is driving a reduction in sulphur dioxide and nitrogen oxides.
- Stricter standards for emissions of petrol and diesel vehicles is driving down nitrogen oxide and non-methane volatile organic compounds (NMVOC) emissions. However, transport is still a major source of nitrogen oxides and NMVOCs have a range of sources including cleaning products (which contribute towards indoor air pollution) and emissions from the food and beverages industry.
- The pattern of sources of emission of particulate matter has changed; emissions from road transport and energy industries have decreased whilst domestic burning, industrial combustion of biomass based fuels and construction emissions have increased. Particulate matter emissions from road wear, brake wear and tyre wear (non-exhaust sources) are making up an increasing proportion of road transport emissions.

The advantages of having cleaner air go beyond just environmental preservation. Better air quality results in healthier communities, reduced healthcare costs, and an improved quality of life for the people living in Cheshire and Merseyside.

By focusing on air quality projects, the ICB is not only protecting the environment but also investing in the health and wellbeing of present and future generations.

Goal	Measurement	Delivery
1. Agreeing a local NHS position statement on AQ and health to use our trusted voice as health professionals to influence wider action.	Sign-off at: • Sustainability Board • Population Health Board	November 2024
2. Engaging our board level leads on AQ.		2024 ⇒
3. Joining up campaigns on indoor and outdoor air pollution with local authorities and VCFSEs.	Extending membership of the air	2024 ⇒

	quality sub-group to wider stakeholders, joining the Liverpool City Region and Cheshire Air Quality Group (AQTECH)	
4. Exploring how to improve indoor air pollution.		Ongoing
5. Joining together to explore sources of funding.		2025 ⇒

These ambitions and priorities support nine of the Sustainable Development Goals:

5. Biodiversity and Nature Recovery

The destruction of habitats, deforestation, pollution, over-hunting, and aggressive consumption of resources have caused significant damage to planet Earth, resulting in an imbalance in the ecosystem. This imbalance has led to a loss of biodiversity and essential resources such as food, clean water, medicine, and shelter that are necessary for human survival.

For the UK this represents a decrease of approximately 50% in wildlife and plant species since the Industrial Revolution, with a study in 2023 showing the abundance of all UK species having declined by 19% since 1970. With only 14% of habitats for wildlife being found to be in a good ecological state, it remains a desperately sad fact that the UK consistently ranks in the bottom 10% globally and the worst among the G7 nations for retention of natural biodiversity.

It is imperative that we take action to protect our green and blue spaces and biodiversity in Cheshire and Merseyside with ambitious and bold initiatives that will benefit our local populations both in terms of social value and improved health outcomes.

5.1 Greening healthcare in Cheshire and Merseyside

Healthcare sites across Cheshire and Merseyside have already embarked on direct action to improve biodiversity in their green spaces including:

- Creating therapy gardens
- Cultivating food through allotments
- Supporting bees and other pollinators
- Encouraging wildlife with insect hotels, bat homes, and bird boxes.
- Creating ‘no mow’ zones on the estate
- Providing beautiful green and blue spaces for staff, patients, and visitors to take time out to sit and reflect.

Research has shown that green and blue spaces on health care sites:

- Help reduce stress and enable patients to summon inner healing resources.
- Help people come to terms with an incurable medical condition.
- Provide a setting where staff can conduct physical therapy and horticultural therapy with patients.
- Provide staff with a needed retreat from the stress of work.
- Provide a relaxed setting for patient/visitor interaction away from the hospital interior.

5.2 The power of biodiversity partnerships

Collaboration and partnership with organisations and communities enables us to combine resources and expertise to protect and restore natural habitats. These partnerships help in sharing knowledge, funding, and resources to address complex environmental challenges more effectively.

For the NHS and its partners, this also presents an opportunity to educate communities about the benefits of nature for health and encourage people to engage with green spaces.

Centre for Sustainable Healthcare and NHS Forest

The Centre for Sustainable Healthcare (CSH) runs the NHS Forest project as part of its Green Space for Health programme, helping sites to plan, plant and manage trees and woodlands to create habitats for wildlife and sustainable social spaces for people. Over 27,000 trees were planted in the 2023-2024 season, many of which were on NHS Forest sites in Cheshire and Merseyside.

In Spring 2021, the CSH introduced Nature Recovery Rangers into hospital sites in Bristol, Liverpool, and west London. The Rangers run projects to improve biodiversity while helping patients, staff, and community members to enjoy nature, alongside outreach work to involve new volunteers at the hospitals as well as enhancing green spaces.

The Mersey Forest

The Mersey Forest is a network of woodlands and green spaces across Cheshire and Merseyside which has been creating ‘woodlands on your doorstep’ for over 25 years. The Mersey Forest is partnered and supported by all 9 of the local authorities across the Cheshire and Merseyside region, testament to the excellent and valuable work that the organisation undertakes in helping combating climate change and habitat loss.

Through community and partnership working The Mersey Forest has:

- Planted over 9,041,039 trees - these trees have absorbed 524,574 tonnes of carbon dioxide
- Achieved three times more tree planting than the England average
- Created over 3,000 hectares of woodland, equivalent to 4,322 full-sized football pitches
- Worked with more than half the schools in Merseyside and north Cheshire
- Improved the environment - 65% of people surveyed said that they have noticed that their environment has improved because of The Mersey Forest’s work

Natural England

A representative from Natural England sits on the ICBs Sustainability Board and leads the Biodiversity and Nature Recovery sub-group. Partnering with Natural England allows us to tap into a wealth of expertise on how to maximise the health benefits of natural environments and supports our efforts to combat climate change. Natural England’s Green and Blue Infrastructure mapping tool will enable us to further our anchor institution work and enable more green and blue social prescribing opportunities. Numerous studies have shown the positive impact that spending time in nature can have on our health. From reducing stress levels and improving mood, to boosting physical fitness and enhancing cognitive function, the benefits are vast.

Nature-based social prescribing offers a holistic approach to health and wellbeing, addressing the root causes of illness rather than just treating the symptoms, and the NHS has an opportunity to facilitate green and blue social prescribing in the use of its estate, whether it be through establishing nature recovery volunteering programmes or outdoor gyms, these opportunities can enhance patient outcomes and also reduce the burden on traditional medical services.

Local authorities

The Environment Act (2021) requires responsible authorities in England to produce local nature recovery strategies (LNRS), which have to be in place by March 2025. Each strategy must contain a local habitat map and a written statement of biodiversity priorities, and there is an expectation for strategies to propose actions such as:

- Creation of wetlands
- Restoration of peatlands
- Planting of trees and hedgerows
- More sustainable management of existing woodlands and other habitats like grasslands.

There will be two LNRS' in Cheshire and Merseyside, the first is led by Cheshire West and Chester Council and includes Cheshire East Council, and Warrington Borough Council, and the second is led by the Liverpool City Region Combined Authority (LCRCA) and includes Halton, Knowsley, Liverpool, Sefton, St Helens, and Wirral Councils.

The ICB has engaged with local authority partners around their biodiversity strategies in terms of sharing public and stakeholder consultation opportunities and events and via liaison in Place based sustainability groups. The shared vision is one of alignment and mutual support with the ambition of achieving both local authority and NHS targets and helping to prioritise the preservation and enhancement of natural environments that directly contribute to the health of local populations.

The LCRCA has published a set of biodiversity priorities, and there are great opportunities for the NHS to support these, particularly in the urban and suburban areas, woodlands, grasslands, wetlands and watercourses, and species. Cheshire and Warrington's public engagement report has been issued, and the draft strategy will be published in November 2024.

There will be further opportunities in early 2025 for the NHS to contribute to the final LNRS strategies in helping to prioritise areas that require more urgent nature recovery efforts based on the health needs of local populations.

Goal	Measurement	Delivery
1. Finalise green space mapping on larger Trust sites. *(Weightings currently being allocated to datasets to allow identification of sites (15-20 across C&M expected) for habitat creation.)*	Centre for Sustainable Healthcare / ICB.	2024/25
2. Establish biodiversity net gain targets and habitat creation based on Trust mapping activity and aligned and in collaboration with LNRS priorities.	Ongoing reporting to Sustainability Board.	2025

3. Improve biodiversity through large-scale nature recovery projects in urban areas aligned with LNRS priorities.	Additional green space mapping data.	2025 ⇒
4. Prioritising the inclusion of green space and biodiversity in the design of all new buildings and refurbishments.	Ongoing estates and sustainability monitoring / reporting.	Ongoing
5. Mapping nature based social prescribing opportunities on NHS sites.	Place based reviews of green / blue social prescribing schemes.	2025/26

These ambitions and priorities support eight of the Sustainable Development Goals:

6. Digital Transformation

Cheshire and Merseyside ICS' Digital and Data strategy aims to modernise health and care delivery and planning through innovative digital and data solutions. By leveraging technology and data, the ICS will enhance patient care, streamline operations, and improve overall efficiency. This strategy, emphasises environmental sustainability, ensuring that digital initiatives are environmentally friendly and cost-effective in the long term.

The coronavirus pandemic proved to be the catalyst for NHS organisations to achieve truly remarkable digital transformation at an unprecedented pace and scale. The ICS' Digital and Data Strategy builds on that progress by focussing on ways to further harness digital infrastructure, systems and data to streamline service delivery and supporting functions, improve use of resources and reduce carbon emissions. The strategy is founded on the What Good Looks Like (WGLL) framework from NHS England's Transformation Directorate, which provides clear guidance for health and care leaders to digitise, connect and transform services safely and securely.

Annual digital maturity assessments (DMAs) are undertaken at ICB, primary care and NHS Provider level to gauge progress being made in relation to the seven WGLL success measures. Specifically for environmental sustainability, (which is part of the 'Smart Foundations' success measure), the DMA includes a review of progress towards net zero carbon emissions, environmental sustainability and resilience ambitions by meeting the Sustainable ICT and Digital Services Strategy (2020-2025) objectives.

To underpin the development of the ICS' Digital and Data Strategy, a Digital Green Plan was developed in conjunction with the Cheshire and Merseyside Chief Information Officer (CIO) Group. This plan linked to the Digital Inclusion plan, the Health Inequalities Action Plan and ongoing work with patient and public engagement. The Digital Green Plan has been reviewed and refreshed annually and progress has been made against the specific objectives agreed at the time, including:

- Implementation of electronic patient records in line with national digital maturity guidelines (reduces paper usage for communication and across back-office functions).
- Continued rollout of shared care records to reduce paper referrals and communications between organisations.
- Implementation of patient empowerment portals into acute hospitals giving patients access to their record and the ability to book and change appointments.
- Implementation of 'cloud first' large scale infrastructure developments including those supporting the system wide digital imaging programme (reduces power consumption at trust data centres).

The ICS is in the process of refreshing the Digital and Data Strategy for March 2025 onwards. It is expected that the vision and goals in the strategy will remain the same in the refresh, as will the underlying critical success factors (CSFs), of which 'Working towards Net Zero targets' is a fundamental condition for successful strategy delivery. In parallel, a refreshed Digital Green Plan will be developed, which will consider:

- Current position and future ambition for environmental sustainability at NHS Provider and ICB level as measured through the national digital maturity assessment exercise.

- Progress made against the previous strategy commitments for environmental sustainability, the current relevance of any remaining commitments and any new policy or strategy developments that have an environmental sustainability component.
- Any new or revised strategy commitments in the refreshed ICS Digital and Data Strategy, which have an environmental sustainability aspect to them.

The refreshed Digital Green Plan will use the circular economy / waste hierarchy principles to drive innovation and practical objectives in digital and data that support the overall drive towards net zero.

Goal	Measurement	Delivery
1. Implement Electronic Patient Records (EPRs) in line with NHSE guidelines to reduce paper usage.	Paper light.	March 2026
2. Reduce use of paper for non-direct care process within organisations across back-office functions using Robotic Process Automation and Generative AI.	Paper light.	March 2027
3. Expand the use of the Cheshire and Merseyside Shared Care Record system (both in terms of organisations connected and information available) to support reduction of paper based communications between health and care professionals.	Paper light.	March 2025
4. Complete rollout of Patient Empowerment Portals (PEPs) into all NHS providers and further support patients to access their health and care information through the NHS App to reduce paper referrals and other communications between organisations and patients.	Paper light.	March 2026
5. Further roll out of the C&M remote monitoring platform for management of various long term conditions and for more Places to manage higher numbers of ‘at risk’ patients at their usual place of residence, reducing patient and care professional travel time.	Reduced travel impact.	March 2025
6. Evaluate other digital platforms ‘at scale’ for potential widespread adoption across C&M that reduce travel impact for staff and patients.	Reduced travel impact.	October 2025

These ambitions and priorities support eight of the Sustainable Development Goals:

7. Estates and Facilities

Emissions relating to the estates and facilities services span both the NHS Carbon Footprint and the NHS Carbon Footprint Plus, accounting for over 60% of the NHS Carbon Footprint (mostly due to emissions from energy use) and a significant proportion of the Carbon Footprint Plus, through staff travel, construction, catering, plastics and capital spend, food and the wider £9 billion estates and facilities annual supply chain spend.

7.1 Understanding the NHS estate

The footprint of the health and social care estate across Cheshire and Merseyside is 1.7 million m^2, with one in four of our provider estate predating the NHS. According to recent reports, over £13.8 billion is needed to address the backlog maintenance across NHS facilities with the total in Cheshire and Merseyside estimated at around £715 million.

Backlog maintenance refers to the repairs and updates that have been deferred due to financial constraints or prioritisation of other projects, and our hospitals are struggling with outdated systems, including heating, ventilation, and electrical infrastructures that are not only inefficient but also detrimental to patient care, staff working conditions, and operational efficiency. Indeed 70% of our provider estate is below Condition B.

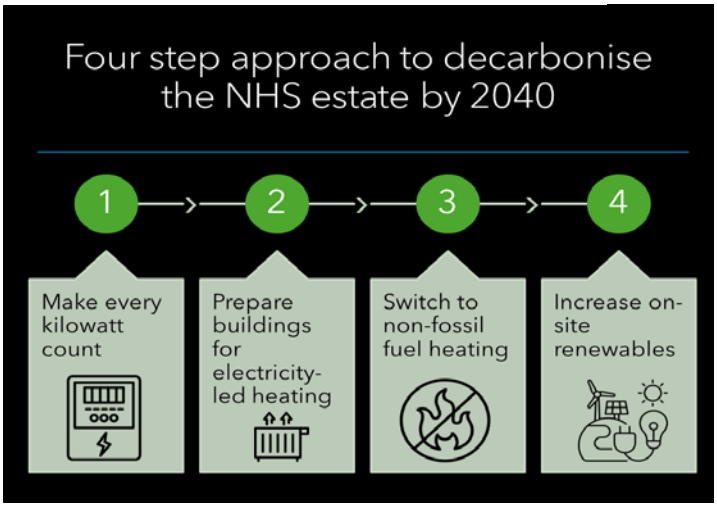
As the UK moves towards its net-zero emissions target by 2050, the NHS estate faces the dual challenge of maintaining existing facilities while also undertaking significant decarbonisation efforts and digital improvements. This is a serious risk for the Cheshire and Merseyside system.

Condition	Description
A	As new (built within past 2 years) and is expected to perform adequately over its projected shelf life.
B	Sound, operationally safe and exhibits only minor deterioration.
C	Operational but major repair or replacement needed soon, within 3 years for building elements and 1 year for engineering elements.
D	Runs a serious risk of imminent breakdown.
X	Supplementary rating added to C / D to indicate that nothing but a total rebuild or relocation will suffice (improvements are impractical / too expensive to be tenable).

7.2 National objectives

The NHS Estates and Facilities *Net Zero Carbon Delivery Plan* sets out a clear, sequential four step investment approach to decarbonising NHS sites; illustrated in [Figure 7].

Figure 7 - Estates four step decarbonisation approach.



Energy

Energy accounts for approximately 62% of the carbon footprint of our Trusts (scopes 1 and 2[2]), and the cost of purchasing energy in 2023/2024 totalled £80m.

[2] *Scope 1*: direct emissions from the organisation's owned and controlled resources. *Scope 2:* indirect emissions from the generation of purchased energy, from a utility provider. *Scope 3*: all indirect emissions not included in *scope 2* that occur in the value chain of the organisation, including both upstream and downstream emissions.

Key contributors to energy consumption include:

- Heating, ventilation, and air conditioning (HVAC)
- Lighting
- Medical equipment - advanced medical technologies are essential for diagnosis and treatment but can be energy-intensive.
- Water heating
- 24/7 operational activity
- Ageing equipment - older systems tend to be less energy-efficient, leading to higher consumption and costs.
- Building size and design - larger estate with complex design often leads to increased energy consumption.

Burning fossil fuels (coal, gas, oil) is the biggest contributor to global climate change, and yet global consumption of fossil fuels is still increasing. In Cheshire and Merseyside approximately 83% of energy use in Trusts is gas and we have until 2032 to transition to cleaner, renewable sources of energy. The Sustainability Team has been collating heat decarbonisation reports from Trusts; the expectation being that any outstanding reports should be submitted with urgency. This will enable the accurate quantifying of work, financial implications and development of a roadmap to complete transitional works by 2032. Significant progress is required during the lifetime of this Plan.

Lighting

Switching to LED lighting is a ‘quick win’ in terms of both carbon and financial savings. LED lamps have an average life of up to 50,000 hours, thirty times longer than incandescent and 5 times longer than fluorescent lamps. Several Trusts and general practices have already made the switch to LEDs and whilst this does incur significant upfront financing, the initial outlay is recouped on average in under three years in energy and maintenance savings.

Solar PV

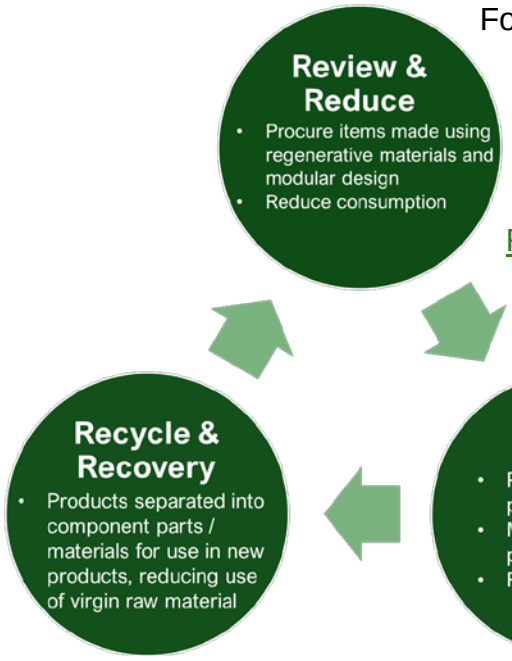
The installation of 306 solar panels at Wirral Community Health and Care NHS FT generates an estimated 84,607kWh per year and reduces annual emissions by 27.9 tCO_2e: the equivalent of planting over 130 trees. Prior to installation, St. Catherine’s bought around 121,000kWh of energy from the national grid. The new system now meets most of this requirement at a unit cost nearly 60% lower in price.

Twelve Cheshire and Merseyside Trusts bid for LED and / or solar PV funding in January 2024, via a rare, ad hoc funding opportunity. All three Trusts bidding for solar PV funding (£2,171,607) were unsuccessful. Of the bids for LED funding, four Trusts were successful (£1,264,399) and a further six were unsuccessful (£2,375,763).

Waste

The 2022-2025 ICS Green Plan called for a strategic whole-system approach to managing waste, one that challenged staff, providers and contractors to move away from the unsustainable linear approach …

… to adopting the principles of the circular economy.



For many Trusts this has presented a complex challenge in terms of sourcing alternative products, financial implications, and influencing behavioural change.

In October 2024, the Department of Health and Social Care published a policy paper entitled Design for Life Roadmap, which is the Government's plan to build a circular economy for medical technology (medtech).

Circularity in medtech means designing, procuring and processing medical products in a way that enables them to be reused, remanufactured or recycled, preserving their value for as long as possible. An example courtesy of Mersey Care is illustrated in [Table 1].

Table 1 - tourniquet replacement - Mersey Care

Product	Sustainable Product	Benefits
 *Single-use tourniquet* 2022/23: 357,000 used by Mersey Care.	 *Reusable tourniquet* 36 tourniquets needed to cover 2022/23 use.	• 1,069kg plastic reduced • Approx 2,000kg CO_2e saved (net) • Recycled after use (returned to manufacturer)

According to recent statistics, the NHS produces over 300,000 tonnes of waste annually, which includes everything from medical supplies to food waste. Understanding types of waste generated is crucial for implementing effective waste management strategies.

The Waste sub-group of the Sustainability Board conducted an audit of waste streams and suppliers during 2024, the purpose of which was to ascertain where waste streams could be split into separate collections to gain better value for money and higher rates of recycling, and where contracts could be renegotiated giving economy at scale in line with discussions undertaken by ICSs procurement leads. The Waste sub-group has identified that there are also rebates available when items such as batteries and metals are collected separately.

Water

The UK's current domestic, business, and agricultural water usage is unsustainable, with over a third of the water extracted from natural environments being wasted due to leaks, treatment losses, and household inefficiencies. The Environment Agency's Third

Adaptation Report has highlighted the looming crisis: public water supplies in the UK are projected to need an additional 3.4 billion extra litres of water daily by 2050 if no action is taken.

This situation poses a significant risk to our healthcare system, and it is imperative that we collaborate to promote sustainable water use across all our facilities and within our communities. Relying on unsustainable groundwater abstraction is not a viable solution and harms wildlife, as well as the ecosystems that support animals and plants. Before we consider increasing our water extraction from the environment, we must focus on conserving and utilising existing resources more efficiently.

Wirral Community Health and Care NHS Foundation Trust achieved a 36% reduction in water costs from a 2018 baseline. This was accomplished through the installation of waterless urinals, cistern dams, and by implementing screen savers on staff computers to display environmental messages, such as *"report a leaking tap".*

Goal	Delivery
1. All C&M Trusts to complete heat decarbonisation plans and share with the ICB Sustainability Team. *Current status:* Completed 23.5% / Due 2025 11.8% / No plan 64.7%	2025
2. All Trusts to complete the waste stream and supplier audit. *Current status:* Completed 62.5% / No return 37.5%	December 2024
3. Transition away from all fossil fuels including gas. **(No new gas boilers 2025 ⇒)**	2032
4. Implementation plan for transition to clean fuels to be developed.	2025
5. Eliminate all waste sent to landfill.	2026
6. Providers and primary care to work to implementing the recommendations outlined within Estates 'Net Zero' Carbon Delivery Plan (technical annex).	2022 - 2030
7. Incorporate sustainable design into construction/ refurbishment of buildings / infrastructure using local businesses where possible. (Implement Net Zero Hospital Standard / BREEAM.)	Ongoing
8. Planned preventative maintenance of facilities and assets should be energy-focused; a detailed building energy survey would provide energy efficiency recommendations.	Ongoing reporting to the Sustainability Board.

These ambitions and priorities support twelve of the Sustainable Development Goals:

8. Food and Nutrition

If food waste were a country, it would be the third largest emitter of CO_2e globally after China and the USA. In the UK, approximately 9.52 million tonnes of food is wasted annually equating to around 25 million tonnes of greenhouse gas emissions, and yet it is estimated that 8.5 million people across the country are experiencing food insecurity.

8.1 Food insecurity and health inequity

Over half of the food consumed within the UK has been imported from one of over 180 countries globally. Whilst this means that the UK is reasonably resilient to supply interruptions, food supply and food security will be severely jeopardised across the world within a few years unless climate change is addressed and action to mitigate its negative impacts is undertaken. Erratic weather patterns, extreme temperatures, and natural disasters have already disrupted food production and distribution systems, leading to shortages and price fluctuations. Rising inflation, stagnant wages, global conflicts, and increasing living costs have also made it challenging for many individuals and families to access affordable and nutritious food.

According to the Food Foundation, UK households with children in the poorest fifth of the population would have to spend 70% of their disposable income on food to afford the government-recommended healthy diet. As a result, many are forced to rely on food banks to meet their basic needs. Indeed, food banks within the Trussell Trust network provided 3.12 million emergency food parcels in 2023/24. This marks the highest number of parcels ever distributed in a single year, showing a 4% increase from 2022/23 and a significant 94% increase from 2018/19.

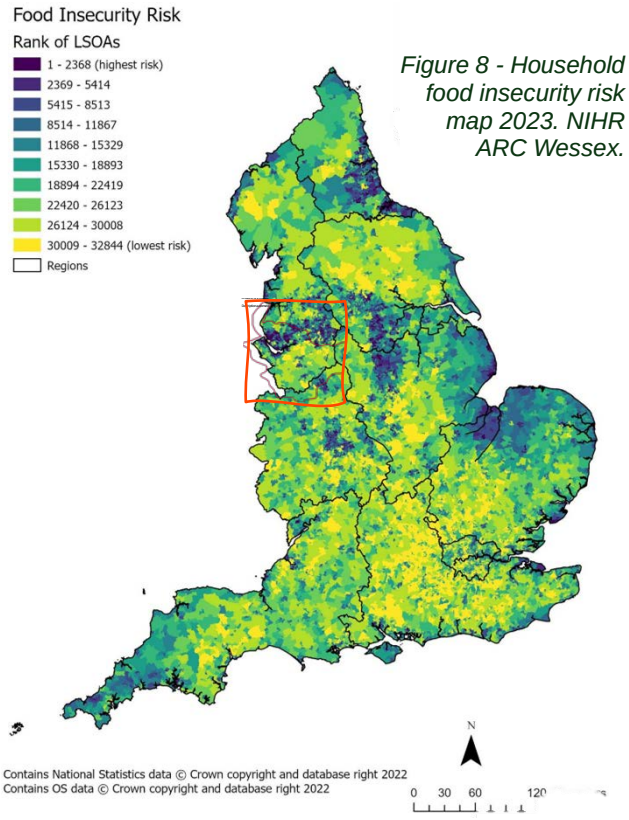


Figure 8 - Household food insecurity risk map 2023. NIHR ARC Wessex.

A new food insecurity index[3] [Figure 8] shows the north of England has the highest risk of food insecurity, with a third of at-risk areas in the north-west and 96% in urban areas including the Wirral, Liverpool, St Helens and Knowsley.

Food poverty has far-reaching consequences on health. A diet lacking in essential nutrients can lead to a range of health problems, including obesity, diabetes, heart disease, and poor mental health. Children growing up in food-insecure households are more likely to experience developmental delays, poor academic performance, and chronic illnesses. The lack of access to nutritious food also exacerbates existing health conditions, leading to increased hospital admissions and healthcare costs, all putting further strain on the NHS.

[3] Developed by researchers at the University of Southampton and NIHR Applied Research Collaboration (ARC) Wessex (2023).

8.2 From plate to planet

Across the NHS around 0.5 kilograms of food waste is produced per patient per week, at an estimated annual cost of around £230 million. In 2022/23 *reported* food waste in Cheshire and Merseyside trusts totalled 348 tonnes which would have, if sent to landfill, an estimated carbon footprint of 1,615 tCO_2e.

The ICB is dedicated to helping providers across Cheshire and Merseyside work to reduce food wastage and to dispose of any waste sustainably. For example, at Southport Hospital all food waste is collected and sent to a processing plant where it is broken down by anaerobic digestion to produce biogas which is supplied into the grid and bio-fertiliser for use on farmlands helping produce the next crop.

Did you know?

In 2019 18 billion animal lives were lost needlessly by waste in global meat production and consumption. The UK was responsible for 2% of this total.

8.3 Anchored in sustainability

By supporting local food systems and promoting access to nutritious foods, anchor institutions can improve the overall health and well-being of the population. In the case of the NHS, partnerships with local farmers and food suppliers can help ensure that patients receive fresh, high-quality meals during their stay, contributing to their recovery and overall health outcomes.

Beyond its procurement practices, the NHS has the opportunity to be actively involved in community engagement efforts to address food insecurity via anchor institution activity including, for example, working with local food banks, supporting community gardens, allotments, and cooking classes, and by promoting access to healthy food options. In addition, NHS England has now launched Recipe Bank, which provides a collection of nutritionally analysed recipes with low carbon footprints.

A sustainable food system links food production and health goals and has the following positive environmental, economic, and health impacts:

Goal	Measurement	Delivery
1. Organisations must monitor, manage and actively reduce their food waste from production waste, plate waste and unserved meals.	– Balanced scorecard rationale. – Checklist for food waste prevention and production. – WRAP – food waste reduction toolkit. – Guardians of Grub resources. – ERIC reporting.	2022 ⇒
2. Use seasonal ingredients from locally sourced suppliers and work with partners to identify opportunities for local and small to medium-sized enterprise food producers.	% of local supplier contracts. Increase in social value generated via SMEs.	Ongoing priority
3. Increase plant-based meal options for staff, patients and visitors.	20% of all hot / cold plates available as a minimum.	Ongoing priority
4. Educating patients on the link between food, health and obesity as well as the impact of food production on the environment.	Reporting to the Sustainability Board	Ongoing priority.

These ambitions and priorities support nine of the Sustainable Development Goals:

9. Medicines, Prescribing and Anaesthetics

The production and use of medications, inhalers, and anaesthetic drugs contribute significantly to environmental damage due to the waste generated from packaging, the manufacturing processes, pollution of water bodies during production, the disposal of unused drugs into public water sources and landfills, and the release of pollutants into the air.

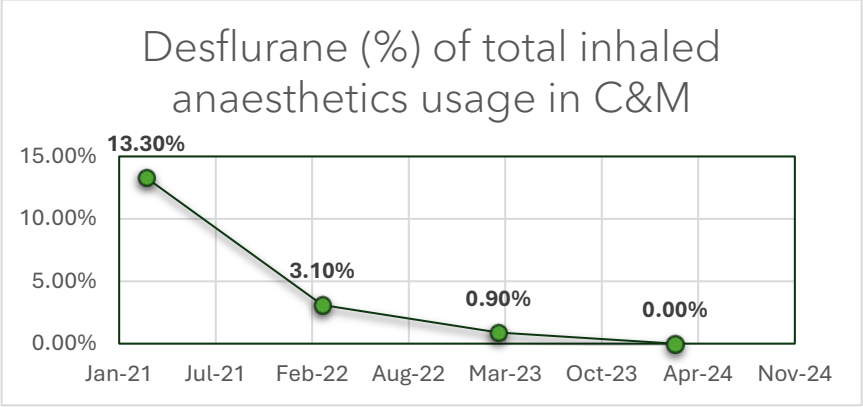
The NHS plays a crucial role in promoting sustainable prescribing practices, and healthcare professionals are being encouraged to consider not only the clinical effectiveness of a medication but also its environmental impact when making prescribing decisions.

9.1 Anaesthetics

Modern anaesthetic gases equate to 2% of the carbon footprint for all acute NHS organisations. Almost a quarter of this is from use of volatile agents (desflurane, sevoflurane and isoflurane), and over three quarters is from nitrous oxide (N_2O).

Desflurane is a greenhouse gas with a global warming potential (GWP) of 2,540, meaning that every tonne of desflurane is equivalent to 2,540 tonnes of carbon dioxide in the atmosphere. As part of its efforts to reduce desflurane emissions across the board, the NHS targeted a reduction from 20% in 2020/2021 to 10% in 2021/2022, 5% in 2022/2023, 2% in 2023/2024 to the decommissioning of the anaesthetic in routine practice by April 2024[4] across all its providers. All Trusts across Cheshire and Merseyside have met this target [Figure 9] and use the less environmentally damaging sevoflurane, which is also significantly cheaper, or total intravenous anaesthesia (TIVA) which produces significantly less post-operative nausea and vomiting.

Figure 9 - Cheshire and Merseyside Trusts desflurane (%) of total inhaled anaesthetics usage



Nitrous oxide (N_2O), commonly known as ‘laughing gas’, is a greenhouse gas with a global warming potential 310 times that of carbon dioxide. Over the past 150 years, increasing atmospheric N_2O concentrations have contributed to ozone depletion and climate change. A third of the NHS use of N_2O use comes from theatres, with the remaining two-thirds from use in obstetrics and emergency care, and N_2O wastage contributes significantly to the carbon footprint of the NHS.

[4] Some specific clinical exceptions are warranted; for example, selected patients undergoing long cranial neurosurgical procedures under general anaesthesia.

A CLEAR (Consensus for Lowering Emissions in the Anaesthetic Room) Northwest Group was established in 2022 following the success of NHS Lothian's Nitrous Oxide Project and driven by anaesthetists' commitment to reducing greenhouse gas emissions from the most polluting anaesthetics.

At Blackburn Hospital a major nitrous oxide leak was found in the theatre complex with a yearly environmental impact of running 1L flow via sevoflurane vaporiser for 125 years, equivalent to the emissions of 400 households for 1 year or driving to the moon almost 23 times! The estimated annual manifold consumption was 4,000,000 litres at a cost of £12,800, but extrapolated clinical usage was 10,000 litres at a cost of £55.

The Royal College of Anaesthetists (RCoA), along with the Association of Anaesthetists, the College of Anaesthesiologists of Ireland (CAI), the Obstetric Anaesthetists' Association (OAA), and the Association of Paediatric Anaesthetists of Great Britain and Ireland (APAGBI), jointly released a statement in 2024 endorsing the completion of the transition from nitrous oxide manifolds by the fiscal year 2026/2027 in the UK and Ireland.

Most manifolds suffer from significant leaks, with up to 80-100% of nitrous oxide escaping into the air before it can be used for delivery. This not only wastes resources but also harms the environment, as nitrous oxide is a greenhouse gas that remains in the atmosphere for over 100 years. The majority of providers in Cheshire and Merseyside have now undertaken nitrous oxide audits resulting in the removal/ planned removal of manifolds.

Figure 10 - Volume (litres) of nitrous oxide consumption in Cheshire and Merseyside Trusts (2018 - Sept. 2024)

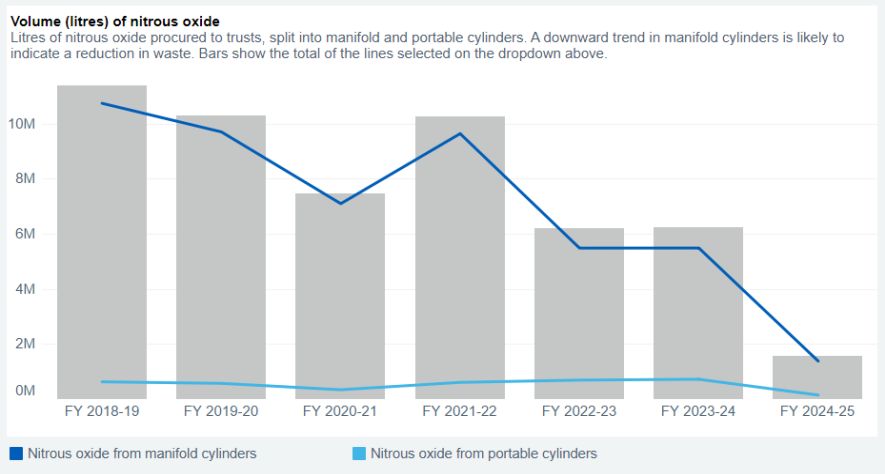
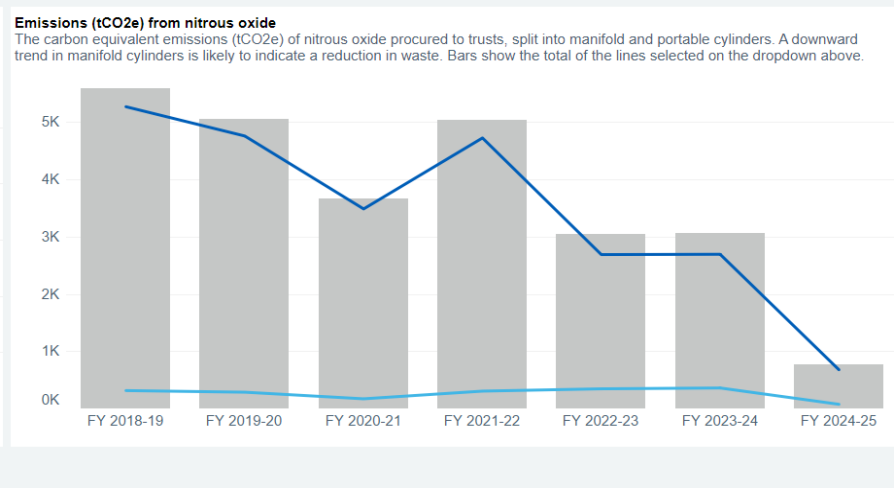


Figure 11 - Nitrous oxide emissions (tCO2e), Cheshire & Merseyside Trusts (2018 - Sept. 2024)



Total intravenous anaesthesia (TIVA)

Total intravenous anaesthesia (TIVA) has emerged as a powerful alternative to traditional inhalational anaesthesia and involves the administration of anaesthetic drugs entirely through intravenous (IV) routes, avoiding the use of inhaled agents such as gases and volatile liquids. The technique allows for precise control over the depth of anaesthesia, providing an optimal balance between sedation and responsiveness during surgical procedures.

Inhalational anaesthetics can contribute to greenhouse gas emissions, impacting our environment. TIVA minimizes the release of volatile anaesthetics into the environment, beneficial for both the ecological footprint and the safety of the operating theatre staff.

9.2 Medicines & prescribing

NHS Cheshire and Merseyside issued 32 million individual prescriptions in Primary Care in 2023/24. 68% of Cheshire and Merseyside residents were dispensed a medicine in the same period.

In 2018 the Government commissioned a National Overprescribing Review led by Dr Keith Ridge, Chief Pharmaceutical Officer for England. The review was guided by senior stakeholders from across the healthcare system, together with patient and third sector representation. It looked at reducing inappropriate prescribing, with a particular focus on the role of digital technologies, research, culture change and social prescribing, repeat prescribing and transfer of care. The review also called for more research to investigate the reasons why overprescribing is more likely to affect older people, people from ethnic minority communities and people with disabilities.

Medicines Management and Optimisation colleagues in Cheshire and Merseyside have adopted a patient-centred approach which focuses on four key principles:

1.) Understand the patient's experience
2.) Evidence based choice of medicines
3.) Ensure medicines use is as safe as possible
4.) Make medicines optimisation part of routine practice

These principles are supported by actions indicated in [Figure 12].

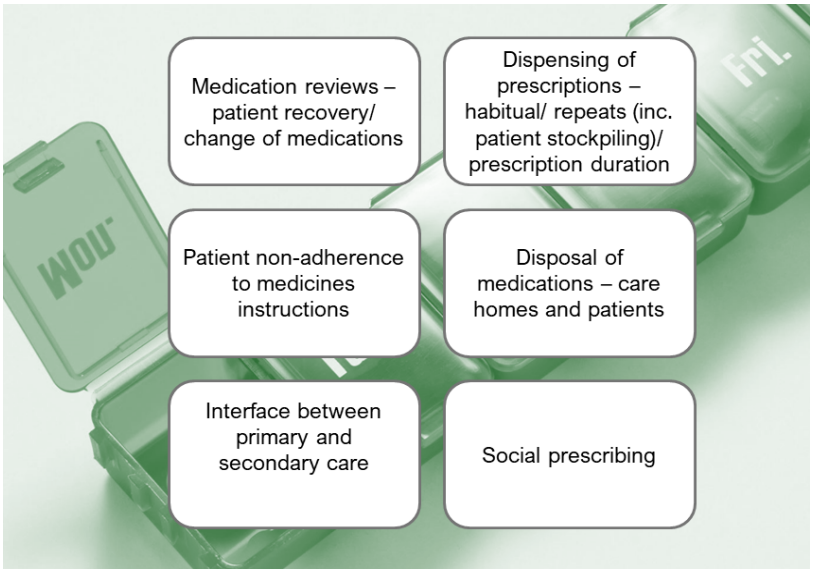


Figure 12 - Medicines management: examples of action

Inhalers

Inhalers are medical devices that deliver medication directly to the lungs, providing relief to those with respiratory issues.

Did you know?

Around 40% of pharmaceutical products today draw from nature, including aspirin and treatments for childhood cancer and malaria.

There are two primary types of inhalers:

- Metered-dose inhalers (MDIs): These inhalers use a propellant to deliver medication in a precise dose. While effective, many MDIs contain hydrofluorocarbons (HFCs) as propellants, which are potent greenhouse gases.
- Dry powder inhalers (DPIs) / soft mist inhalers (SMIs): These inhalers do not use propellants and rely on the patient's inhalation to disperse the medication. Though generally considered more environmentally friendly, they still contribute to waste through single-use components. NHS C&M also perform well on this measure with 53% DPIs prescribed as a proportion of all inhalers.

A significant concern regarding MDIs is their contribution to climate change. MDIs are pressurised with hydrofluorocarbons (HFCs) which are potent greenhouse gases, contributing significantly to global warming.

According to the World Health Organization (WHO), MDIs account for approximately 3-5% of total greenhouse gas emissions from healthcare.

Salbutamol MDIs are the single biggest source of carbon emissions from NHS medicines prescribing, and NHS C&M is currently performing in reducing levels of salbutamol prescribing, with the mean carbon impact (kg CO_2e) per salbutamol inhaler prescribed being below the national mean.

Both types of inhalers contribute to plastic and medical waste, and it is estimated that millions of inhalers are discarded each year, with many ending up in landfill where the degradation of plastic can take hundreds of years. DPIs, while not using propellants, can still produce significant waste due to their packaging and single-use nature.

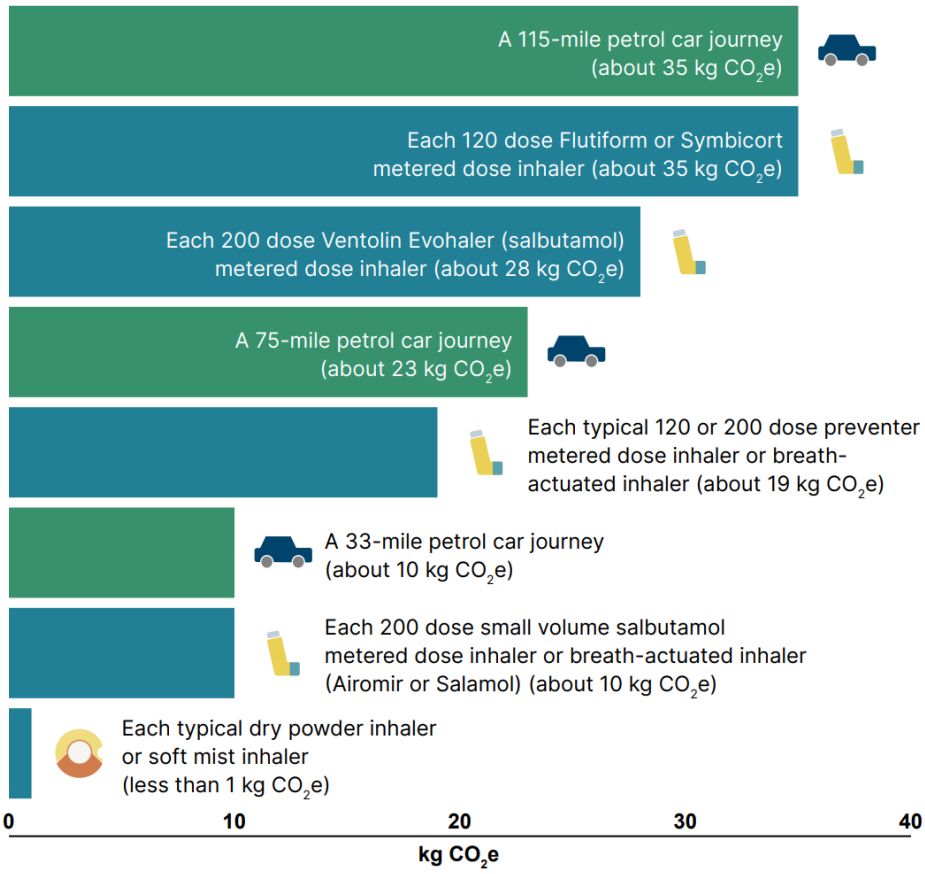


Figure 13 - NICE guide to inhalers and carbon emissions.

9.3 Social prescribing

Social prescribing originated in the UK through a ‘bottom up’ approach and at its heart connects people with services, groups or organisations (mainly voluntary or community) who can provide support to address varying levels of non-medical needs.

The NHS link worker model of social prescribing (connecting patients to appropriate services and health intervention programmes) was introduced in the 2019 Long Term Plan as one of the six core pillars of universal personalised care. The Long Term Plan stated there would be 1,000 link workers in post by 2020-21, and 4,500 link workers in post in primary care networks to support 900,000 patients by 2023. The publication of the NHS Long Term Workforce Plan (2023) underlined the commitment still further by promising a 300% expansion in link worker posts from 3,000 (September 2022) to 9,000 by 2036-2037.

In 2020, research for NHS England found that funding was the primary cause of concern for the implementation of NHS social prescribing. The cost of living crisis, climate emergency, food and fuel poverty, housing issues, and the coronavirus pandemic have left many communities in crisis. Frontline community organisations are also feeling intense economic pressure, with the short-term nature of NHS contracts leaving voluntary, community, faith and social enterprise (VCFSE) organisations facing challenges in long-term planning and in hiring and retaining staff.

Green and blue social prescribing

Green and blue social prescribing involves activities that connect people with the natural environment, and there are several organisations across Cheshire and Merseyside delivering various nature-based activities. In January 2023 the Northern Network (an initiative from Groundwork to connect green spaces across the north of England), brought together a Cheshire and Merseyside Green Social Prescribing Group to explore the current landscape for social prescribing, to discuss benefits, problems or issues, and to look at different ways to improve green social prescribing across the region. The Group published its first report in 2023, The Missing Link for Green Social Prescribing, which includes recommendations for health and care commissioners and VCFSE organisations.

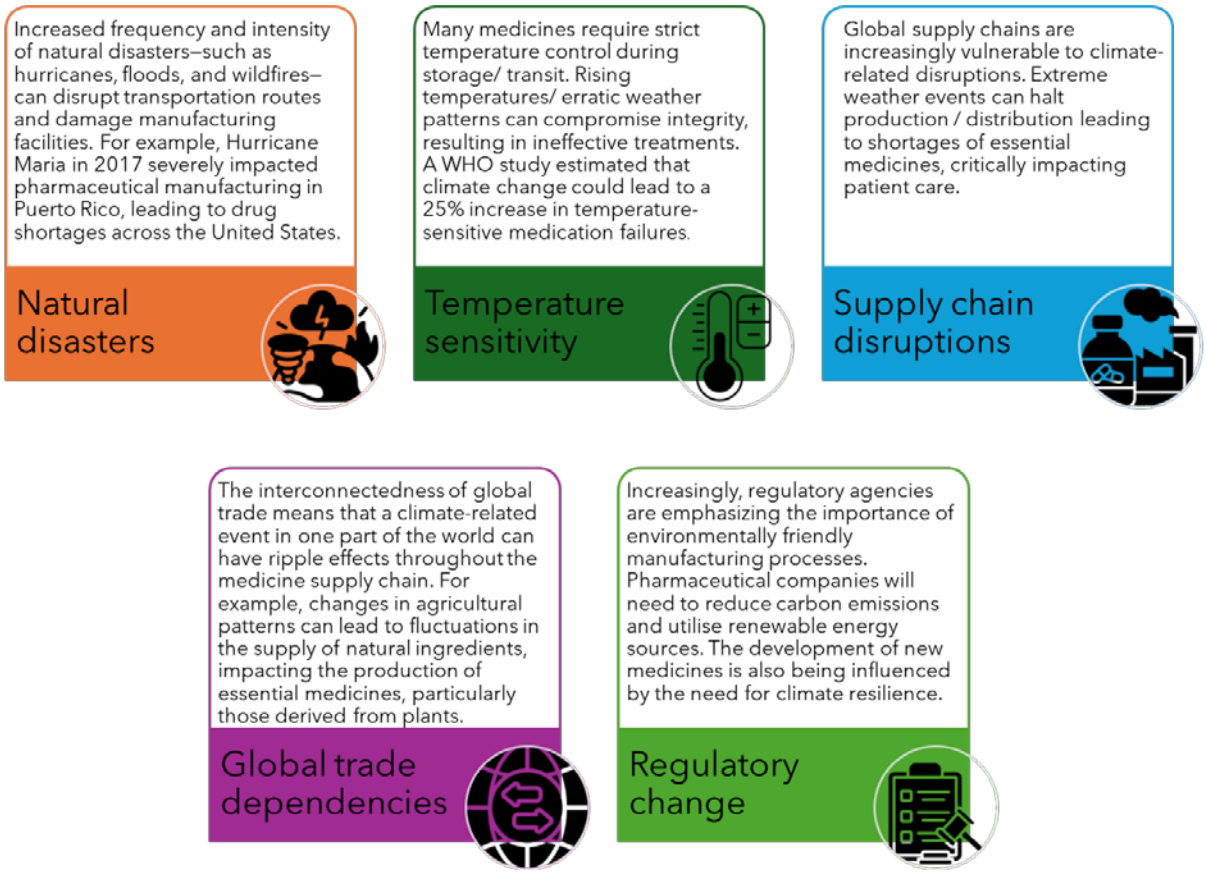
In terms of the recommendations, it is particularly important to work closely with our PCNs in ensuring that they publish how their services are delivered, making it easier for green providers to navigate. Additionally, identifying relevant patients or cohorts of patients, compiling evidence and evaluating outcomes of social prescribing all rely heavily on how patient information is coded and the type of information which primary care collects.

9.4 The climate crisis and its threat to medicine supply chains

Generic medicines provide 78% of all NHS prescription medicines and the majority of critical ICU medicines. Approximately 26% of these medicines are manufactured in the UK and the remainder are largely produced in Europe and India, with China being a significant source of active pharmaceutical ingredients (APIs).

Climate change will cause disruption to the supplies of APIs and directly impact on the supply of finished dosage form medicines. [Figure 14] details the risks in greater detail.

Figure 14 - Climate change impact on global medicine supply.



Goal	Measurement	Delivery
1. Every provider Trust (using anaesthetics) to have a designated environmental anaesthetist lead.		January 2025
2. Support Trusts to reduce emissions from nitrous oxide and mixed nitrous oxide waste by 9-14% into 2024/25 against the 2023/24 baseline.		2024/25
3. Support Trusts to undertake Entonox waste audits.	Waste audit data.	2024/25
4. Work as a system to reduce the use of pressurised metered dose inhalers (pMDIs).	Emissions reduction of 6-7% against 2023/24 baseline.	2025
5. Engage with patients to promote correct inhaler technique, self-management and adherence.	Number of patients engaged with and supporting prescribing data.	Ongoing
6. Where clinically appropriate prioritise evidence-based therapies over pharmaceutical interventions and focus on the reduction of carbon emissions by medicines optimisation. (Supported by GP Prescribing Scheme, (2021).	Prescription / social prescribing data and outcomes.	Ongoing
7. Sustainability to be built into medicine purchasing decisions.		2025 ⇒

8. Exploration with PCNs around ensuring the success of social prescribing is not simply measured in reduced GP visits and or/ take up of referrals.	Better SP coding / data gathering around determinants of health for particular patient cohorts.	2026

These ambitions and priorities support seven of the Sustainable Development Goals:

10. Primary Care

Primary care is responsible for 25% of the total NHS greenhouse gas emissions, and whilst general practice sites are significantly smaller than those of provider trusts, 90% of patient appointments take place in primary care each year. To put it in perspective, over 389 million appointments were delivered by general practice in 2023 with hospital outpatient appointments sitting at roughly a third of that total.

However primary care extends beyond general practice and from 1st April 2023, integrated care boards assumed responsibility for commissioning pharmacy, general ophthalmic, and dental services. As a result, Cheshire and Merseyside ICS faces a significant and increased challenge in meeting net zero commitments, but primary care partners are advantageously positioned to reduce greenhouse gas emissions and enact change at the grassroots level.

10.1 Ten point plan for primary care

The 10-Point Plan for Primary Care [Figure 15] was originally developed by the former NHS Cheshire CCGs greener primary care group for GP practices before being adopted by the ICB in 2022 and extended to include the entirety of primary care. It was shared in a national forum, and NHS organisations across England have chosen to implement its actions. The plan serves as a guide and enables primary care to minimize its environmental footprint in alignment with the NHS's net zero goals.

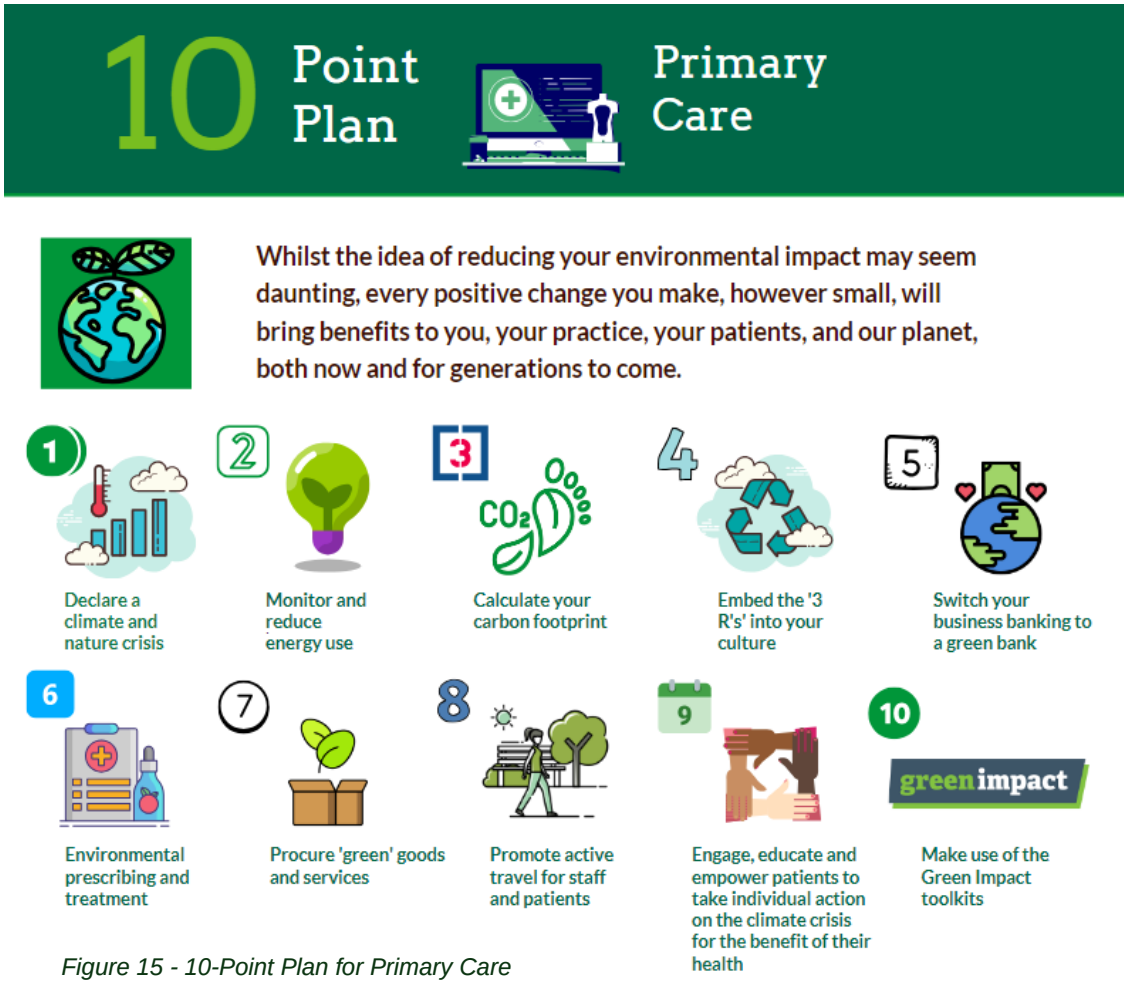


Figure 15 - 10-Point Plan for Primary Care

10.2 General practice

The average footprint of general practice in England can be shown as a 40/60 split between non-clinical and clinical activity. [Figure 16] A quarter of all NHS carbon emissions derive from medicines, over 55% of which are prescribed by practitioners in general practice. Pharmaceuticals and prescribing account for at least 60% of primary care emissions and reducing this impact continues to be a priority for primary care action.

There are 349 GP practices across Cheshire and Merseyside, making up 51 Primary Care Networks (PCNs) across the 9 Places. To deliver the 10-Point Plan for Primary Care, actions will be supported by the ICB as appropriate to maximise the benefits of collaboration, shared learning and minimise duplication and effort.

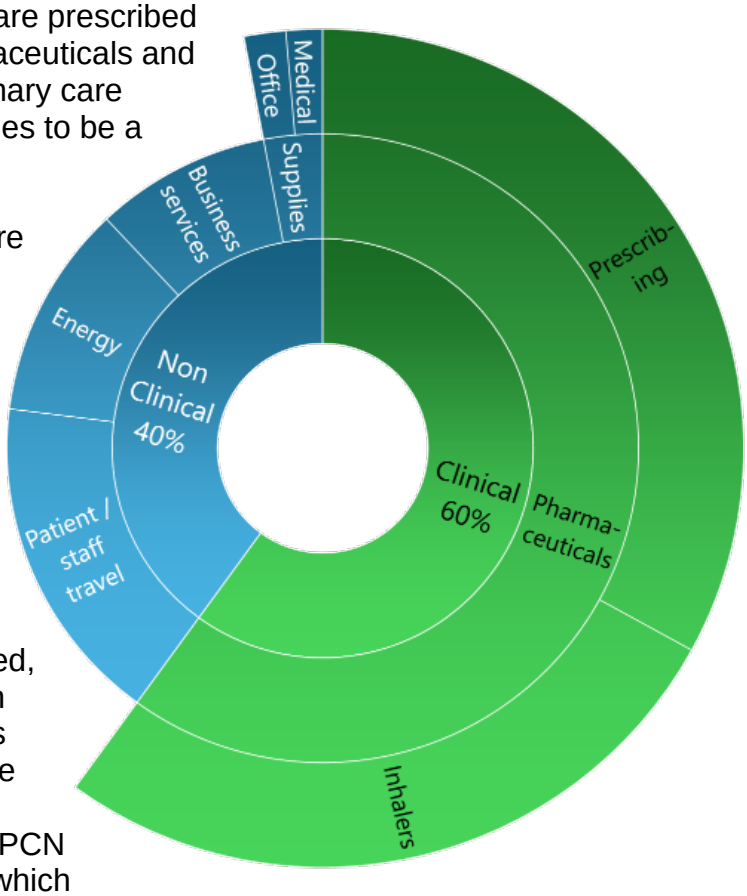


Figure 16 – Approximate general practice carbon footprint showing non-clinical-clinical split.

Resources

Resources to support this work are stretched, and the situation is further complicated with the ICB losing its funding for a GP who was providing one session a week to support the agenda. Additionally, the direct enhanced service (DES) specification, along with the PCN Investment and Impact Fund (IIF) targets, which aimed to reduce emissions from metered dose inhalers (MDIs) and support clinical best practice in prescribing and respiratory care, have been revised by NHSE. Their removal from the DES has negatively impacted lower carbon inhaler prescribing across the sub-region.

However, the ICB identified a small resource to support greener primary care in 2024 and is working with the Cheshire and Merseyside Greener Practice group to deliver a range of projects which focus on delivering key objectives within the 10-Point Plan and which can be replicated across the sub-region.

10.3 Wider primary care

The 10-Point Plan for Primary Care was updated in 2023 to reflect the increased delegated responsibility for primary care services within the ICB. A series of engagement sessions is planned with the ICSs Community Pharmacy Operations Group, General Dental Services Operations Group and Cheshire and Merseyside Optometry Operations Group in the early part of 2025 to further progress carbon footprinting and climate adaptation and mitigation work.

Goal	Measurement	Delivery
1. Calculating the carbon footprint of primary care practices.	All primary care practices to calculate their carbon footprint utilising tools as outlined in the 10-Point Plan for Primary Care.	2028
2. Monitor and reduce energy use. Practices to move to 100% renewable energy tariffs where practicable.	Liaison and monitoring with NHS PS, CHP, ICB, practices.	2026
3. Procurement: primary care to reduce unnecessary purchasing and to choose sustainable options where appropriate.	Reduced printing costs, reduced consumables	Ongoing
4. Primary care organisations to implement actions outlined within the 10-Point Plan for Primary Care.	Liaison with PCNs / Estates.	Ongoing
5. Primary Care buildings to have transitioned from fossil fuels.	Liaison with Estates/ NHSPS, CHP around investment plans.	2032

These ambitions and priorities support nine of the Sustainable Development Goals:

11. Supply Chain and Procurement

Sustainable procurement focuses on the way we source our food, goods, and services, and involves obtaining products in a cost-effective way whilst reducing environmental impact and driving social value in the community through suppliers. Given that more than 60% of the carbon footprint of the NHS originates from its supply chain, reaching net zero will require a strong partnership of action between the NHS and its 80,000+ suppliers.

11.1 The Five Supplier Requirements

11.2 Procurement in Cheshire and Merseyside

Procurement teams are vital to the delivery of not only the ICS' Green Plan, but the Green Plans of the 17 provider Trusts. Working collectively and in collaboration across the following key areas will achieve greater impact, avoid duplication, and deliver more powerfully.

Collaboration with suppliers and within ICS procurement teams has seen some positive action, priorities going forward include:

Order consolidation (significantly reducing Trust and supplier emissions as some Trusts order a single product up to 15 times per week)

- Some Trust systems auto re-order when items are used but do not collate orders
- Some Trusts have inventory management systems, others do not
- There are many different ordering points within a single hospital, with staff ordering products over 24 hours
- Orthopaedics – particularly problematic in setting up to get to one order per week

Packaging alternatives

- Greener solutions to keep the products safe in transit and protected from deterioration

Products

- Reducing / eliminating single-use items
- Application of circular economy[5] principles

11.3 Single-use plastics

Globally the annual production of plastic soared from 1.5 million metric tons in the 1950's to 200 million metric tons in 2002, 400.3 million metric tons in 2022 and is estimated to be 430 million metric tons by the end of 2024.

Single use plastics are choking our seas, impacting our health and damaging the environment, and because of its longevity **every single piece of plastic ever produced still exists today in some form**.

Figure 17 - Credit: National Geographic

In the UK we throw out 1.7 billion pieces of plastic per week and only 17% of this is recycled. A huge 58% is incinerated, and the remainder ends up in waste exports, landfill and in our rivers and oceans.

Microplastics are fragments of any type of plastic less than 5mm in length and are either produced intentionally for use in products such as nappies, cosmetics, toothpaste, paint and so on (the list is almost endless) or are produced via degradation (larger plastics naturally breaking down), or by wear and tear such as debris from car tyres. Once in the environment they are almost impossible to get rid of and scientists have found them in the ocean, in Arctic sea ice, drinking water, food, in animals and marine life, the air and breast milk.

The NHS launched its Plastics Pledge in 2019 with an undertaking to cut 100 million single use plastics items in hospitals and the Department for Environment, Food and Rural Affairs (DEFRA) initiated a single-use plastics ban in October 2023. Trusts across our region have already made great strides in reducing single-use plastic waste and are now addressing the wider use of single-use plastics in clinical applications, packaging, operating theatres and in the supply chain.

[5] Designing for durability, reuse, remanufacturing, and recycling to keep products, components, and materials circulating in the economy.

In April 2021 Liverpool Heart and Chest Hospital NHS Foundation Trust (LHCH) commenced using reusable theatre gowns. Not only has it saved 23,520kg CO2e per annum, but it has also netted savings of £22,200.

In May 2021, Liverpool University Hospitals NHS Foundation Trust (LUHFT) anaesthetists swapped disposable plastic caps to reusable fabric caps. This was extended to the wider theatre staff soon after. The swap removed 217,000 single-use caps per year and avoided over 1 tonne of clinical waste. It also provided a cost saving of £86,000 over a 4-year period. Furthermore, the change improved communication between team members; particularly important given 70% of adverse events in theatre environments are due to some form of miscommunication.

In 2024 Merseycare NHS Foundation Trust introduced reusable tourniquets. Over 2022/23 the Trust used 357,000 single-use tourniquets, equivalent to 36 reusable tourniquets, and introducing this item will see plastic reduced by 1,069kg and a saving of 2,000 kgCO_2e.

Goal	Measurement	Delivery
1. All NHS procurements to include a minimum of 10% net zero and social value weighting.	October 2024: C&M at 100%	2022 ⇒
2. From April 2024 all new procurements of high value (£5m p/a exc. VAT and above) and new frameworks operated by in-scope organisations, irrespective of the value of the contract, where relevant and proportionate to the framework, require suppliers to publish a Carbon Reduction Plan for their UK Scope 1 and 2 emissions and a subset of Scope 3 emissions as a minimum (aligning with PPN 06/21).	October 2024: C&M at 100%	2024 ⇒
3. From April 2024 a Net Zero Commitment is required for procurements of lower value (below £5m p/a exc. VAT and above £10k exc. VAT).		2024 ⇒
4. From April 2027 all suppliers will be required to publicly report targets, emissions and publish a Carbon Reduction Plan for global emissions aligned to the NHS net zero target, for all of their Scope 1, 2 and 3 emissions.		2027 ⇒
5. Reconvene the ICS sustainable procurement group to drive the agenda across the system.		2025 ⇒
6. Walking aid return and reuse schemes to be adopted by all C&M trusts issuing walking aids. *(If 2 out of every 5 walking aids were returned, the average hospital could save up to £46k p/a.)*	March 2024: C&M at 55%	2025

These ambitions and priorities support twelve of the Sustainable Development Goals:

12. Travel and Transport

Every mile we travel leaves a mark on the planet, and whilst travel for business, commuting and service delivery within the NHS is unavoidable, the way we travel has a big impact on the environment. Traditional modes of travel, such as vehicles that run on fossil fuels, contribute significantly to air pollution and greenhouse gas emissions. Emissions from NHS staff commuting are estimated at around 560 kt CO_2e/year, over half of the total carbon footprint of NHS travel and transport [Figure 18] with most journeys taking place in single occupancy vehicles.

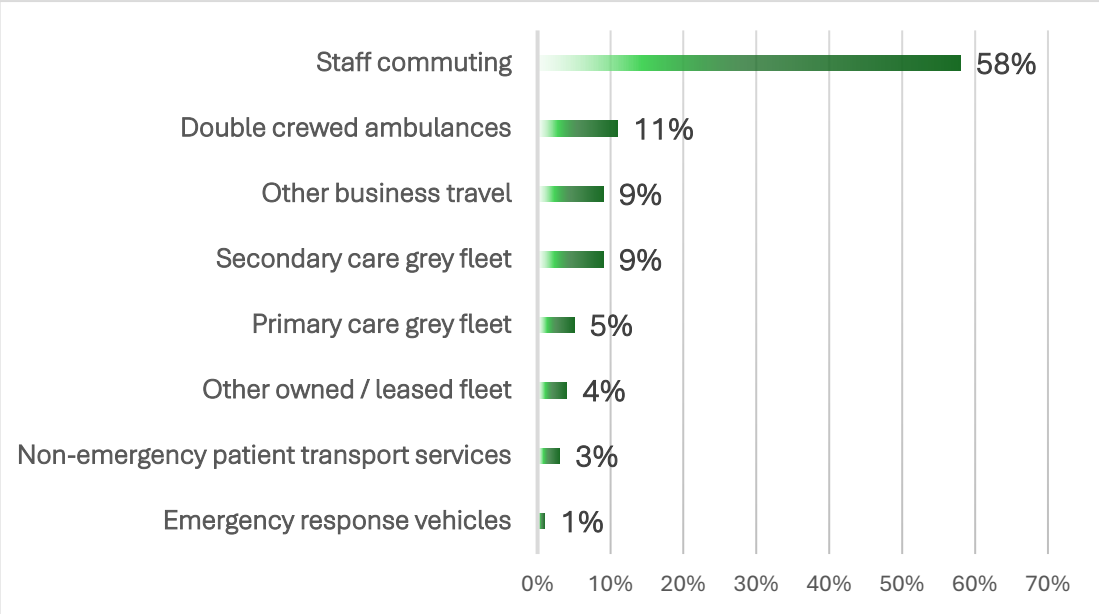
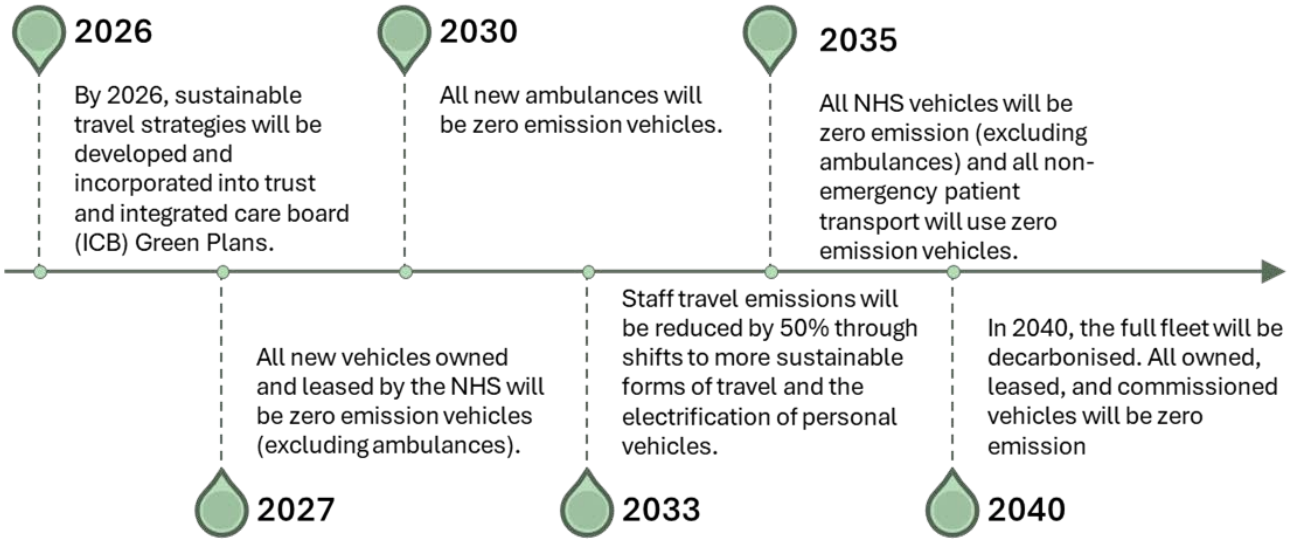


Figure 18 - NHS travel categories. 'Grey fleet' refers to private vehicles used for business commuting.

On 31st October 2023, NHS England (NHSE) published its Net Zero travel and transport strategy which describes the interventions and modelling underpinning the commitments that the NHS will have fully decarbonised its fleet by 2035, with its ambulances following in 2040, examining each of the major components of the NHS fleet and outlining the benefits to patients and staff. Key steps marking the transition of NHS travel and transportation include:



12.1 Sustainable travel and transport goals and progress

This plan summarises the progress made across Cheshire and Merseyside from the first Green Plan to date and outlines the journey ahead in helping staff, patients, and visitors to reach our sites and communities safely, sustainably and with the benefit of improved health and reduced cost both in monetary and in environmental terms.

Improving air quality

One of the major contributors to air pollution is transportation. The emissions from vehicles, especially those running on fossil fuels, release harmful pollutants into the air, affecting the quality of the environment. Whilst pollutants such as nitrogen oxides (NOX) and particulate matter (PM2.5 and PM10) have declined as vehicle emissions standards have improved, particulate matter levels, specifically PM2.5, from brake and tyre wear have increased by almost 20% since 1990.

Implementing the sustainable travel pyramid

The sustainable travel pyramid [Figure 19] is a visual representation of different modes of transport ranked by their level of sustainability. At the base of the pyramid are the most sustainable modes of transport, whilst at the top are the least sustainable options. By following the pyramid, individuals can make informed choices about how they commute and travel for business and prioritise options which have a lower carbon footprint.

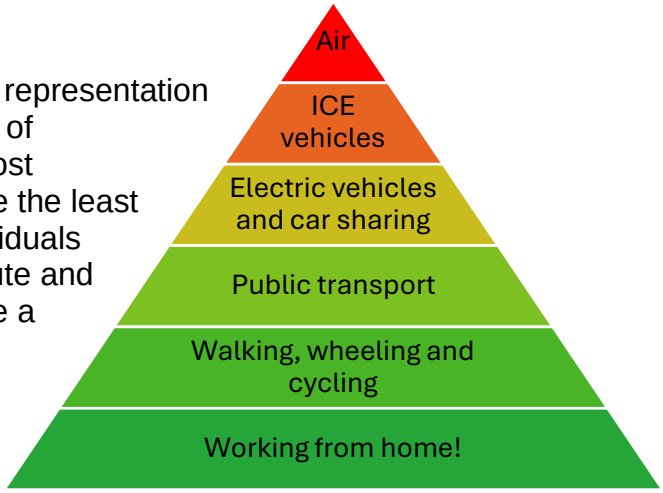
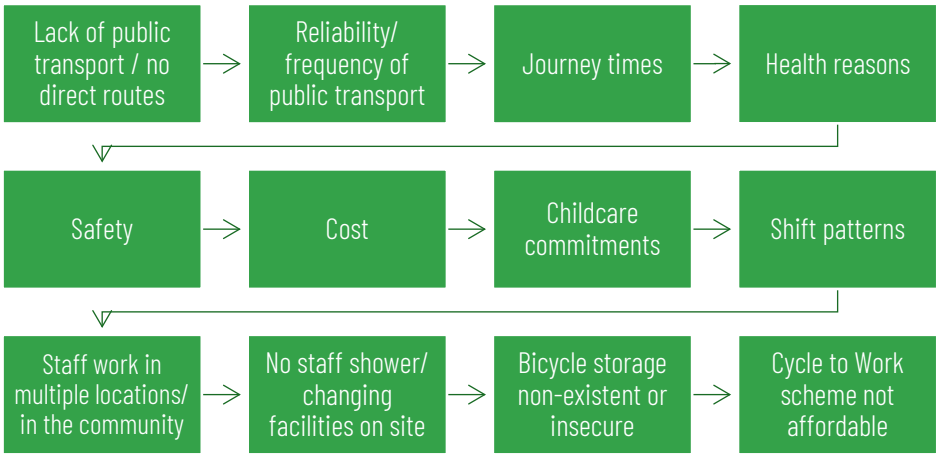


Figure 19 - Sustainable travel pyramid. (ICE = internal combustion engine)

Active travel and public transport

Choosing more environmentally friendly modes of travel including walking, wheeling, cycling or public transport contributes to the fight against climate change, reduces traffic congestion and encourages physical fitness. Active travel is one of the main pillars of the Physical Activity Strategy, and with the link to the NHS Prevention Pledge work, the ICS supports NHS Trusts to implement initiatives to encourage staff and patients to choose active travel for their journeys where appropriate. The benefits of active travel and increased use of public transport are widely recognised, however research amongst staff, patients and visitors has shown that there are barriers:



Opportunities

The transition to sustainable commuting practices is not without its challenges, but there are opportunities for organisations to take on the challenge and tackle carbon emissions from commuting, business travel and travel to our locations.

Active Travel
- Lobby for an expansion of / improvement to accessible public transport/ active travel infrastructure.
- Support active travel with showers, lockers and secure cycle parking (cycle storage preferable to racks).
- Improved lighting outside buildings.
- Parking further away or getting off the bus early to walk some of the journey not only has physical health and environmental benefits, but it boosts cognition, creativity and focus at work.

Electric Vehicles
- Cheaper vehicles.
- Better range.
- Improved EV charging infrastructure.

Home and Office
- When looking at closing office bases and designating new ones, greater consideration to be given to how staff can travel actively and/ or use public transport. Some ‘out of town’ bases are only easily accessible by car.
- No mandatory days in offices unless absolutely necessary. Keep face to face meetings on the same day to reduce multiple trips.
- Working from home to be encouraged more - many in-person meetings are unnecessary and could easily be done using MS Teams.
- Review why staff are travelling - helps with the climate agenda and reduces expenses.

Public Transport
- Team away day venues to be within walking distance of good, accessible public transport (ideally starting after 10am and finishing early enough to enable cheaper travel).
- Work with local authorities / transport companies to improve accessibility, connectivity and integration between different modes of transport, particularly in rural areas.
- Design appealing rewards and benefits to promote sustainable commuting.

12.2 All Together Active

All Together Active is a system-wide strategy for physical activity aimed at strategic and place-based partners across Cheshire and Merseyside in a position to influence changes in physical activity at scale. The ICS commissioned the work and will support primary, secondary care and our anchor organisation partners to implement initiatives to further encourage staff and patients to choose active travel for their journeys.

Organisations across the ICS are committed to addressing these issues, both to improve access to more environmentally friendly options and to reduce CO_2e emissions around our sites and within our communities. An Active Travel group comprising representatives from organisations across the ICS is part of the All Together Active’s governance structure, and the group is committed to tackling inequality, aligning with All Together Fairer.

Organisations across the ICS are committed to addressing these issues, both to improve access to more environmentally friendly options and to reduce CO_2e emissions around our sites and within our communities.

12.3 Staff incentives

Health organisations within Cheshire and Merseyside currently offer a range of incentives to encourage employees to choose planet-friendly travel options. These incentives promote environmental sustainability and can also contribute to enhancing employee satisfaction and wellbeing.

Cycling

The Cycle to Work Scheme is a government approved scheme offered by the ICB and every provider trust across Cheshire and Merseyside. Uptake has been reasonable, and trusts in particular have worked to provide/ improve on-site facilities such as lockable bicycle storage (or cycle hubs) and areas for staff to shower and change.

Staff surveys have indicated that barriers to cycling to work could be eliminated by the provision of:

- Fix-it cycle stations on site (including pump and tools, etc)
- Bike user groups / cycling buddies
- Cycling breakfasts
- Cycling proficiency lessons
- Dr Bike style maintenance sessions
- Dedicated and/ or safer cycle routes

Lease Car Scheme

Lease car schemes are offered by the ICB and in every provider trust, however this can be an expensive option for staff, but as internal combustion engine (ICE) vehicles are phased out it might become more affordable.

Travel Concessions

The ICB facilitated a systemwide deal with Arriva buses offering all NHS staff discounted rates on monthly bus travel passes, and many trusts have initiated discounted rates with transport providers at a local level. In 2022 the Government introduced a £2 bus fare cap for single journeys - this might also be a more economical option for staff than purchasing a monthly pass.

12.4 System alignment and Green Plan deliverables

This format of the system Green Plan aligns with the transport and travel plans of Provider Trusts; however, its principles and priorities are also embodied in an internal facing Sustainable Travel Plan for ICB staff. All are aiming to deliver the same overarching actions.

Goal	Measurement	Delivery
1. All vehicles offered through the NHS vehicle salary sacrifice schemes will be electric.	Review of schemes for compliance.	2026
2. Sustainable travel strategies will be developed and incorporated into NHS organisations' Green Plans.	Review of refreshed Green Plans during 2025/2026.	2026
3. All new vehicles owned or leased by the NHS will be zero emission (excluding ambulances).	NHS Fleet Data Collection	2027
4. Staff travel emissions will be reduced by 50% through shifts to more sustainable forms of travel and the electrification of personal vehicles.	Bi-annual staff travel and transport survey	2033
5. All vehicles owned or leased by the NHS will be zero emission (excluding ambulances).	NHS Fleet Data Collection	2035
6. All non-emergency patient transport will be undertaken in zero emission vehicles.	Procurement and contracting	2035
7. All business travel and commuting will be zero emission.	Bi-annual staff travel and transport survey	2040

These ambitions and priorities support four of the Sustainable Development Goals:

13. The Health Implications of Crossing the Planetary Boundaries

The concept of planetary boundaries has emerged as a critical framework for understanding the limits of Earth's ecosystems and the implications for human wellbeing. Developed by a group of scientists led by Johan Rockström (Stockholm Resilience Centre[6]) in 2009, the planetary boundaries framework identifies nine critical Earth system processes that regulate the stability of the planet and the environmental limits within which humanity can safely operate. These include climate change, biodiversity loss, land-system change, ocean acidification, nitrogen and phosphorous loading, freshwater use, atmospheric aerosol loading, stratospheric ozone depletion and novel entities (chemical pollution). Crossing these boundaries can lead to irreversible environmental damage and poses a significant threat to human health.

The boundaries have been assessed at regular intervals since first being proposed, and in 2023 it was found that six of the nine boundaries had been crossed [Figure 20]

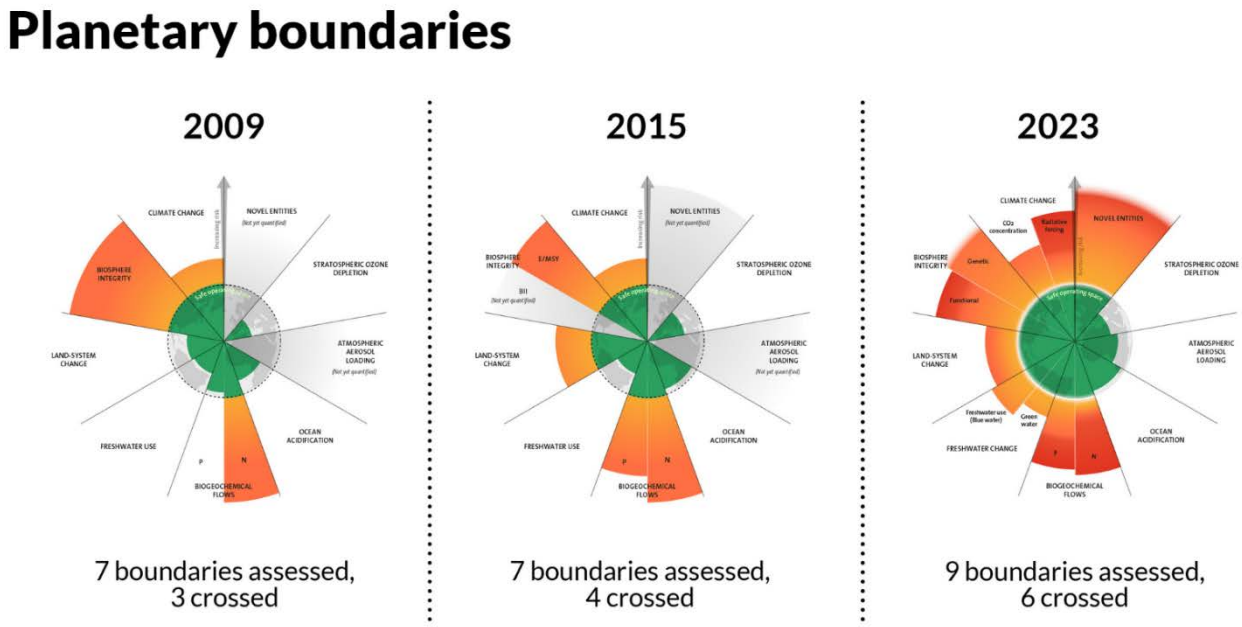
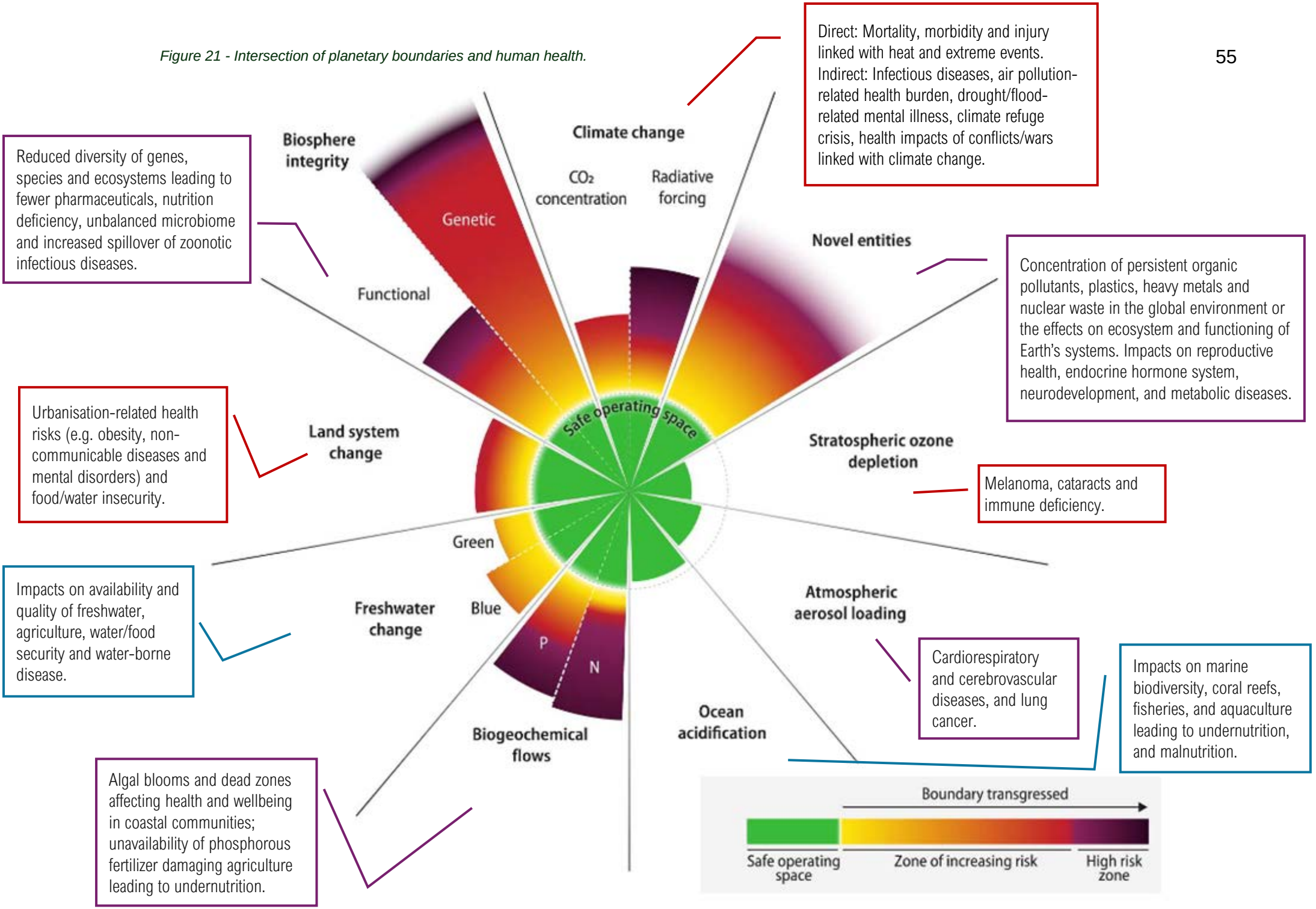


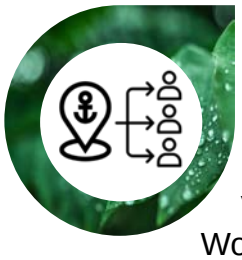
Figure 20 - Transgression of planetary boundaries.

A detailed overview of the 2023 position, complete with the associated health impacts is shown in [Figure 20].

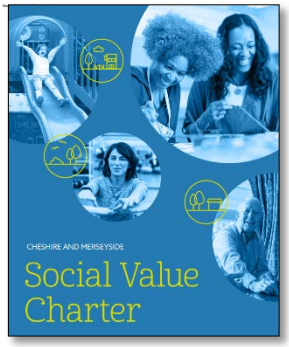
[6] Founded in 2007, the Stockholm Resilience Centre is a collaboration between Stockholm University and the Beijer Institute of Ecological Economics at the Royal Swedish Academy Sciences. They unite individuals globally to research, study and collaborate on the sustainability challenges facing humanity, such as climate change and biodiversity loss, emphasizing the importance for humanity to operate within the planetary boundaries.

Figure 21 - Intersection of planetary boundaries and human health.



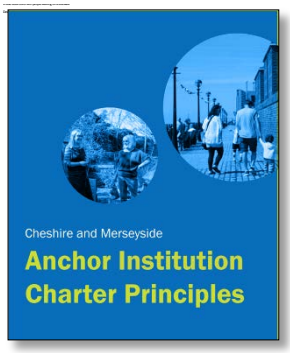


14. Social Value and Anchor Institutions



Cheshire and Merseyside has been a social value accelerator site since 2018 and has co-produced a Social Value Charter as well as developed a Social Value Award. Working closely with the Health and Wellbeing Board as well as the All Together Fairer (2022) Marmot work, we have also co-produced an anchor framework.

Public, private and voluntary sector organisations have signed up to these initiatives, delivering one approach. In addition, we have developed a systemwide set of themes, outcomes and measures (TOMs) to measure social value and demonstrate delivery, (2023).



Social Value

The definition of social value in Cheshire and Merseyside is

- The good that we can achieve within our communities related to environmental, economic and social factors.
- Our approach to building capabilities, strengths and assets and enabling people to live a ‘valued and dignified life’.
- An enabler for the growth of ‘social innovation’ helping to reduce avoidable inequalities - linked to the Marmot Principles.
- A requirement of the public sector as ‘Anchor Organisations’ to use their purchasing power to build capabilities, strengths & assets within communities, ensuring Cheshire & Merseyside is a great place to live and work.

History

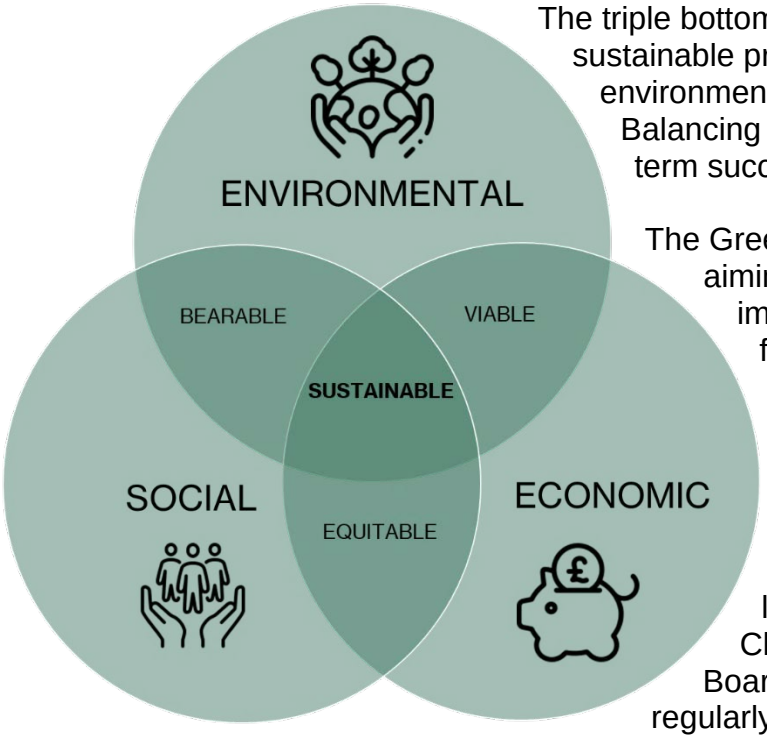
Cheshire and Merseyside became an NHS England ‘social value accelerator site’ in 2018. Led by the Health and Care Partnership and Cheshire East Council, the work was founded on the principles of co-production and community empowerment and led to the creation of our Social Value Charter and Social Value Award. In collaboration with system partners, we created our Cheshire and Merseyside TOMS (themes, outcomes and measures). The key themes (jobs, growth, society, environment and innovation) and their associated outcomes and measures are designed to enable the consistent and independent measurement and evaluation of social value delivery.

Progress

- 29 organisations have signed the Anchor Charter (8 organisations are in the process of signing).
- A C&M anchor logo has been created / shared with all Anchor signatories.
- The ICB website has been updated with an Anchor Institution Framework section to showcase great examples of anchor work.
- Anchor Assembly meetings held with signatories 12/24-months post signing.
- An Anchor dashboard has been created to track progress.

15. Governance

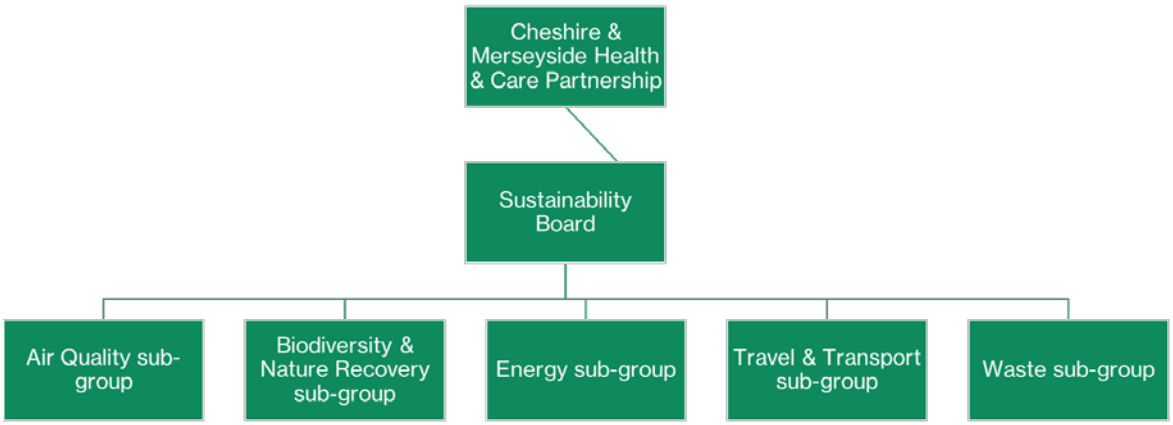
Our Green Plan is governed with a focus on transparency and accountability. All decisions and actions taken are clear and open to scrutiny and are underpinned by the concept of the triple bottom line.



The triple bottom line emphasizes the importance of sustainable practices that benefit society, protect the environment, and ensure economic viability. Balancing these elements is key to achieving long-term success and creating a positive impact.

The Green Plan has sustainability at its core, aiming to reduce environmental damage and improve health outcomes for current and future generations.

Transparency and Accountability: Clare Watson, Assistant Chief Executive Officer of NHS Cheshire and Merseyside is the Board level 'net zero lead' responsible for the Green Plan. The Cheshire and Merseyside Sustainability Board has oversight of delivery, reporting regularly into the Cheshire and Merseyside Health and Care Partnership. Progress is also reported on a quarterly basis to the North West region's Net Zero Board, which in turn reports to the national Greener NHS team.



Inclusive Decision-Making: We are committed to engaging stakeholders from diverse backgrounds in the decision-making process. This will ensure that our Green Plan reflects the needs and priorities of all members of our community.

Adaptability and Continuous Improvement: Our governance structure is designed to be flexible and adaptable. We will continuously review and improve our Green Plan based on feedback, new research, and evolving best practices in sustainability, undertaking and publishing a refresh of the plan every three years.

Version Control and Acknowledgements

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Document History:			
Date	**Version**	**Author**	**Notes**
21-Oct-2024	2.0 (draft 1)	Mandi Cragg	First draft submitted to Dave Sweeney / Becky Jones for review.
07-Nov-2024	2.0 (draft 2)	Mandi Cragg	Draft submitted to Sustainability Board.
10-Feb-2025	2.0 (draft 3)	Mandi Cragg	Sustainable food table removed. Tick/ mosquito entries in Adaptation sectioned shortened.
27-Mar-2025	2.0 (final)	Mandi Cragg	ICB Board approved Green Plan

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APPENDIX A – Green Plan Links / Climate Emergency Declarations

Local Authorities

Local Authority	Declared a Climate Emergency	Ambition	Information
Cheshire East	May 2019	Carbon neutral by 2027	https://www.cheshireeast.gov.uk/environment/carbon-neutral-council/aspx
Cheshire West and Chester	May 2019	Carbon neutral by 2030	https://www.westcheshireclimateplan.co.uk/
Halton	October 2019	Net zero by 2040	https://www3.halton.gov.uk/Pages/planning/climate/climate-change.aspx
Knowsley	January 2020	Net zero by 2040	https://www.knowsley.gov.uk/files/2023-11/Climate-Emergency-Action-Plan
Liverpool	2019	Net zero by 2030	https://liverpool.gov.uk/communities-and-safety/action-on-climate-change/
Liverpool City Region	-	Net zero by 2040	https://www.liverpoolcityregion-ca.gov.uk/climate-partnership
Sefton	July 2019	Net zero by 2030	https://www.sefton.gov.uk/climate
St Helens	July 2019	Net zero by 2040	https://netzero.sthelens.gov.uk/
Warrington	June 2019	Carbon neutral by 2030	https://cape.mysociety.org/councils/warrington-borough-council/
Wirral	July 2019	Net zero by 2030	https://www.wirral.gov.uk/climate-change-and-sustainability/climate-emergency

Note: *carbon neutral refers to balancing out the total amount of emissions through carbon capture, carbon offsets or credits. Net zero refers to reducing absolute emissions (by at least 90%) and only offsetting a maximum of 10%.*

NHS Trusts

Cheshire and Merseyside Trusts	
Alder Hey Children's NHS Foundation Trust	Mersey & West Lancashire Teaching Hospitals NHS Trust
Bridgewater Community Healthcare NHS Foundation Trust	Mid Cheshire Hospitals NHS Foundation Trust
Cheshire and Wirral Partnership NHS Foundation Trust	North West Ambulance Service NHS Trust
Countess of Chester Hospital NHS Foundation Trust	The Clatterbridge Cancer Centre NHS Foundation Trust
East Cheshire NHS Trust	The Walton Centre NHS Foundation Trust
Liverpool Heart and Chest Hospital NHS Foundation Trust	Warrington and Halton Teaching Hospitals NHS Foundation Trust
Liverpool University Hospitals NHS Foundation Trust	Wirral Community Health and Care NHS Foundation Trust
Liverpool Women's Hospital NHS Foundation Trust	Wirral University Hospitals NHS Foundation Trust
Mersey Care NHS Foundation Trust	