



Delivering greener, more sustainable and net zero mental health care

Guidance and
recommendations



This guidance and the accompanying evidence review and resources were commissioned by Greener NHS.

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Evidence review and resources

Available in a separate PDF, found [here](#)

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Foreword

This guidance on delivering greener, more sustainable and net zero mental health care could not have come at a more crucial time. The visible and tangible effects of climate change are now affecting us all in some way. It is therefore incumbent on each one of us and each organisation to take steps to tackle the climate crisis, including in our workplaces. We need to act now, for the planet's health, for our patients' health and for our own health. Within the NHS in England, momentum is building to meet the commitment to be net zero by 2045, and everyone involved in delivering mental health care can contribute to this.

Environmental sustainability has been one of the priorities of the Royal College of Psychiatrists for some years. We have approached this in three key areas: first, through our networks, by making sure that mental health services comply with environmental sustainability standards; second, through our membership, by supporting psychiatrists to make a difference via a learning and development programme on sustainability; and third, through our estate, by making sure that our buildings, food and waste management systems are environmentally friendly.

I was pleased to see that some of the recommendations in the guidance are things that the College is already doing, such as appointing sustainability scholars among psychiatry trainees

and establishing a net zero action group. But the College still has work to do, in promoting sustainable mental health care and in reaching our own pledge to be net zero by 2040 – we can do this by integrating environmental sustainability into the quality improvement work that we do, by providing further training opportunities on embedding nature-based approaches in mental health care, and by making a commitment to sustainability being a part of all staff roles within the College.

I can't pretend that meeting net zero targets will be easy – there will be multiple obstacles along the way. But as a College, we will do all that we can to support the implementation and uptake of this guidance within the psychiatric workforce and within multidisciplinary teams, and to also empower patients to challenge mental health services to be greener and more sustainable, and support them in their own sustainability journeys.

However, it's not just about meeting net zero targets; it's also about building sustainability into mental health care, and one of the main ways we can do this is by acting early so that people's symptoms don't get worse or by preventing mental health problems from developing in the first place.

Dr Lade Smith CBE, President of the Royal College of Psychiatrists

Our NHS staff and teams are committed to reducing the carbon impact of clinical services at every level of the health and care system. We recognise the power and influence each healthcare professional holds in helping us build a greener NHS for the good of health, now and for future generations.

This new guidance on delivering sustainable mental health care will empower and guide mental health professionals across the system to continue building a greener NHS, benefitting our patients, communities, and staff. As we move forward, the next critical step is the implementation of the recommendations within the guidance, marking our collective effort towards achieving a more sustainable health and care system. I would like to extend thanks from NHS England to the Royal College of Psychiatrists for leading the way on this vital piece of work.

**Chris Gormley, Acting Chief
Sustainability Officer, NHS
England**

1. A call to action: Why you should take the time to read this guidance

1.1 Climate change and the threat to health

Climate change poses a major threat to health and has direct and immediate consequences for all. The threat is not just to physical health – because of extreme heat, wildfires, poor air quality, flooding, spread of infectious diseases and threats to food and water security – but to mental health, too.

In 2021, the Royal College of Psychiatrists recognised the adverse impact of climate change on mental health and declared a [climate and ecological emergency](#). In the position statement [Our Planet's Climate and Ecological Emergency](#), the College outlined the mental health impacts, which are both direct and indirect.



For example:

- Flooding has a negative effect on mental health, with cases of depression, anxiety and post-traumatic stress disorder being high in flooded households
- Extreme heat is associated with increased use of mental health services, and even suicide; people with conditions such as schizophrenia, dementia and substance-use disorders are at increased risk of dying during heatwaves ([Page et al., 2012](#))
- Long-term exposure to polluted air is associated with depression, anxiety, psychosis and dementia
- Food insecurity caused by rising temperatures and severe weather events is linked to higher levels of psychological distress
- Increased rates of stress, post-traumatic stress disorder and anxiety have been seen in people who are forced to migrate due to climate change
- Historically disadvantaged groups are facing worse mental health outcomes due to climate change
- Witnessing climate events either first hand or through the media can have a psychological impact (termed 'eco distress', 'eco anxiety' or 'solastalgia').

Although this guidance focuses on providing greener, more sustainable^a and net zero^a mental health care rather than the impact of climate change on health, we highlight these effects because the health emergency caused by climate change has the potential to affect all of the people we care for, now and in the future. It is our duty to act with urgency to protect the environment. Providing greener, more sustainable and net zero mental health care will not only help to reduce carbon^a emissions, wider environmental impacts and, potentially, the harmful effects of climate change, but in so doing, further escalation of mental health problems might be prevented. It will also help us to deliver better quality and more efficient healthcare, as [sustainable practice is good practice](#).

On the next page is an infographic explaining the relationship between climate change and mental health.

Who should read this guidance?

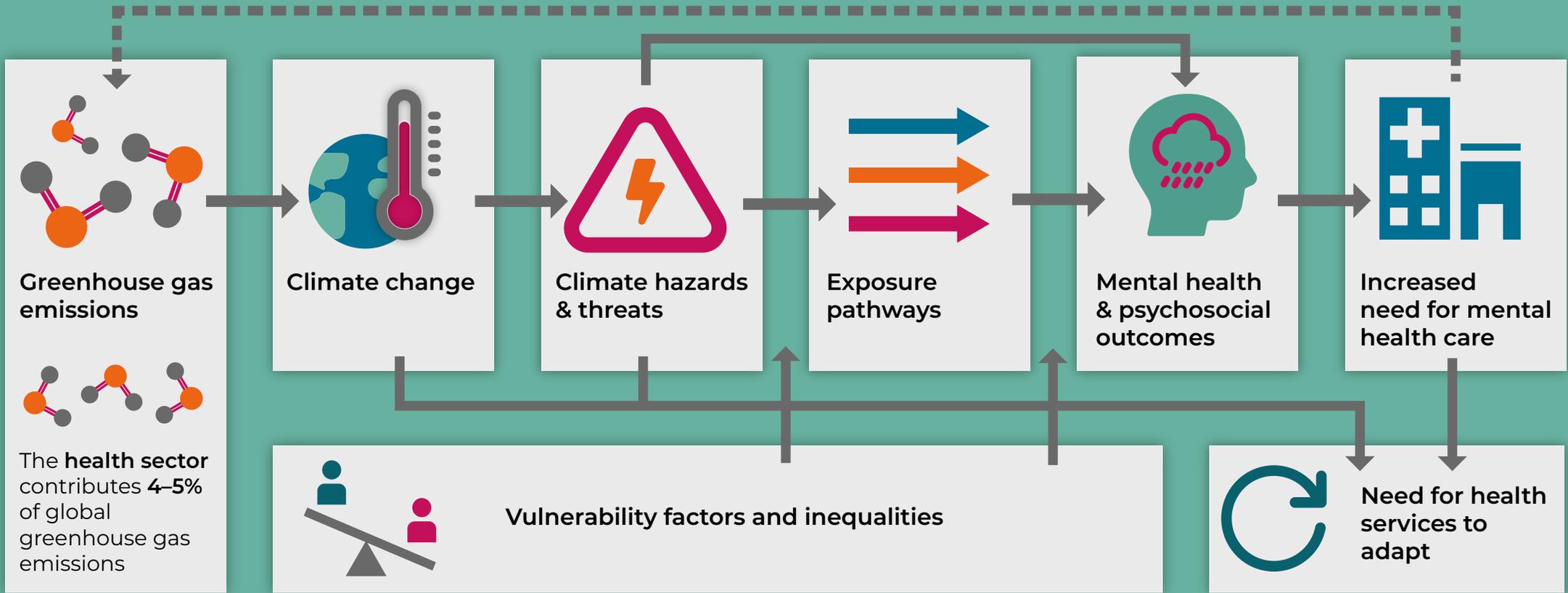
This guidance is for anyone providing mental health care, from frontline mental health practitioners and GPs to senior leaders. We all share the responsibility to reduce the environmental impact of healthcare as part of a wider effort to achieve sustainability and net zero.

An [accompanying document](#) contains the evidence review that underpins this guidance. It includes:

- the methods used to conduct the research
- the types of evidence we reviewed
- detailed findings from the evidence
- how the recommendations were generated
- an equality impact assessment
- additional resources and further reading.

^a 'Sustainable healthcare', 'net zero' and 'carbon' are defined for this guidance in the [Terminology](#) section.

The relationship between climate change and mental health



 **Examples of climate hazards and threats**

 **Examples of exposure pathways**

 **Examples of vulnerability factors and inequalities**

 **Examples of mental health and psychosocial outcomes**

 **Extreme heat**

 **Storms**

 **Environmental** e.g. air pollution, insufficient water and food insecurity

 **Health** e.g. physical disabilities, chronic diseases, and pre-existing mental health problems

 **Mental health conditions** e.g. anxiety, depression, PTSD, and suicidal behaviour

 **Floods**

 **Deforestation and land-use change**

 **Socioeconomic** e.g. loss of livelihood, property loss or damage, conflict and forced migration

 **Socioeconomic** e.g. poverty and precarious housing

 **Emerging concepts** (ecological grief, eco-anxiety, solastalgia)

 **Biodiversity loss and extinction**

 **Fire**

 **Psychosocial** e.g. awareness of or witnessing the effects of climate change

 **Geographic** e.g. conflict zones, remote communities and areas prone to extreme weather events

 **Alcohol and substance use problems**

 **Drought**

 **Ocean climate change and pollution**

 **Demographic** e.g. age, sex and ethnicity

 **Sociopolitical** e.g. displaced populations & discriminated groups

 **Other psychosocial outcomes** e.g. stress, helplessness, fear, grief and strained social relationships

Adapted from Mental health and Climate Change: Policy Brief. World Health Organization 2022

1.2 The role of NHS England in tackling climate change

Being responsible for four to five per cent of the country's carbon emissions, the NHS has a duty to act. In October 2020, NHS England became the world's first health system to commit to reaching net zero carbon emissions, as outlined in the [Delivering a 'Net Zero' National Health Service report](#), which has two targets:

- **To be net zero by 2040 for directly controlled emissions**
- **To be net zero by 2045 for emissions that the NHS influences.**



In line with these targets, NHS England is committed to halving the healthcare services' contribution to poor air quality within a decade, thereby reducing health inequalities and improving the health of communities now and in the future.

The [Health and Care Act 2022](#) now places a duty on NHS organisations to consider climate change in their operations, making the NHS the first healthcare system to embed net zero in legislation. NHS England's national programme, [Greener NHS](#), is held to account and reports to the NHS England board on progress; this is monitored using credible indicators and carbon dioxide equivalent (CO₂e)^b metrics.

^b 'CO₂e' is defined for this guidance in the [Terminology](#) section.

The Greener NHS programme developed four principles that are essential to low carbon care delivery models (see [Figure 1](#)). Adopting these principles can ensure a holistic approach to low carbon care delivery that spans the patient journey. From prevention ('Keeping people healthy') to providing efficient and appropriate care (delivering 'Right care, right place, right time') within low carbon care settings,

through low carbon treatment choices and ensuring this is achieved through system change (clinical leadership, systems, workforce) and embedded as 'business as usual'. This takes a clinical and person-centred approach to meeting net zero targets and, in doing so, aims to deliver evidence-based low carbon mental healthcare to all when needed.

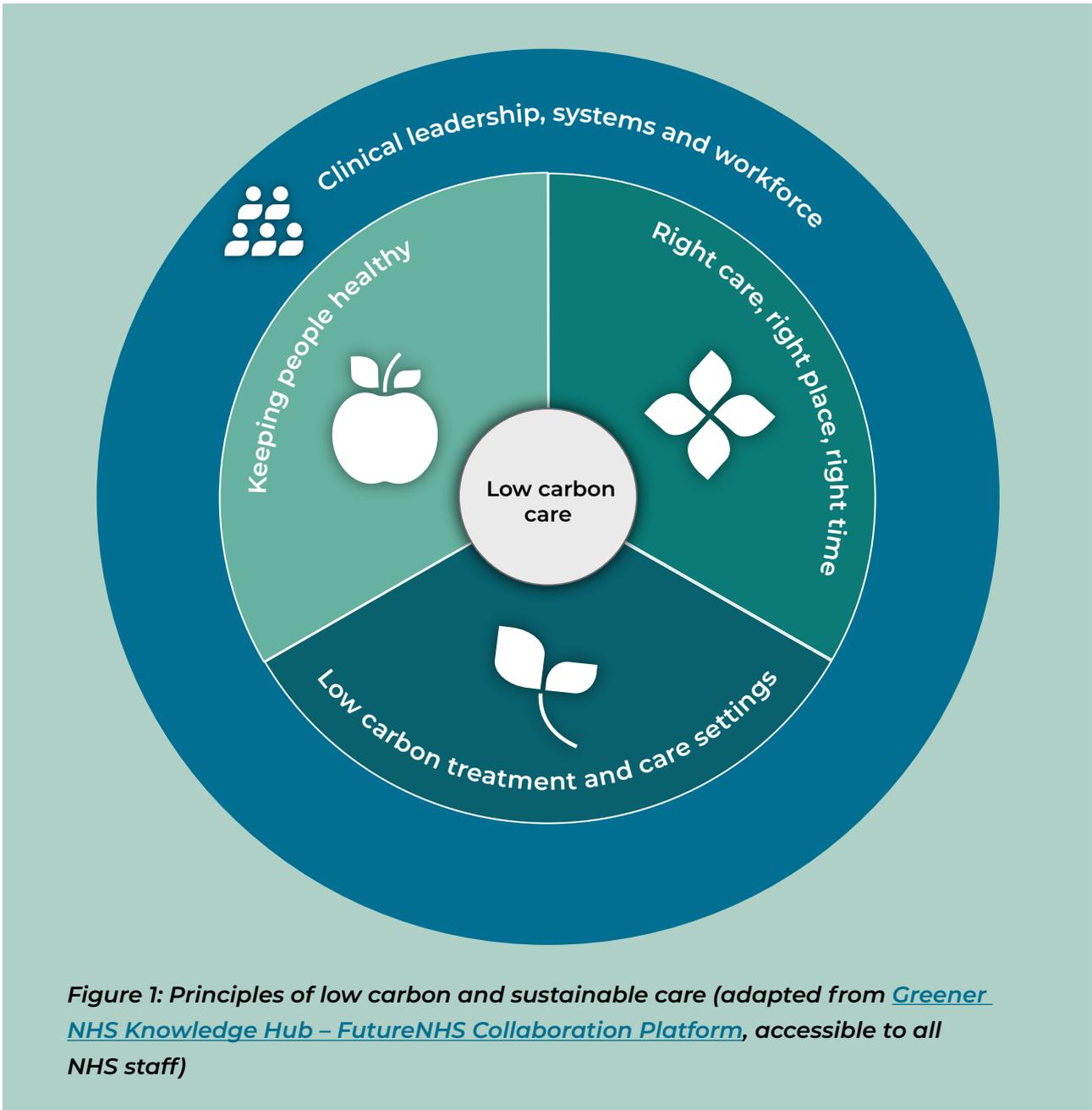


Figure 1: Principles of low carbon and sustainable care (adapted from [Greener NHS Knowledge Hub – FutureNHS Collaboration Platform](#), accessible to all NHS staff)

All organisations, trusts, services, managers and frontline-line staff members have a role to play in the net zero agenda. The reduction of direct and indirect carbon emissions relies on NHS employees having the tools and direction to lead the transition to net zero healthcare. NHS suppliers and business partners also play a critical role in the NHS decarbonisation effort, as over 60 per cent of the NHS emissions are embedded in its supply chain, through the products and services that the NHS buys. Achieving the 2045 net zero target (for the emissions that the NHS influences) will require the support of all suppliers and alignment with the [NHS net zero supplier roadmap](#).

The delivery of NHS mental health care contributes significantly to the carbon footprint^c of the NHS. Access to mental health services has increased to 4.8 million people in 2022/23 (around 1 million more than in 2016/17) ([NHS Mental Health Dashboard, 2023](#)). In addition, the establishment of new services and transformed models of care mean it is more important than ever to address the carbon impact^c of mental health care delivery.

Achieving a net zero mental health care system poses a significant challenge and relies on services to work collaboratively to effect change. Staff, services and those in decision-making positions will benefit from guidance to help them to work towards the net zero targets. Therefore, this guidance and the accompanying evidence

review and resources document were commissioned by Greener NHS to provide clear and practical recommendations and examples of how to deliver greener, more sustainable and net zero mental healthcare. The work is supported by the NHS England Mental Health team as key stakeholders.

1.3 Aims and focus of this guidance

This guidance aims to support the delivery of greener, more sustainable and net zero mental health care by providing evidence-based recommendations. These recommendations, along with examples of innovative approaches and interventions, can help services work towards their sustainability and carbon reduction targets.

In particular, this guidance shows how decision-makers and leaders within services and organisations can meaningfully support staff to progress towards those targets. There are also online educational materials, including webinars and training videos, to ensure that all staff involved in delivering mental health care have access to further resources that support the delivery of greener, more sustainable and net zero mental health care.

^c 'Carbon footprint' and 'carbon impact' are defined for this guidance in the [Terminology](#) section.

Preventing mental ill health, and thereby reducing the need for intensive interventions, forms a huge part of the sustainable health care agenda and is, ultimately, the best way to reduce the carbon impact of health systems. Additionally, a focus on carbon reduction in the mental health care system allows for a sustainable approach focused on strategies that target sources of emissions, both directly and indirectly, to reduce pollutive practices.

This guidance focuses primarily on carbon reduction rather than on 'preventative' care, but the principle of 'Keeping people healthy' is held throughout as a vital component of working towards a net zero health system.

It should be noted that while some of the evidence underpinning this guidance is from the NHS in England only, the principles and recommendations are applicable across the UK and in countries with similar healthcare systems.

1.4 How this guidance was developed

The National Collaborating Centre for Mental Health (NCCMH) and the College Centre for Quality Improvement (CCQI) at the Royal College of Psychiatrists developed this guidance and the accompanying educational materials.

The NCCMH and CCQI convened an Expert Reference Group (ERG), comprising clinicians and healthcare professionals with expertise in providing lower carbon care, and people with lived experience of mental health services. The ERG met at key stages in this guidance's development to advise on the methods used, the interpretation of the identified evidence, and the formulation of the recommendations and educational resources.

The NCCMH led on the research and development of the guidance, and the CCQI led on the development of the online educational resources.

To produce this guidance, the NCCMH carried out a range of research activities in the development of the guidance and recommendations. A table outlining the terms and categories that were used to structure our findings across the research activities is provided in [Evidence Review and Resources: Section 1](#).

The NCCMH research activities were:



- A review of the literature on net zero mental health interventions in response to the question: 'What interventions, approaches and initiatives can be used to work towards achieving net zero mental health services in the UK?' (see also [Evidence Review: Section 2](#))
- Put out a call for evidence of net zero, sustainability and prevention interventions from NHS Trusts and services (see also [Evidence Review: Section 3](#))
- A review of NHS mental health Green Plans (see also [Evidence Review: Section 4](#)).

The NCCMH have included in the guidance:

- Findings from the reviewed evidence
- Recommended actions that organisations (including NHS England, Royal Medical Colleges, NHS trust leads, mental health service leads and clinicians) can take to deliver greener, more sustainable and net zero mental health care in England
- Equality considerations alongside recommendations for action.

The CCQI online educational materials include:



- Webinars that present good practice examples and provide support for healthcare professionals, service leads and decision-makers to implement the recommendations for action
- Training videos to support the delivery of greener, more sustainable and net zero mental health care to the wider workforce
- An online learning and networking community provided via a Royal College of Psychiatrists' platform that can be accessed by all services across England to share innovative practice.

2. The carbon impact of mental health care

2.1 What we know about the carbon impact of mental health care

Mental health care is responsible for a large percentage of the NHS carbon footprint. The greenhouse gas emissions of clinical activity in secondary mental health care are reported to contribute around 1,510 kilotonnes (kt) of CO₂e, six per cent of total NHS emissions (see [Table 1](#), and see [Figure 2](#) for mental health trust emissions).

Table 1: Total greenhouse gas emissions by clinical activity in the NHS (source: [Tennison et al, 2021](#))

Clinical activity	kt CO ₂ e
Acute	12,960
Primary care	5,770
Non-clinical support activities	3,010
Mental health	1,510
Community	1,280
Ambulance	510
Total	25,040

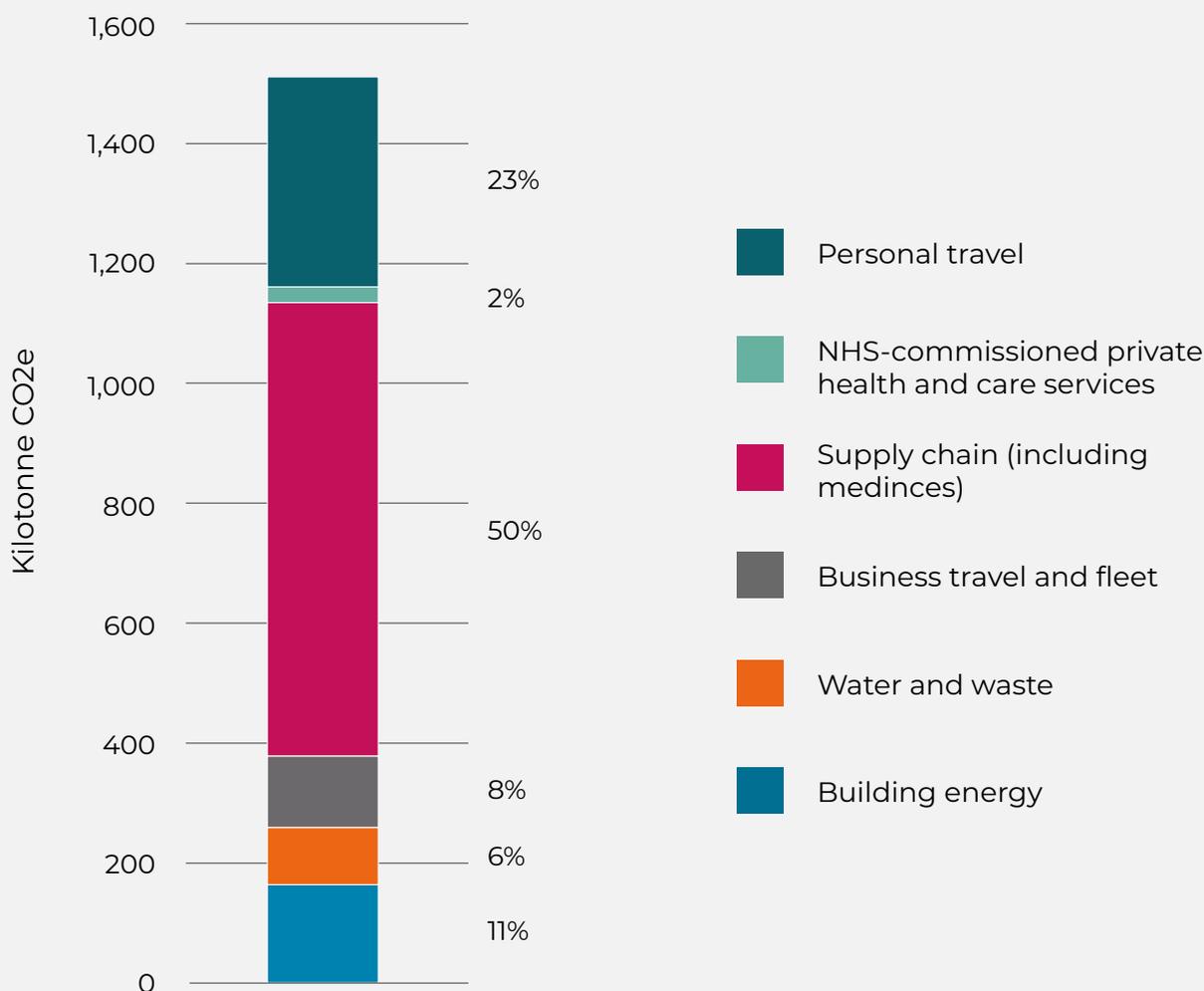


Figure 2: Percentage and kilotonne breakdown of mental health trust emissions (developed using data from [Tennison et al., 2021](#))

Measuring the carbon emissions of mental health services

The carbon impact of the whole mental health care pathway, including primary and tertiary care as well as secondary care, is not well-understood. This is partly due to the structure of mental health care, the complexity of which makes it challenging to accurately attribute emissions to specific areas of service delivery. There is also substantial crossover between mental health and other healthcare (such as emergency services, primary care and social services), and how mental health services operate alongside other areas of health and social care varies between geographical localities. Altogether, it is difficult to calculate the true carbon footprint of mental health care.

Models can be used to simulate the carbon footprint of hospitals, for example, by incorporating a range of activities that contribute to it (Pollard et al., 2013).

These models can be applied to other areas of clinical care, but the picture is complex. Previous studies have estimated the carbon footprint of different areas of mental health care. For example, one study reported the carbon footprint per NHS mental health outpatient appointment as 59 kg CO₂e and per mental health inpatient bed day as 97 kg CO₂e on average (Maughn et al., 2016).

In our call for evidence, we asked services to submit information on how they measure reduction in carbon emissions, so that we could derive examples of positive practice that outline where changes could be made to high carbon areas. Most evidence submissions outlined interventions or approaches that were in their early stages, but two services described carbon reductions that they had achieved (Table 2; more information about the call for evidence is provided in Evidence Review and Resources: Section 3).

Table 2: Submissions to the call for evidence that included a measure of carbon impact

NHS trust and service	Carbon reductions
Midlands Partnership University NHS Foundation Trust – Green Psychosis Pathway Clinic	Reduced the Trust’s carbon footprint by 40.6 kg CO ₂ e per month. This was largely due to a reduction in the average miles driven by staff and patients to collect medicines, from 28 to 4 miles.
South London and Maudsley NHS Foundation Trust – The Orchards	It is calculated that 1 acre (0.4 hectares) of apple trees will extract around 15 tonnes of CO ₂ from the air each year. Based on this calculation, The Orchards project is estimated to sequester around 30 tonnes of CO ₂ per year.

Exploring the carbon impact of the mental health care pathway

To explore the carbon impact of the mental health care pathway, we undertook an exercise with the ERG to map the areas of mental health care considered to be particularly carbon intensive in a carbon mapping workshop. Activities in areas of care that are likely to be contributors of high carbon emissions were also explored. The ERG were then invited to discuss the areas of mental healthcare that were considered vital to address so that net zero and sustainability goals could be reached. The exercise was not intended to provide a comprehensive account of the true carbon impact across the pathway, which would require more extensive research and access to data on carbon emissions.

Members of the ERG were asked to share their expertise on the carbon impact across primary, secondary and tertiary mental health settings and services.

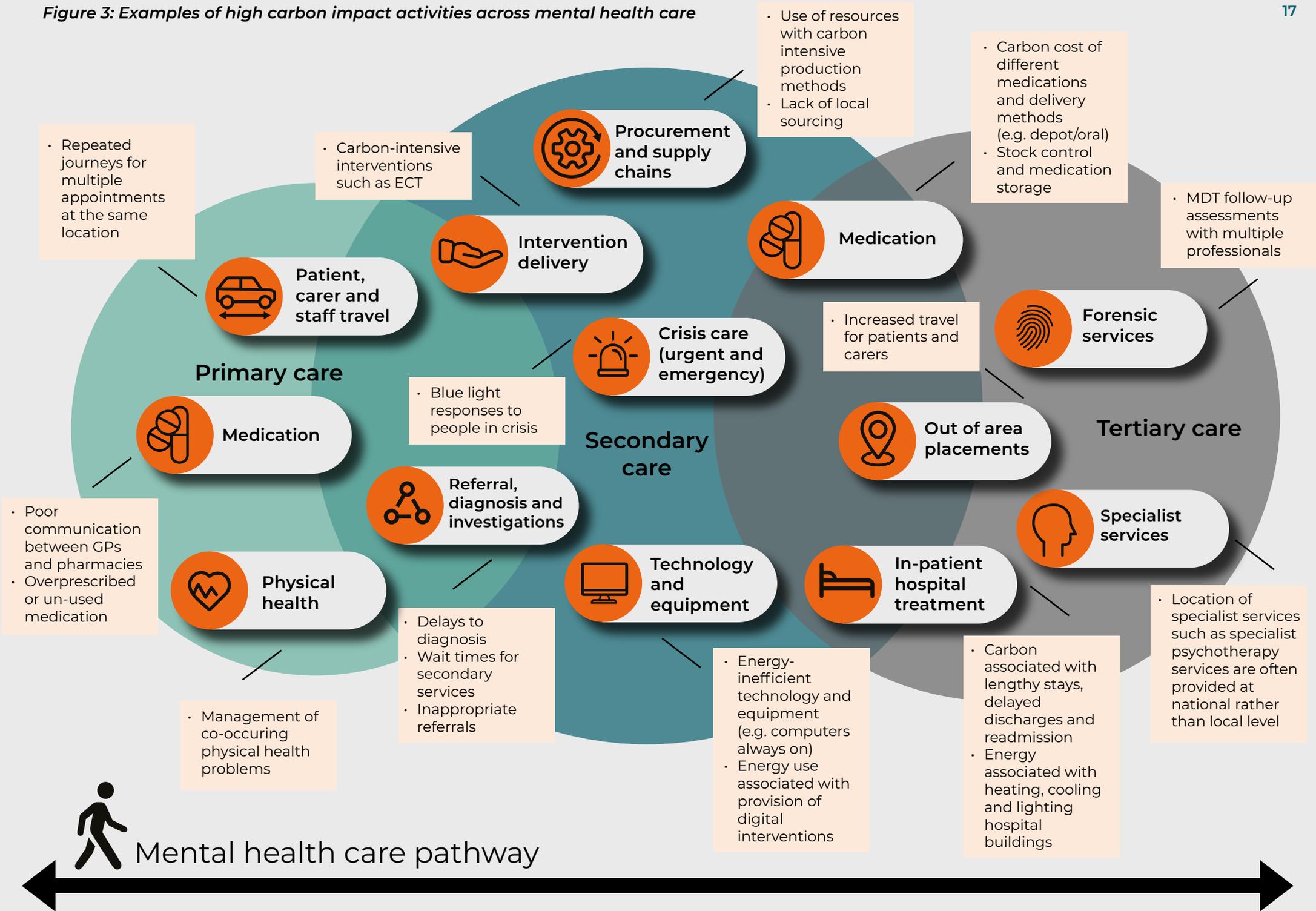
Some of the key outputs from the workshop were:

- Secondary care was considered to have a particularly high carbon impact
- The high carbon impact of acute inpatient treatment was attributed not only to the carbon costs of running hospital services (such as the energy use of the building) but also to people's length of stay on inpatient wards
- The bottleneck in transition from inpatient to community care was a particular area of concern
- The impact of preventive community support (in that a lack of adequate health and social care outside of hospital indirectly influences the carbon footprint of acute care, for example by increasing the likelihood of readmission)
- Several factors spanned care delivery, with activities to do with medication and prescribing practices, building energy and patient or staff travel as examples of those considered to impact the carbon footprint of care in similar ways across the mental health care pathway
- Out-of-area placements are particularly carbon and resource inefficient (in addition to other issues associated with out-of-area placements).

[Figure 3](#) shows the outcomes from the exercise, and how they affect and overlap in primary, secondary and tertiary care.

Further detail on the carbon mapping workshop is provided in [Evidence Review and Resources: Section 5](#).

Figure 3: Examples of high carbon impact activities across mental health care



3. A summary of our research findings

The four principles of low carbon care (developed by Greener NHS) were used to structure the findings from our research:



[Table 3](#) shows how the interventions and approaches identified in this research were mapped using these principles. The findings are derived from:

- The literature review: published literature (systematic reviews: n=13, 14 publications; non-systematic reviews with mental health sector specific strategies: n=2; primary studies: n=48, 51 publications);^d recommended publications and reports from the ERG (n=4)
- Submissions to the call for evidence (n=16)
- A review of 52 Green Plans provided by mental health trusts.

A full summary of the evidence, including detailed methods and findings from each of the research approaches used in this work, is provided in the **Evidence Review and Resources: Section 2**, and the full narrative summary of research findings is provided in **Section 6**. Resources and further reading can also be found in that document, in **Section 7**.

^d Whenever a study was included in more than publication, extraction was combined so that data from each study was only extracted once.

Table 3: Mapping the interventions or approaches to the four principles of low carbon care identified in the research

Low carbon care principles	Categories of interventions/approaches
<p>Keeping people healthy*</p> 	<ul style="list-style-type: none"> ● Access to green spaces for outside activities that promote mental and physical wellbeing ● Implementing sustainable models of care, such as those that improve access to services (e.g., implementing new primary care frameworks) and that reduce preventable hospital admissions ● Keeping people healthy by responding to health needs that occur as a result of climate change^e ● Food and nutrition, such as strategies to include more sustainable food, increasing vegetarian and vegan options and offering menus that promote and support healthier eating.
<p>Right care, right place, right time**</p> 	<ul style="list-style-type: none"> ● Measures to improve the efficiency of care delivery, including changes to staffing structures and ways of working ● Delivering treatment in alternative formats, including using digital technologies (remote care, video and telehealth) ● Green treatment alternatives including nature-based interventions, such as walking groups, outdoors mindfulness and therapeutic communities ● Alternative patient transport and transfer services, such as using low carbon vehicles in emergency care when assessing people in crisis ● Preventing unnecessary use of the care pathway, including using pathways that are less resource-intensive).

^e The health impacts of climate change and responses to them were not in the core scope of this work, so recommendations on health impacts have not been derived. However, findings are reported here because several Green Plans discussed plans to protect vulnerable groups and respond to climate-related health issues.

Low carbon care principles

Categories of interventions/approaches

Low carbon treatment and care settings



- **Sustainable procurement practices and supply chains**
- **Interventions to reduce energy consumption** (such as electricity or gas consumption)
- **Approaches to promoting sustainable staff and patient travel** (such as promoting walking or cycling to work and using public transport) and reducing travel (such as remote working and collaborating with partner agencies to reduce the number of appointments)
- **Waste reduction** (including medications waste, food waste and single-use product reduction)
- **Lower carbon interventions** (including nature-based green interventions, as above)
- **Improved medication or prescription practices** (such as de-prescribing).

Clinical leadership, systems and workforce



- **Training and education** for healthcare providers and medical students
- **Visible leadership from above** ('top-down' leadership)
- **Empowering nurses and other healthcare professionals** to take on net zero leadership roles (e.g., by giving sustainability and net zero responsibilities to healthcare professionals)
- **New and dedicated staff roles focused on net zero** and sustainability, including a sustainability lead
- **Changes to governance structures, policies and standards**
- **Measuring and reporting on carbon emissions**
- **Methods to implement carbon reduction measures**, such as using 'carbon exchange' programmes †.

* Significant crossover with 'Right care, right place, right time'.

** Significant crossover with 'Low carbon treatment and care settings'.

† Carbon exchange programmes provide financial or other incentives for organisations to reduce carbon emissions

4. Recommendations for delivering greener, more sustainable and net zero mental health care

This section of the guidance contains:

1. **Essential actions** ([Section 4.1](#)) that underpin the implementation of the recommendations to support the delivery of greener, more sustainable and net zero mental health care in line with the four principles of low carbon care. These are as vital as the recommendations that follow this section. They were developed from the research findings (methods described in [Section 3](#)).
2. **Recommendations** for how to achieve a greener, more sustainable and lower carbon mental health system ([Section 4.2](#)), aimed at the different roles and organisations who hold responsibility for delivering greener, more sustainable and net zero mental health care, from staff to policymakers. It was important for us to include recommendations for system leads, given the support and investment that is required from them to enable and empower staff and clinicians to successfully incorporate low carbon and sustainable practices into their work

3. **Recommendations for areas and methods of future research**, derived from studies identified by the literature review and by the ERG ([Section 4.3](#)).

As well as deriving recommendations and underpinning essential actions from published literature, service examples and Green Plans, the ERG were asked to provide any recommendations or essential actions based on gaps they identified in research findings.

4.1 Essential actions that underpin the recommendations

The following actions are essential to achieving greener, more sustainable and net zero mental health care in line with the four principles of low carbon care. These actions were derived from

the recommendation development process^f (also see **Evidence Review and Resources: Section 8**) and underpin the recommendations.



Actions in line with the 'Keeping people healthy' principle

- Addressing the social determinants of health, with a focus on illness prevention, should be a key stage in the journey to net zero health care; determinants include housing, poverty, isolation and employment
- Making every contact count, to reduce the risk of mental health problems worsening, or preventable problems occurring, as a way to reduce the need for additional healthcare appointments
- Increasing awareness of mental health issues and how to support mental wellbeing in communities, schools and workplaces.
- Promoting and collaborating with community services that work to prevent or mitigate mental health problems.



Actions in line with the 'Right care, right place, right time' principle

- Empowering service users to take a greater role in planning their care, to maximise uptake of effective interventions and avoid those unlikely to be effective or engaged with
- Designing and developing care pathways that have consideration of the environmental impact, including care closer to home and joined-up working with partner agencies.

^f The actions are listed according to the low carbon care principles and do not necessarily appear in order of priority.



Actions in line with the 'Lower carbon treatment and care settings' principle

- Using sustainability and net zero practices when planning and delivering care, by considering those practices in all initial care planning meetings and subsequent reviews
- Always delivering care using evidence-based treatments, to optimise outcomes for patients and reduce the need for further treatment, lessening the carbon impact of mental health services and benefitting individuals and wider society.



Actions in line with the 'Clinical leadership, systems and workforce' principle

- Embedding sustainability considerations in all procurement practices and routinely undertaking supply chain mapping to continually understand the impact of supply chains on carbon emissions and identify changes that can be implemented
- Ensuring mandatory training on sustainability and net zero practices is delivered across all mental health service professions
- Providing regular feedback on energy use at team, service and trust levels (monthly, if feasible), such as through the use of an energy dashboard. This data should be used to inform action plans at all three levels that prioritise energy reduction and renewable energy sources. For increased transparency, consider publicly reporting this information by NHS services.
- Fostering an open, learning culture where ideas for sustainable innovation can be heard and implementation can be supported
- Supporting the dissemination and scaling up of learning from successful projects (e.g., using peer networks, publicly celebrating successes and developing systems to roll out successful practices to other areas) to accelerate sustainable transformation
- Auditing of NHS Mental Health Green Plans to assess the uptake and effectiveness of those plans.

4.2 Recommendations

[Table 4](#) presents the 33 recommendations, categorised under ten overarching recommendation areas. These recommendations are aimed at:

- **Policymakers** (including NHS England and the Greener NHS programme)
- **Professional bodies** (including Medical Royal Colleges)
- **System leads** (including integrated care boards and regional leads)
- **Service leads** (including trust chief executives, clinical leads, service managers, team leads and sustainability leads)
- **Staff, professionals and clinicians working in mental health services** (including frontline staff and those who work alongside them, such as pharmacists and GPs).

The recommendations in [Table 4](#) are in order of priority according to Greener NHS policy areas and what is known about the relative size of the NHS carbon footprint of each area (including supply chains, medication, estates, transport, food and workforce).

Next to the recommendations, we have indicated the roles and bodies that the recommendations are targeted at or the responsibility of, in alphabetical order.

All of the recommendations were reviewed by the NCCMH Equality Advisory Group in an Equality Impact Assessment. Equality Impact Considerations were discussed and recorded for each recommendation. Detail on the method used to develop recommendations and on the Equality Impact Assessment are provided in the [Evidence Review and Resources: Section 8](#) and [Section 9](#), respectively. The following symbols are used alongside the recommendations to indicate:



an Equality Impact Consideration was raised for this recommendation



no Equality Impact Consideration were raised for this recommendation.

Table 4: Recommendations for delivering greener, more sustainable and net zero mental health care

Recommendations	Targeted at/ responsibility of
<div style="display: flex; align-items: center;"> <div> <p>Recommendation area 1: Embrace circular economy approaches to mental healthcare procurement and ensure alignment to the NHS supplier roadmap</p> <p><i>Greener NHS policy area: Supply chain</i></p> </div> </div>	
<p>1.1) Use a ‘green procurement scheme’ (e.g., by adding sustainability as a factor on the scoring system when choosing which supply companies to use), applying the NHS net zero supplier roadmap to ensure net zero and social value are embedded into procurement activities</p>	<ul style="list-style-type: none"> Service leads System leads
<p>1.2) Reduce the use of single-use medical and healthcare products and switch to reusable items</p>	<ul style="list-style-type: none"> Clinicians/ professionals/ staff Service leads
<p>1.3) Reuse resources such as technology equipment whenever possible instead of procuring new equipment (e.g., Warp it reuse recycle services)</p>	
<div style="display: flex; align-items: center;"> <div> <p>Recommendation area 2: Reduce the emissions associated with medicines, from embedding net zero into medicines procurement through to more sustainable prescribing practices and reducing medicine waste</p> <p><i>Greener NHS policy area: Medicines</i></p> </div> </div>	
<p>2.1) Engage in sustainable prescribing, adhering to principles such as lowest dose or increasing the time between administering doses to the maximum interval, best practice on how and when to stop medications and reducing polypharmacy</p> <p>Note: Use of a ‘green procurement scheme’ and the NHS net zero supplier roadmap (as in recommendation 1.1) should also be applied to the procurement of medicines</p>	<ul style="list-style-type: none"> Clinicians/ professionals/ staff Service leads

= No Equality Impact Considerations were raised for this recommendation



Recommendation area 3: Improve energy efficiency of mental health estates and facilities including recycling and waste management

Greener NHS policy area: Estates and facilities

- | | |
|--|---|
| <p>3.1)  Switch to using energy efficient resources and appliances across mental health service buildings (such as energy-saving lightbulbs; combined heat and power systems; energy-saving taps; green IT systems)</p> | <ul style="list-style-type: none"> • Policymakers • System leads |
| <p>3.2)  Review changes to mental health service buildings that could be made to allow for natural ventilation</p> | |
| <p>3.3)  Support and advocate for investment in on-site renewable energy generation (such as the installation of solar panelling on mental health service buildings)</p> | |
| <p>3.4)  Set up improved recycling and waste management practices (e.g., by using integrated waste management systems, segregating waste, composting and incineration)</p> | <ul style="list-style-type: none"> • Clinicians/ professionals/ staff • Service leads • System leads |



Recommendation area 4: Enable the adoption of net zero, sustainable and efficient travel practices within mental health care

Greener NHS policy area: Travel and transport

- | | |
|--|--|
| <p>4.1) Use active travel (e.g., cycling and walking) as much as possible for journeys to and beyond places of work, and public transport where the former is not possible or practical</p> | <ul style="list-style-type: none"> • Clinicians/ professionals/ staff |
| <p> Consider availability and accessibility of public transport, which varies between geographical locations especially urban and rural areas. Using active travel or public transport may not be possible or practical for some staff to work safely and efficiently</p> | |



No Equality Impact Considerations were raised for this recommendation



Equality Impact Considerations

4.2) Provide transport (such as shuttle buses) for staff and patients to travel between hospital/ health service sites



Consider accessibility for people with physical disabilities

- Policymakers
- Service leads
- System leads

4.3) Switch to using electric service vehicles and fleet (such as patient transport vehicles or vehicles used for assessment in crisis situations)



4.4) Provide alternative transport incentives for staff (such as cycle schemes, bike storage, car-sharing etc.)



Consider the practicalities of alternative transport options, which vary between geographical locations, especially between urban and rural areas. Using active travel may not be possible or practical for some staff to work safely and efficiently



Recommendation area 5: Reduce travel miles related to mental health care service delivery

Greener NHS policy area: Travel and transport or

5.1) Provide the option of remote care delivery for patients using digital methods, where safe and appropriate



Consider how digital poverty affects access to the resources to engage in remote care for some patients. Digital literacy should also be considered for both staff and patients to ensure that access and engagement is not hindered by the provision of remote care in place of face-face-treatment. Face-to-face treatment should be provided as an option and it's benefits should not be disregarded in favour of remote care

- Service leads

5.2) Support pharmacy-led medications reviews to be held remotely or online



Consider digital poverty and digital literacy, as above

- Clinicians/ professionals/ staff
- Service leads



No Equality Impact Considerations were raised for this recommendation



Equality Impact Considerations

5.3) Seek to replace a proportion of in-person staff meetings with online meetings where possible, safe and appropriate

- Clinicians/ professionals/ staff
- Service leads



Consider digital literacy of staff, with access to appropriate training as required

5.4) Re-organise staff working structures to minimise time spent travelling for work



Consider individual life and family circumstances, which can be impacted by changes to working structures so changes should be made in consultation with staff to account for factors such as caring responsibilities, implications of shift work and so on



Recommendation area 6: Provide lower carbon food choices for patients and staff

Greener NHS policy area: Food

6.1) Review menus to make them healthier (e.g., by diversifying protein sources and offering vegan and vegetarian options) and ensure locally sourced food and produce is used as much as possible

- Service leads
- System leads



Cultural and individual dietary needs should be met for patients and staff



Recommendation area 7: Improve efficiency and quality of patient care through sustainability, leveraging existing tools and methodologies (e.g., SusQI)

*Greener NHS policy area: Service improvement or *Efficiency*

7.1) Establish methods of care delivery that avoid unnecessarily access into resource-intensive services (such as prevention of transfer to a place of safety for assessment)

- Policymakers
- System leads



Consider the accessibility of the services provided as alternatives to traditional methods. Services should be careful not to compromise patient accessibility when providing alternative forms of treatment and assessment



No Equality Impact Considerations were raised for this recommendation



Equality Impact Considerations

	<p>7.2) Standardise demonstrating the sustainability benefit of Quality Improvement (QI) projects using sustainability impact assessments. Use SusQI as part of transformation plans and integrate sustainability into QI work and support frontline staff to embed sustainable QI into their practices</p>	<ul style="list-style-type: none"> • Policymakers • Professional bodies • Service leads • System leads
	<p>7.3) Work collaboratively alongside social services and other services (including the voluntary, community and social enterprise sector) involved in people’s care to reduce the need for patients and professionals to attend multiple appointments*</p>	<ul style="list-style-type: none"> • Service leads • System leads
	<p>7.4) Use tools and databases to measure the carbon impact of service practices where available, and support the improvement and further development of further tools to address existing gap</p>	<ul style="list-style-type: none"> • System leads
<div style="background-color: #006666; color: white; padding: 10px;">  <h2 style="margin: 0;">Recommendation area 8: Promote nature-based mental health care through increasing access to green spaces and social prescribing practices</h2> <p style="margin: 0;"><i>Greener NHS policy area: Nature-based interventions</i></p> </div>		
	<p>8.1) Support patients to engage safely in activities outdoors as part of their care and treatment (for example, walking or gardening groups delivered as part of inpatient or community mental health treatment)</p> <p>Consider the accessibility needs of patients with physical disabilities so that engagement in outdoor activities is made possible for all</p>	<ul style="list-style-type: none"> • Clinicians/ professionals/ staff • Service leads



No Equality Impact Considerations were raised for this recommendation



Equality Impact Considerations

<p>8.2)</p> 	<p>Work closely with community services to embed social prescribing into practice and encourage the incorporation of social, community and outdoors activities (such as use of green spaces), into the delivery of routine care</p> <p>Consider the availability of socially prescribed activities, which are likely to vary between geographical locations, so staff’s ability to embed these approaches will depend on what is available locally for patients</p>	<ul style="list-style-type: none"> • System leads
<p>8.3)</p> 	<p>Map the availability of green spaces and nature-based interventions by area to ensure clinicians have easy access to details of nature-based interventions available to patients locally</p>	<ul style="list-style-type: none"> • Service leads • System leads
<p>8.4)</p> 	<p>Provide training to all clinical staff on how to integrate and embed nature-based approaches to mental health care into practice</p> <p>Consider the availability of nature-based approaches, which are likely to vary between geographical locations, so staff’s ability to embed these approaches will depend on what is available locally for patients</p>	<ul style="list-style-type: none"> • Professional bodies • Service leads
<div style="background-color: #006666; color: white; padding: 10px;">  <h2 style="margin: 0;">Recommendation area 9: Develop leadership and the workforce learning and development infrastructure to support the transition to net zero mental health</h2> <p style="margin: 0;"><i>Greener NHS policy area: Workforce</i></p> </div>		
<p>9.1)</p> 	<p>Appoint a net zero board-level lead, responsible for delivery of the organisation’s Green Plan, and ensure these responsibilities also sit with senior leadership staff</p>	<ul style="list-style-type: none"> • System leads
<p>9.2)</p> 	<p>Create dedicated positions for healthcare workers focused on sustainability and reducing emissions</p>	<ul style="list-style-type: none"> • Policymakers • System leads
<p>9.3)</p> 	<p>Put incentives in place to encourage staff to engage in sustainability and net zero efforts at work, and provide protected time for staff to do this (when not impacting on service capacity)</p>	<ul style="list-style-type: none"> • Service leads



No Equality Impact Considerations were raised for this recommendation



Equality Impact Considerations



Recommendation area 10: Build a sustainable and responsible mental health workforce focused on looking towards the future

Greener NHS policy area: Workforce

10.1)  Bring sustainability and net zero learning, knowledge, and activities to the workplace	<ul style="list-style-type: none">• Clinicians/ professionals/ staff
10.2)  Engage in campaigns to promote lower carbon practices in services, such as holding 'sustainability weeks' for staff and distributing 'green newsletters' to staff	<ul style="list-style-type: none">• Service leads
10.3)  Create climate and sustainability networks within trusts (or join existing networks) that encourage staff to champion environmental awareness and challenge unsustainable practices within teams	<ul style="list-style-type: none">• Clinicians/ professionals/ staff• Service leads
10.4)  Build net zero and sustainability principles into all staff roles and responsibilities at all stages of the employee lifecycle (e.g., in attraction and recruitment to roles, induction, training, progression)	<ul style="list-style-type: none">• Policymakers• Professional bodies• Service leads
10.5)  Encourage net zero projects in staff inductions and include net zero projects in staff appraisals	<ul style="list-style-type: none">• Service leads



No Equality Impact Considerations were raised for this recommendation

4.3 Recommendations for future research

The recommendations in [Table 5](#) are for areas and methods of research that would be useful to carry out in future. They have been derived from studies identified by the literature review, as well as from the advice of the ERG.



Table 5: Recommendations for future research

Recommendations	Detail
Evaluate the carbon impact of (a) illness prevention and (b) health promotion practices	Dedicated research should explore the impact of illness prevention and health promotion on the carbon impact of the mental health care pathway. Research should explore both the carbon and social return on investment. Service-use prevention and keeping people well are vital to achieving net zero care, but illness prevention was out of scope of our literature review
Evaluate the effectiveness of green/nature-based interventions	While there is some evidence for the effectiveness of some green interventions on health, the full extent of these benefits is unknown. Evaluation of effectiveness consider: <ul style="list-style-type: none"> ● How nature-based interventions can be meaningfully incorporated into routine care and treatment ● The carbon reduction associated with the interventions, e.g., potential for reduction in bed days per inpatient
As part of the evaluation of remote care, evaluate the carbon impact of using remote methods as alternatives to in-person treatment	It is important to understand the energy or carbon saved by reducing travel versus the energy or carbon used to run the technology
Evaluate the effectiveness of routine monitoring and feedback on the carbon impact of greener, more sustainable and net zero approaches	This is important to understand the most effective methods for: <ul style="list-style-type: none"> ● Routine outcome monitoring to assess the carbon impact of care ● The most effective ways to feed back this information ● Long-term sustainability of interventions and approaches

5. Case studies: examples of greener, more sustainable and net zero interventions and approaches to mental health care

The following case studies, which provide examples of interventions and approaches aimed at delivering greener, more sustainable and net zero mental health care, were submitted to our call for evidence, extracted from Green Plans or suggested by the ERG:

- 1. Public transport passes for staff** at Birmingham and Solihull Mental Health NHS Foundation Trust
- 2. Energy efficiency measures at headquarters building** of Bradford District Care NHS Foundation Trust
- 3. Surplus equipment exchange portal for staff** at Dorset Healthcare University NHS Foundation Trust
- 4. Medication rationalisation and de-prescribing of dementia inpatient wards** at Hertfordshire Partnership NHS Foundation Trust
- 5. New and dedicated sustainability roles** at Leeds and York Partnership NHS Foundation Trust
- 6. Reducing single-use products** at Pennine Care NHS Foundation Trust
- 7. Reducing carbon from travel through use of e-bikes** at Sheffield Health and Social Care NHS Foundation Trust
- 8. Nature-based green preventive interventions** at Somerset Integrated Care System and The Space
- 9. Mobile mental health rapid-response electric vehicle** at South Central Ambulance Service NHS Foundation Trust
- 10. Nature-based green intervention of wild swimming** at South-East Surrey and Borders Partnership NHS Foundation Trust.

A full list of submissions to the call for evidence and detail on the review of Green Plans can be found in the **Evidence Review and Resources: Section 4.**

Case study 1: From review of NHS Green Plans

Birmingham and Solihull Mental Health NHS Foundation Trust:
Transport for staff



- The Trust has developed local partnerships to deliver 1-week bus passes for all new starters and is looking to expand this partnership for further discounts for regular passengers.
- This approach is an example of how to reduce staff travel or make transport less carbon-intensive.

Case study 2: From call for evidence submissions

Bradford District Care NHS Foundation Trust:
De-carbonisation of Trust Headquarters buildings



- An energy efficiency measure aimed to reduce energy use at Trust Headquarters buildings. All lights were switched to LEDs (light-emitting diodes) and staff were enabled to change from working in the office building to working remotely or from home where possible. This was intended to reduce the need for commuting/staff travel.

Outcomes and preliminary findings

- The Trust reported a 9% reduction in electricity consumption since the changes were made. There is a future plan to measure mileage and carbon impact of staff travel. The Trust also reported plans to review bill data, to measure reductions and the financial impact of the approaches undertaken.

Case study 3: From call for evidence submissions

Dorset Healthcare University NHS Foundation Trust: Warp It, reuse and recycle portal

- A Warp It reuse and recycle portal, where surplus equipment can be listed on the staff intranet and items can be claimed (avoiding the cost of buying new items).

Outcomes and preliminary findings

- Over £178,500 has been saved in purchase costs of new items, with over 79,500 kg of CO2 emissions saved on the manufacture and distribution of these items. The service also reported that 33,980 kg of existing assets were reused.



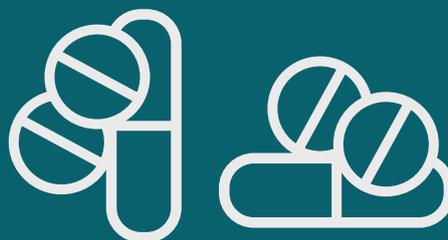
Case study 4: From call for evidence submission

Hertfordshire Partnership NHS Foundation Trust: Medication rationalisation and de-prescribing on dementia inpatient care wards

- In an initiative aimed at de-prescription of unnecessary medication, the service reviewed medications using [STOPPFrail](#) (Screening Tool of Older Persons Prescriptions in Frail adults with limited life expectancy) guidelines. The aim was to create a formalised process for safe medication rationalisation and de-prescribing that was appropriate to the population of people with dementia across several inpatient wards.

Outcomes and preliminary findings

- The service achieved safe and appropriate medication rationalisation and de-prescribing across several dementia wards. This initiative reduced the use of unnecessary medication, which reduced waste and saved costs. On one ward that was used as an example, the service stopped or reduced medications for 30% of patients on the ward.



Case study 5: From review of NHS Green Plans

Leeds and York Partnership NHS Foundation Trust: New and dedicated roles



- The Trust board and executive team provided funding for a Head of Sustainability role as well as project support to develop the Trust's sustainability work over the period of the Green Plan. An agreed governance route was also put in place to ensure the Trust board and other stakeholders would receive assurance that targets are met and that service delivery is ethical.
- This approach is an example of introducing new and dedicated roles, and changes to governance structures, policies and standards.

Case study 6: From review of NHS Green Plans

Pennine Care NHS Foundation Trust: Reducing single-use products

- The Trust invested in reusable beakers for patient medication dispensing. These reduced the need for single-use plastic cups.
- This approach is an example of ways to reduce waste, and of improving medication and/or prescribing practices.



Case study 7: From review of NHS Green Plans

Sheffield Health and Social Care NHS Foundation Trust: Reducing carbon from travel by using e-bikes

- Staff in the Community Enhancing Recovery Team swapped their cars for e-bikes when visiting patients at home in a 'Green Wheels' pilot scheme. They were supported by 'Pedal Ready', a Sheffield Enterprise that offers free cycle training and cycle route advice to residents.

Outcomes

- During a 4-week pilot, Community Enhancing Recovery Team staff cycled over 720 miles, improving staff wellbeing and reducing the Trust's carbon emissions of 209 kg CO₂e – an annual saving of over 120 trees



Case study 8: Healthier Futures Action Fund award recipient

Somerset Integrated Care System in partnership with The Space: nature-based green intervention

Overview

In collaboration with a local partner, Somerset Integrated Care System improved preventive mental health interventions for children and young people, developing a local 'Community of Support', which involved utilising local nature-based resources. This involved:

- Piloting the NHS iThrive support framework
- Increasing capacity for face-to-face counselling for 9–17-year-olds in a community hub
- Developing a community wellbeing allotment including an eco-project working with Somerset Wildlife Trust, and used this as a therapeutic tool for children and young people
- Increasing capacity for a youth club/holiday activities to reduce isolation
- Working with volunteer groups in their work to clean up the local countryside.

Outcomes

Measured using:

- Feedback surveys from young people and family members
- The SDQ (Strengths and Difficulties Questionnaire)
- The YP-CORE (Young Person's Clinical Outcomes in Routine Evaluation) measure of psychological therapy.

Preliminary findings:

- Tangible mental health and emotional wellbeing improvement for 240 children and young people

- Delivery of 490 counselling sessions and 104 play therapy sessions
- A 91% improvement in children and young people's emotional wellness and resilience, an 87% improvement in forming positive relationships, and reduced risk of suicide and self-harm
- A reduced need for primary care input, emergency department attendance and associated travel (not quantified).

The project illustrates the core principles of:

- Neighbourhood working to reduce the carbon footprint
- Reduction of the NHS carbon footprint by eliminating the need for emergency department and hospital care
- Inclusion of vulnerable and underserved groups
- Measurable social value outcomes resulting from the proposed project
- Collaborative working with local public sector partners and others.



Case study 9: From call for evidence submission

South Central Ambulance Service NHS Foundation Trust: Ambulance service-led mobile mental health rapid-response vehicle

- The ambulance service uses an electric vehicle to respond to mental health crises. This reduces the use of ambulances and other non-electric vehicles being used for patient assessment or transfer. The electric vehicle is a lower carbon alternative to traditional mental health patient transportation.

Outcomes

- The service plans to measure the carbon impact of the electric vehicle by monitoring mileage and vehicle battery efficiency and comparing the results at the end of the project trial with existing traditional ambulance fleet data.



Case study 10: Healthier Futures Action Fund award recipient

South-East Surrey and Borders Partnership NHS Foundation Trust: Nature-based green intervention

- The Wild Swimming Pilot Project is a pilot intervention for young people with depression who use the local children and young people's mental health services (formerly CAMHS) service. The intervention involves providing young people and their parents and carers with a short course in open-water swimming at local lakes.
- The pilot was offered to three cohorts of six young people, recruited from areas local to the lakes. The project was facilitated by two open-water swimming coaches and two clinicians from the CYPMHS service. Participants were encouraged to use public transport to attend the courses, and a Trust vehicle was offered so that participants could travel together to reduce the carbon footprint.

Outcomes

Measured using:

- Qualitative data in the form of written feedback
- The RCADS (Revised Children's Anxiety and Depression Scale)
- The WEMWBS (Warwick-Edinburgh Mental Wellbeing Scale).

Preliminary findings:

- A significant reduction in instances of deliberate self-harm and in suicidal thoughts
- Increased reported feelings of achievement, success, self-esteem and excitement
- Improved relationships between child and parent or carer
- Improved school attendance
- Reduction in social isolation
- A small environmental impact (the only significant impact being travel to the lake, minimised by using shared transport and local referrals to reduce travel time)
- The project is deliverable within the set budget



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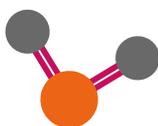
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Terminology

Definitions of terms used in this guidance⁹

Carbon: Carbon is short for 'carbon dioxide', and is a term used to refer to all human-made greenhouse gas emissions. These emissions are mainly carbon dioxide (CO₂); others are methane (CH₄), nitrous oxide (N₂O), sulphur hexafluoride (SF₆), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs) and perfluorocarbons (PFCs).



Carbon impact: The impact of a practice or set of practices on carbon emissions. A carbon footprint (below) is one way of measuring that impact. Low carbon impact solutions seek to reduce carbon emissions and, subsequently, the carbon footprint.



Carbon footprint: The amount of direct and indirect greenhouse gas emissions released into the atmosphere as the result of activities by an individual, organisation, event, service, product or place, typically expressed in tonnes of CO₂e. 'Footprint' is a metaphor for the impacts of these greenhouse gases.



CO₂ equivalent (CO₂e): The many greenhouse gases can be measured together by their carbon dioxide equivalent (CO₂e). CO₂e is the amount of emitted CO₂ that would cause the same impact on climate change for a given greenhouse gas, or mixture of greenhouse gases. For example, 1 kg of emitted N₂O would cause the same warming impact as around 265 kg of emitted CO₂, and can be expressed as 265 kg CO₂e.



Net zero: Net zero is achieved when our greenhouse gas emissions are balanced by greenhouse gas removal from the atmosphere, resulting in no further net emissions and climate neutrality.



Sustainable healthcare: A healthcare system that meets the present health needs of the population without compromising the health of the environment, planet and future generations.



⁹ These definitions were derived from the [Royal College of Emergency Medicine GreenED Handbook, 2023](#).

