



Royal College
of Physicians

RCP view on healthcare sustainability and climate change

RCP view | March 2023



Executive summary

Climate change is the biggest threat to human health. The [Intergovernmental Panel on Climate Change](#) projects an excess of 250,000 deaths per year by 2050 attributable to climate change due to heat, undernutrition, malaria and diarrheal disease, with more than half of this excess mortality projected for Africa. The record temperatures the UK experienced in the summer of 2022 are a reminder that while the impacts of climate change are not felt equally, they are happening now around the world.

As a founding member of the [UK Health Alliance on Climate Change](#), the Royal College of Physicians (RCP) has been vocal about the health impacts of climate change. Last year, following consultation with its members, the RCP formally adopted sustainability and climate change as one of its four policy and campaigns priorities for the first time. This position paper sets out a range of policy calls from what the government must do to reduce the health impacts of climate change to how we can ensure environmental sustainability is effectively prioritised in the NHS, as well as considering the population health benefits of action to reduce climate change. These recommendations will form the basis for the RCP's campaigning work for at least the next 4 years, working in partnership with individuals and organisations across the health sector, including the UKHACC. A new RCP advisory group on sustainability and climate change will look at what more can be done in the health service – and by medicine in particular – to improve healthcare sustainability.

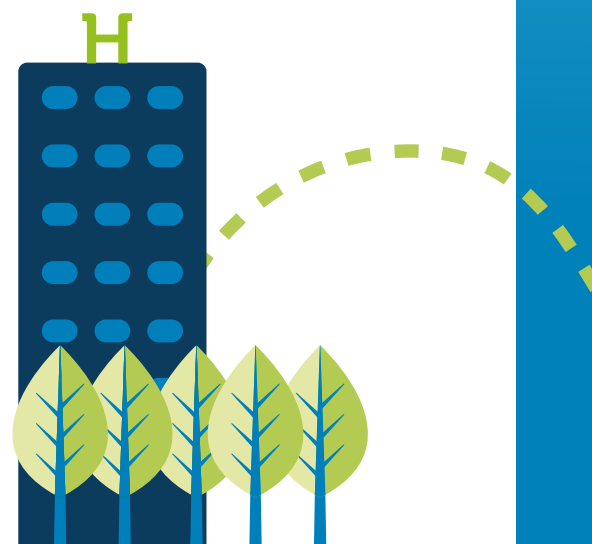
We have a duty to tackle climate change. The action needed to limit its worst impacts are not insignificant, and most will require major changes to the way we live our lives. But the consequences of doing nothing will be far worse for the health of the planet and the country. Indeed, many of the things we need to do to tackle climate change will bring major benefits for improving population health. Tackling air pollution, promoting walking and cycling (known as 'active

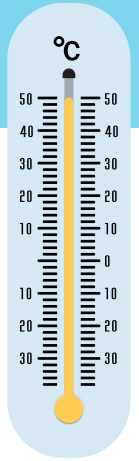
travel'), and improving the number and quality of green spaces can all have dual benefits for the climate and health.

Climate change represents the most significant challenge that society faces today, not just in the UK but globally. Meeting that challenge will require us all to make changes to the way we live and behave but determined action – particularly by governments, industry and public services such as the NHS who have the power to make the biggest concentrated impact – can make a meaningful difference. While it is far beyond the scope of this paper to provide definitive and comprehensive solutions, it aims to identify areas where we can make further progress.

The role of government

National governments have the power to make the greatest impact on climate change and play a fundamental and leading role in setting the direction and ambition of the policy response. In 2019 the UK government legislated for a legally binding commitment to reduce the UK's net carbon emissions by 100% relative to 1990 levels by 2050. This is often referred to as reaching 'net zero'. This commitment made the UK the first major economy to set such a target in law. While this was a welcome step forward, and the subsequent publication of the government's Net Zero Strategy an important milestone, there is a high risk of under-delivery in a number of areas against the goals that have been set.





The Net Zero Strategy sets out a series of policies for meeting emission reduction targets up to 2037. Analysis of the strategy by the UK Climate Change Committee found that there were ‘significant risks’ attached to 33 % of the required emissions reductions and that plans were either missing or inadequate for a further 5 %, as well as highlighting a lack of contingency planning. In July 2022, Friends of the Earth, represented by Leigh Day, brought a successful legal challenge arguing that the Net Zero Strategy failed to meet its legal obligations under the Climate Change Act 2008 to enable parliament to clearly evaluate how the government intends to achieve its carbon emissions reduction targets. The significant economic opportunities presented by the transition to net zero were emphasised in a separate independent review of the Net Zero Strategy led by former energy minister Chris Skidmore MP, which said that realising these opportunities requires ‘clarity, certainty, consistency, and continuity from government’, including a long-term, stable investment plan. It is vital that the UK has a clear and credible plan for reducing its emissions.

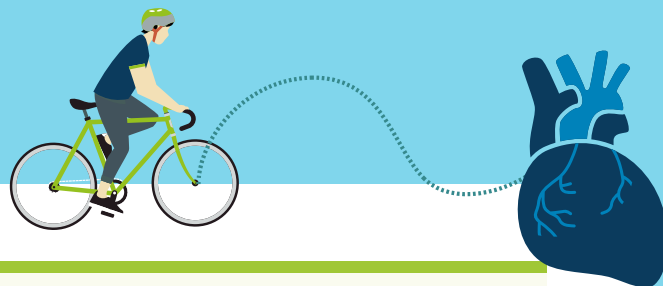
Reducing and ultimately eliminating our use of fossil fuels must also be a priority for government. Continued fossil fuel use will undermine our ability to mitigate climate change and leave everyone – from consumers to organisations like the RCP – vulnerable to energy price shocks which have significant impacts on health. The transition away from fossil fuels must be managed in a way which does not exacerbate health inequality – a range of complementary policy interventions at both national and local level, for example around skills and training as well as support for everyone to reduce their energy consumption through home insulation initiatives, are needed to achieve a just transition.

The role of the NHS

The NHS is responsible for around 40 % of the UK’s public sector emissions and 4 % of total emissions. It aims to become the world’s first net zero national health service and has set targets for achieving this, which include reaching net zero in the emissions it controls directly by 2040. A focus on improving the environmental sustainability of healthcare delivery needs to be embedded across the NHS at national, regional and local levels. It can be challenging to prioritise sustainability at a time when there is very high demand for clinical care, but it can ultimately deliver wider benefits for population health and in doing so reduce pressure on the NHS.

New, more environmentally sustainable ways to deliver healthcare will make a significant contribution to our efforts to mitigate climate change. Clinicians and other healthcare professionals in the NHS can play a vital part in improving the sustainability of healthcare by making changes to how they practice and the way that care is delivered. All such changes, whether large or small, make an important contribution to reducing the impact that the health service has on the environment and climate change. There are also wider potential benefits that can be realised through the development of new methods of treatment that consume fewer resources and generate less waste. There are many successful initiatives currently taking place across the NHS which have the potential to be scaled up more widely. This paper includes several case studies demonstrating how a more sustainable approach to healthcare delivery can be achieved and the impact this can have.





Population health

Many of the interventions we need to take to address climate change also have major benefits for population health in their own right and can ultimately help to reduce pressure on the NHS. Research published in *The Lancet Planetary Health* in early 2023 assessed the health impact of policies recommended by the UK Climate Change Committee – the independent body which advises government on emissions reduction – for achieving net zero by 2050. The analysis suggests that these would result in at least 2 million additional years being lived cumulatively across the population of England and Wales between 2021 and 2050.

Recommendations

Recommendations for government

- Prioritise a just transition from fossil fuels, redirecting all funding and subsidies to renewable energy sources and technologies and implementing complementary policy initiatives to ensure this process does not exacerbate health inequalities.
- Strengthen the Net Zero Strategy to ensure there is a robust and credible pathway for reaching the UK's emission reduction targets by 2050 at the very latest.
- Build on the UK's presidency of COP26 and continue to push for ambitious international action to limit climate change.
- Go further in its efforts to reverse environmental decline – existing targets and commitments should be regarded as a floor not a ceiling, and policy interventions should actively seek to go beyond them.
- Put prevention at the heart of health and wider government policy, recognising that reducing avoidable ill health

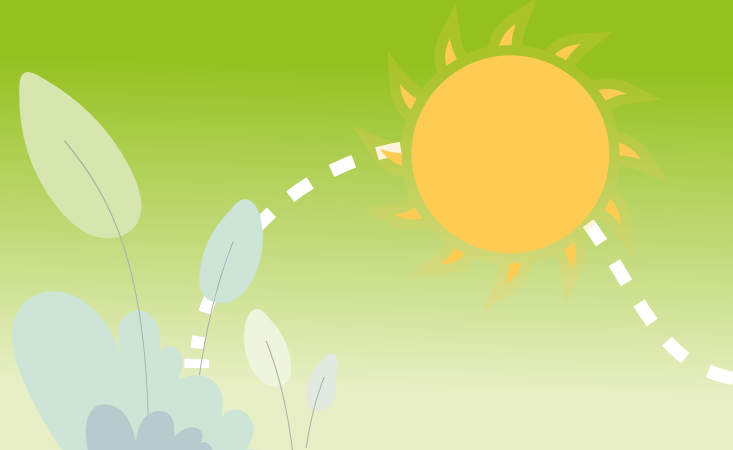
and demand for healthcare will require cross-government action, and has environmental, health and economic benefits.

- Fully implement recommendations from the chief medical officer's 2022 annual report on air pollution, taking robust action across a range of different sectors to improve both outdoor and indoor air quality.
- Ensure that the infrastructure needed to enable active travel (walking and cycling) is in place across the country to realise the aim set out in the 2023 Environmental Improvement Plan that half of all journeys in towns and cities should be walked or cycled by 2030. This should be supplemented by efforts to improve the provision of public transport across the country to reduce emissions from car travel.
- Provide everyone with access to a green space within 10 minutes of their home, building on the 15-minute pledge in the Environmental Improvement Plan and setting out a clear timescale and funding commitment to deliver this.

Recommendations to ensure the NHS and health and care systems can effectively prioritise environmental sustainability

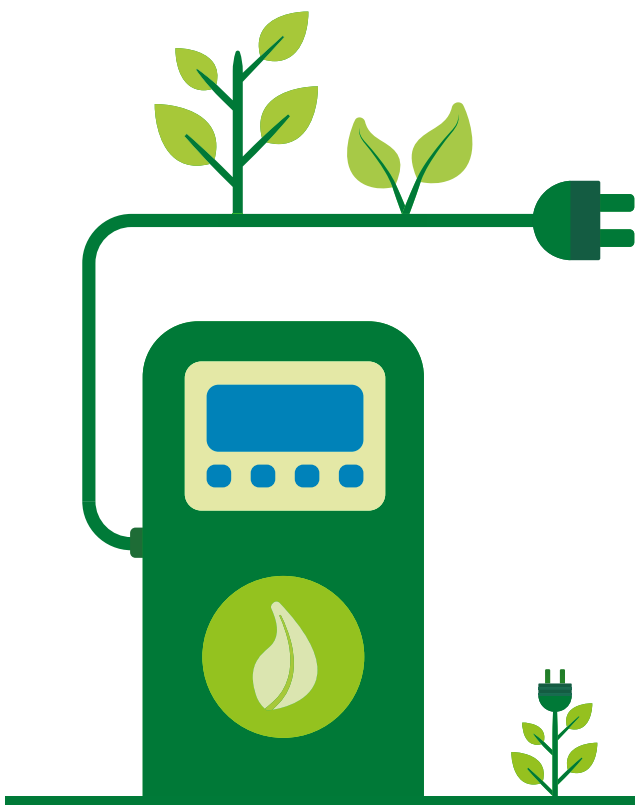
- The NHS constitution should be updated to include the net zero targets.
- The link between climate change mitigation and improved health outcomes should be recognised and leveraged by NHS bodies and systems in national, regional and local health inequalities work.
- Initiatives to reduce the environmental impact of healthcare delivery within the NHS must be appropriately funded, including capital investment where necessary.

Introduction



1. As the Royal College of Physicians (RCP) and many other healthcare bodies have said, the climate emergency is a health emergency. The impact of climate change will not just be felt by future generations – it is happening right now, and the need for meaningful action becomes more urgent every day. As global temperatures rise, extreme weather events such as heatwaves, droughts, storms and flooding are becoming more common. Antimicrobial resistance and vector-borne infectious diseases will become more prevalent and there will be increases in climate migration globally, all of which will create serious challenges for human health and our ability to deliver healthcare services.

2. Climate change represents the biggest long-term risk to human health. But it is also a human-made problem which means that not only is it our responsibility to tackle, but to do so is within our power. This will require us all – from individuals to organisations like the RCP – to make changes to the way we live and behave, including to the ways in which we provide healthcare. Crucially, national governments have the power to make the greatest impact. This position paper therefore places a particular focus on the UK government’s response to climate change and what more needs to be done. It also considers the contribution that the NHS and individual clinicians can make and the benefits this can have for the environment, patients and efficient healthcare delivery.



‘Climate change is a threat to human wellbeing and planetary health. There is a rapidly closing window to secure a liveable and sustainable future for all.’

Intergovernmental Panel on Climate Change,
March 2023

The health risks of climate change

3. The [Intergovernmental Panel on Climate Change](#) has made clear that climate change is having a detrimental effect on health across the world. It has said that:

‘Climate change has adversely affected physical health of people globally and mental health of people in the assessed regions. Climate-related illnesses, premature deaths, malnutrition in all its forms and threats to mental health and well-being are increasing.’

It adds that,

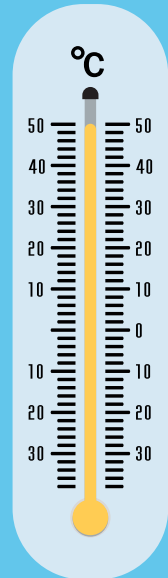
‘Climate change and related extreme events will significantly increase ill health and premature deaths from the near- to long-term. An excess of 250,000 deaths per year by 2050 attributable to climate change is projected due to heat, undernutrition, malaria and diarrheal disease, with more than half of this excess mortality projected for Africa.’

4. Although the impacts of climate change are unequal, its effects are being felt everywhere, including in the UK, which experienced temperatures in excess of 40°C for the first time in 2022. [Analysis by the Office of National Statistics and UK Health Security Agency](#) indicates that over the course of five ‘heat periods’ between June and August 2022, 56,303 deaths occurred in England and Wales – 6.2% above the 5-year average. The frequency and intensity of heatwave events in the UK are likely to increase in future. Without adaption and mitigation, this will lead to continuing rises in heat-related mortality. The [technical report](#) of the latest UK Climate Change Risk Assessment published in January 2022, includes projections showing that if global warming were to reach 4°C by 2100,



It is projected that global warming of 4°C by 2100 would result in additional heat-related deaths in the UK

**over 7,000
a year by 2050
over 12,500
a year by 2080**



we could expect to see an additional 7,040 heat-related deaths in the UK every year by the 2050s, and an additional 12,538 by the 2080s.

5. In addition to the direct effect that rising temperatures have on health, climate change will also have a significant impact in a range of connected areas such as the availability of food and water. The [technical report](#) of the third UK Climate Change Risk Assessment notes that the international food system is vulnerable to climate shocks and estimated that as a result food price spikes could become more common in the UK. It also highlights that climate change is likely to have a detrimental impact on water quality, leading to increases in infectious diseases, and that analysis has suggested that by the 2050s the UK could face a deficit in its water supply equivalent to the daily usage of 4.4 to 6.2 million people.
6. The action necessary to limit the worst impacts of climate change will entail costs and require major changes to the way we live our lives. But while this will be challenging, it is essential to recognise that the consequences of not doing so – including for our health – will be far worse. The costs of not taking meaningful action will also only rise the longer we delay. The [Office for Budget Responsibility](#) estimates that the consequences of unmitigated climate change could push UK government debt well above 200% of GDP by the end of this century.

The benefits of climate action for population health



Almost

1,200 early deaths

could be prevented each year by increasing walking and cycling rates across England

7. The threat that climate change represents for human health is clear. But many of the interventions we need to take to address climate change also have major benefits for population health in their own right and can ultimately help to reduce pressure on the NHS. [Research published in *The Lancet Planetary Health* in 2023](#) assessed the health impact of policies recommended by the UK Climate Change Committee – the independent body which advises government on emissions reduction – for achieving net zero by 2050. The analysis suggests that these would result in at least 2 million additional years being lived cumulatively across the population of England and Wales between 2021 and 2050 due to factors such as improved physical activity and diet.
8. One important consequence of reducing greenhouse gas emissions will be that levels of air pollution will also fall, as they share many of the same sources such as road transport and domestic and industrial burning. Improving air quality will have significant benefits for public health and our efforts to tackle health inequality. Analysis published in 2016 by the RCP and the Royal College of Paediatrics and Child Health found that [around 40,000 deaths every year in the UK are attributable to exposure to outdoor air pollution](#). It also found that people from lower socio-economic backgrounds are more likely to live in environments where they are more exposed to air pollution, for example from busy roads or in unhealthy housing.
9. Promoting active travel such as walking and cycling, as well as the use of public transport, is a crucial part of reducing the impact of transport on climate change and indeed air quality. Analysis by the Department for Transport shows that [cars emit more greenhouse gases per mile than trains and coaches](#), while research published by the University of Oxford's Transport Studies Unit in 2021 suggests that shifting to active transport from car travel [could save as much as a quarter of personal carbon dioxide emissions from transport](#). The health benefits of active travel are well understood, with the Health Foundation estimating that if walking and cycling rates across England were brought up to the same level as those regions where they are highest, [around 1,190 early deaths could be prevented each year](#).
10. Improving the number and quality of green spaces also has dual benefits for climate and health. As well as supporting biodiversity, in urban areas green spaces can help mitigate the 'urban heat island' effect – the higher temperatures experienced in cities and urban settings compared with rural areas – and reduce energy costs. For example, [an article on green spaces in the UN Chronicle](#) notes that for every tree strategically planted to provide shade, there could be a direct reduction of approximately 10 kg in carbon emissions from power plants through reduced demand for air conditioning. Access to green spaces also has a positive impact on mental and physical health, with [a review by Public Health England](#) highlighting evidence that £2.1 billion could be saved in health costs if everyone in England had access to green space, due to increased physical activity.
11. While action to mitigate climate change will benefit public health, inaction will exacerbate health inequalities. A 2020 [report by the UK Health Advisory Group](#), reflected on the impact of systemic shocks such as the COVID-19 pandemic and highlighted that 'The evidence shows climate change will lead to more . . . systemic shocks, which will become increasingly unpredictable and which will impact population health, well-being and inequalities - both directly and indirectly. Communities that are already disadvantaged are among the most vulnerable to the effects of systemic shocks and extreme events and climate change has the potential to widen existing health inequalities within the UK.'

The role of the RCP



12. The RCP recognises that it has an important role to play in addressing the challenge that climate change poses to health, both in terms of the way it operates as an organisation and how it uses its voice. The RCP is committed to ongoing work to minimise the environmental impact of its activities. In January 2020 the RCP adopted a Climate Policy to ensure its investment strategy is in line with its commitment to tackling climate change and the goals of the Paris Climate Agreement, and in April 2021 announced that it had ended all investment in fossil fuels.
13. As a campaigning organisation, the RCP has spoken out about the impact that climate change has on health. It is a founding member of the UK Health Alliance on Climate Change, and in 2021 attended the 26th UN Climate Change Conference of Parties (COP 26) in Glasgow, holding a joint event with the Royal College of Paediatrics and Child Health and the Royal College of Psychiatrists.
14. The RCP also has a long-standing interest in tackling air pollution and is committed to educating patients, physicians and public health professionals about the impact this has on health. In 2021 we responded to the Inner South London assistant coroner's report into the prevention of future deaths following the death of Ella Adoo-Kissi-Debrah. The narrative conclusion of the inquest into Ella's death was that she died of asthma, contributed to by exposure to excessive air pollution. This is the first time air pollution was listed as a cause of death in the UK. In the RCP's response to the coroner's report it committed to work with specialist societies, the Academy of Medical Royal Colleges and other Royal Colleges, the UK Health Alliance on Climate Change and others to communicate the adverse effects of air pollution on health. In June 2022 the RCP provided a progress report on the action taken to achieve this.
15. In 2023 the RCP adopted healthcare sustainability and climate change as one of its policy and campaigns priorities. It will be a key strand of the RCP's influencing activity for at least the next 4 years and it has established an advisory group to lead that work. This position paper provides the basis for the RCP's campaigning work, and a key focus of the advisory group will be what more can be done in the health service – and by medicine in particular – to improve healthcare sustainability.

In 2023 the RCP adopted healthcare sustainability and climate change as one of its policy and campaigns priorities.



The UK government's response to climate change



16. National government plays a fundamental and leading role in setting the direction and ambition of the policy response to climate change. Responding to the challenges posed by climate change must be a central mission for the current government, and all those who take office in the future. Doing so effectively will require consistent focus and ambition across many different aspects of national policy making for decades to come so that climate change is seen as a cross-party issue. The decisions that the government takes today will be essential to shaping the long-term success of the UK's efforts to mitigate and adapt to climate change, and can provide an example for other countries to follow.
17. In June 2019 the government passed legislation which set a legally binding target of reducing the UK's net emissions by 100% relative to 1990 levels by 2050. This is often referred to as reaching 'net zero'. This commitment made the UK the first major economy to set such a target in law. The target was based on a recommendation by the [UK Climate Change Committee](#), which said that if met, the target would deliver on the commitments made by the UK under the Paris Climate Accords to hold rises in global temperatures to no more than 2°C above pre-industrial levels – if replicated globally it would also give a better than 50% chance of limiting temperature rises to 1.5°C, the level necessary to avoid the worst impacts of climate change. However, the committee emphasised that the 2050 target would only be achievable if 'clear, stable and well-designed policies to reduce emissions' were put in place without delay.
18. COP26 was held in Glasgow under the UK's presidency in October–November 2021. In advance of this, the government published its [Net Zero Strategy](#) which set out a series of policies for meeting emission reduction targets up to 2037. This included a commitment to fully decarbonise the power system by 2035 so the UK will only use clean electricity by that point. The strategy also set an ambition that no new gas boilers will be sold by 2035 and introduced a zero emission vehicle mandate with a view to ensuring that by 2035 all cars sold must be fully zero emissions capable.
19. The UK Climate Change Committee provided an assessment of these proposals in its most recent [progress report to parliament](#) in June 2022. It said that while credible plans exist for 39% of the required emissions reductions, predominantly from the zero emission vehicle mandate and a renewable electricity supply, there are 'significant risks' attached to 33% of the required reductions with policies underdeveloped in areas such as introducing market-based mechanisms for low-carbon heat in homes. Plans were said to be either missing or inadequate for a further 5% of required emissions reductions, for instance around industrial electrification. The committee highlighted important policy gaps in areas such as land use and the energy efficiency of buildings, and the lack of contingency planning in case proposed policies don't deliver as planned, which the strategy is not fully credible without. In July 2022, [Friends of the Earth](#), represented by [Leigh Day](#), brought a successful legal challenge arguing that the Net Zero Strategy failed to meet its legal obligations under the Climate Change Act 2008 to enable parliament to clearly evaluate how the government intends to achieve its carbon emissions reduction targets. The judge granted a mandatory order requiring the secretary of state to present a revised version of the UK government's Net Zero Strategy that is compliant with the Climate Change Act 2008 to parliament no later than 31 March 2023.

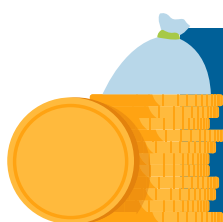
20. In September 2022, former energy minister Chris Skidmore MP was commissioned by government to lead an independent review of its net zero strategy. The final report of the review, [Mission Zero](#), was published in January 2023. This emphasised the significant economic opportunities presented by the transition to net zero – but highlighted that these opportunities are being missed due to factors such as weaknesses in the UK’s investment environment and a lack of policy clarity. The review also considered the costs of not acting, noting analysis by the Office for Budget Responsibility suggesting that if action is delayed by 10 years then UK debt could be 23 % higher by 2050, doubling the fiscal cost of achieving net zero. The overwhelming message from those who contributed to the review was the need for ‘clarity, certainty, consistency, and continuity from government’, including a long-term, stable investment plan.
21. While the publication of the government’s net zero strategy in 2021 was an important milestone, the [UK Climate Change Committee’s analysis](#) suggests that the government’s current plans and initiatives will not be sufficient to deliver the legal commitment to achieve net zero by 2050 and there is a high risk of under-delivery against the goals that have been set in a number of areas. It is vital that the UK has a clear and credible plan for reducing its emissions. The revised Net Zero Strategy due by 31 March 2023 must provide a robust and credible pathway for reaching the UK’s emission reduction targets by 2050 at the very latest. If it proves feasible to reach net zero at an earlier stage, then every effort should be made to do so.
22. Reducing and ultimately eliminating our use of fossil fuels is the linchpin of our efforts to limit the impact of climate change – this must be a central priority in government policy making and underpinned by the necessary investment. Continued use of fossil fuels will not only fundamentally undermine our ability to mitigate climate change, but also leave everyone – from consumers to organisations like the RCP – vulnerable to energy price shocks which themselves have a significant impact on health. In May 2022, [polling published by the RCP-convened Inequalities in Health Alliance](#) found that 55 % of people felt that their health had been negatively affected by the rising cost of living, with 84 % of them citing rising heating costs as a factor. An ambitious government programme to rapidly transition away from fossil fuels – including eliminating all current fossil fuel investment and subsidies – is needed. Subsidies should be redirected towards renewable energy sources and technologies.
23. The transition from fossil fuels is necessary but it must be managed in a way that does not exacerbate health inequality. The [Global Climate and Health Alliance](#) has explained that as governments and societies take action to reduce reliance on fossil fuels, the ‘livelihoods of workers employed by the fossil fuel industry, and the risk of energy poverty faced by vulnerable populations, must be carefully considered, not least as social determinants of health’. The Mission Zero review has highlighted that achieving a ‘just transition’ away from fossil fuels requires action by government and industry to build the skills base that will be needed for new green jobs within the UK workforce. While the government must rapidly eliminate all forms of government subsidies, investments, new licences and consent for fossil fuel exploration, extraction and sales, it must also set out a range of complementary policy interventions at both national and local level, for example around skills and training, to achieve a just transition.
24. Policy interventions that support people to reduce their energy consumption, such as home insulation initiatives, are also a vital component of a just transition – as the Mission Zero review notes, ‘The cheapest energy is the energy we do not use and by improving the insulation and heating sources of our homes we will have warmer, cleaner places to live’. Funds from the elimination of subsidies and investments in fossil fuels should also be redirected towards subsidies for upgrading home insulation and energy efficiency technologies to help reduce fuel consumption and cost.

25. Internationally, the UK government should build on its presidency of COP26 and continue to galvanise international efforts to limit the impact of climate change. This is a global problem and while the UK cannot tackle it alone, UK leadership – including by example – can make a tangible difference. The [Glasgow Climate Pact](#) recognised that the impact of climate change will be much lower if rises in global temperatures are limited to no more than 1.5°C above pre-industrial levels compared to 2°C, and the UK government’s approach should be consistent with this.
26. In addition to its legal net zero commitment, the government has also committed to a series of wider legal targets for addressing environmental decline. The Environment Act 2021 required long-term targets to be set for improving air quality, water quality, biodiversity and waste reduction, as well as specific targets around levels of fine particulate matter (PM_{2.5}) air pollution and species abundance.
27. The RCP has long campaigned on the need for improved outdoor and indoor air quality. Long-term exposure to PM_{2.5} is associated with cardiovascular morbidity and a reduction in life expectancy. The RCP was one of a number of organisations across the health and environmental sectors to call for the Environment Act targets to include a commitment to reduce annual concentration levels of PM_{2.5} air pollution to 10 micrograms per cubic metre (µg/m³) by 2030, a level first recommended by the World Health Organization in 2005.
28. [Analysis by the Clean Air Fund and Imperial College London](#) indicates that reaching 10 µg m³ by 2030 is clearly feasible, with many parts of the UK already on course to meet this. It found that reducing PM_{2.5} air pollution to 10 µg/m³ would lead to 3,100 fewer new cases of coronary heart disease and 388,000 fewer reported asthma symptom days in children each year, and the total economic benefits would be in excess of £380 billion.
29. The final environmental targets were confirmed by government in December 2022, with the target date for reducing PM_{2.5} pollution to 10 µg/m³ set at 2040. The government’s subsequent 2023 [Environmental Improvement Plan](#) set an additional interim target of reducing PM_{2.5} levels to 12 µg/m³ by the end of January 2028. While this provides additional clarity about the planned trajectory of PM_{2.5} reductions, it nonetheless falls short of the air quality standard recommended by the World Health Organization nearly 20 years ago, which has since been revised down further to advise that levels of PM_{2.5} pollution should not exceed 5 µg/m³. Commitments made in legislation and the Environmental Improvement Plan should be regarded as a floor not a ceiling. Reducing levels of PM_{2.5} air pollution as soon as possible is vital for human health and the planet.

Reducing PM_{2.5} air pollution to 10 µg/m³ by 2030 would lead to:



3,100 fewer new cases of coronary heart disease a year

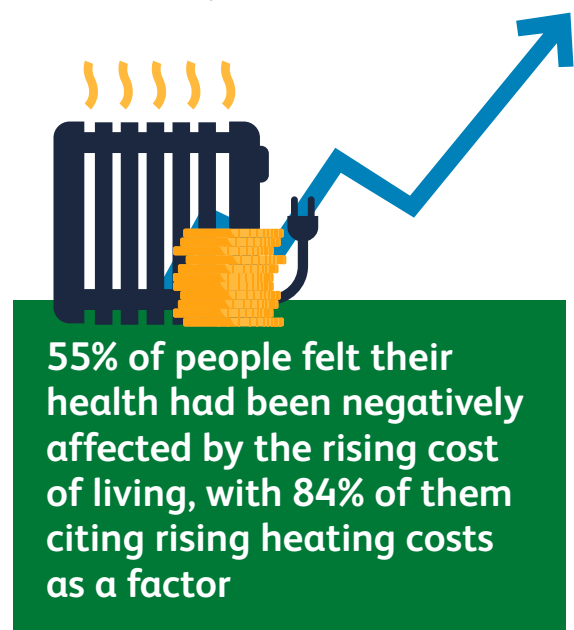


economic benefits of over £380 billion

388,000 fewer asthma symptom days in children each year



30. The [chief medical officer's 2022 annual report](#) focused on air pollution and made a series of recommendations for addressing outdoor air pollution, including accelerating the electrification of light vehicles, public transport and trains and introducing changes to industrial and agricultural practice to reduce harmful emissions. The government, in partnership with local authorities and other stakeholders, should implement these recommendations in full and go further if necessary to ensure concentrations of PM_{2.5} are limited to 10 µg/m³ by 2030. In addition, the report identifies health risks associated with indoor air pollution which must also be addressed. Robust action is needed to reduce pollutants produced through domestic burning, which will also contribute to improving outdoor air quality, and further research should be undertaken to understand the drivers of indoor air pollution and the interventions to tackle it.
31. The government's Environmental Improvement Plan made a number of further commitments, including around active travel, with an aim set that half of all journeys in towns and cities should be walked or cycled by 2030. This is a welcome objective and the interventions necessary to achieve it should be prioritised nationally and locally, including by ensuring that infrastructure such as cycle lanes are in place. There should also be a parallel focus on improving the provision of public transport across the country in order to reduce the emissions produced by car journeys.
32. The RCP also believes that government should create equitable access to green space in the UK by prioritising the protection and development of high-quality natural places, with the ultimate aim of ensuring everyone has a local park within a 10-minute walk of their home. The Environmental Improvement Plan included a new pledge to ensure that everyone will be able to reach a green or blue (ie water-based) space within 15 minutes' walk of their front door, which would be an important step towards this. However, this ambition must be matched by effective delivery to a clear timescale and supported by the necessary funding.
33. Beyond interventions aimed specifically at reducing greenhouse gas emissions and reversing environmental decline, a broader shift towards prevention in all aspects of government policy would also support the UK's climate change ambitions. The RCP has been a strong advocate of taking a more preventative approach within health policy for many years. Preventing avoidable ill health means patients enjoy more years in better health, reducing the need for costly health interventions as a result. This will also have a positive environmental impact too, as reducing avoidable demand for healthcare will reduce the emissions and waste generated by treating ill health.
34. Realising the health and environmental benefits of prevention requires action across many wider areas of policy. In its role as convener of the Inequalities in Health Alliance, the RCP has emphasised that preventing ill health in the first place requires action across government to address the social determinants of health such as poor housing, food quality, communities and place, employment, racism and discrimination, transport and air pollution. To reduce avoidable ill health, and improve general levels of health across the population, health must be embedded as a priority across wider government policy, and the government must commit to a cross-government strategy to reduce health inequalities.



Recommendations for the UK government

35. Given the scale of the threat that climate change poses to human health, the RCP urges the UK government to go further in its response. As efforts to tackle climate change touch every aspect of our lives and will be a significant feature of policy making for many decades to come, the recommendations that follow cannot be definitive – instead, they are intended as a starting point on a much longer journey and as a basis for future action. With this in mind, the RCP calls on the UK government to:

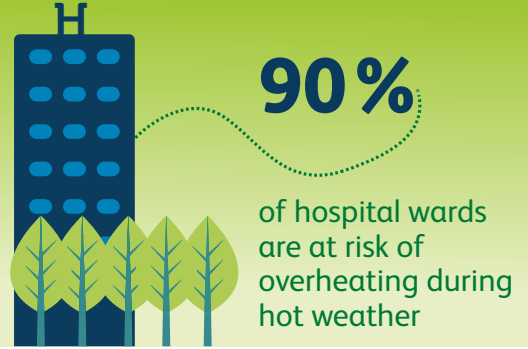
- **prioritise a just transition from fossil fuels, redirecting all funding and subsidies to renewable energy sources and technologies and implementing complementary policy initiatives to ensure that this process does not exacerbate health inequalities**
- **strengthen the Net Zero Strategy to ensure there is a robust and credible pathway for reaching the UK’s emission reduction targets by 2050 at the very latest**
- **build on its presidency of COP26 and continue to push for ambitious international action to limit climate change**
- **go further in its efforts to reverse environmental decline – existing targets and commitments should be regarded as a floor, not a ceiling, and policy interventions should actively seek to go beyond them**

- **put prevention at the heart of health and wider government policy, recognising that reducing avoidable ill health and demand for healthcare will require cross-government action, and has environmental, health and economic benefits.**

In addition, the RCP also makes further specific recommendations in three overlapping areas – air quality, active travel and access to green space – which can promote public health and support climate change mitigation, and calls on government to:

- **fully implement recommendations from the chief medical officer’s annual report on air pollution, taking robust action across a range of different sectors to improve both outdoor and indoor air quality**
- **ensure the infrastructure needed to enable active travel is in place to realise the aim set out in the Environmental Improvement Plan that half of all journeys in towns and cities should be walked or cycled by 2030. This should be supplemented by efforts to improve the provision of public transport across the country to reduce emissions from car travel**
- **provide everyone with access to a green space within 10 minutes of their home, building on the 15-minute pledge in the Environmental Improvement Plan and setting out a clear timescale and funding commitment to deliver this.**

Improving the environmental sustainability of the NHS and healthcare delivery



36. It is estimated that the NHS is responsible for 40% of public sector emissions and 4% of total UK emissions. Finding new, more environmentally sustainable ways to deliver healthcare can therefore make a significant contribution to our efforts to mitigate climate change. Doing so can also have wider benefits for the NHS and help support the financial sustainability of the service, by driving the development of new methods of treatment that consume fewer resources and generate less waste.

37. The NHS has set itself two targets, with the aim of becoming the world's first net zero national health service:

- > For the emissions the NHS controls directly (referred to as the 'NHS carbon footprint'), it aims to reach net zero by 2040, with an ambition to reach an 80% reduction by 2028 to 2032.
- > For the emissions the NHS can influence (referred to as the 'NHS carbon footprint plus', which include wider sources of emissions such as patient and visitor travel and medicines used at home), it aims to reach net zero by 2045, with an ambition to reach an 80% reduction by 2036 to 2039.

Under the Health and Care Act 2022, NHS organisations such as integrated care boards and trusts also have a duty to have regard to the need to contribute towards compliance with the UK net zero emissions target and environmental targets under the Environment Act 2021.

38. The strategy for meeting the NHS Carbon Footprint and NHS Carbon Footprint Plus targets is set out in Delivering a 'Net Zero' National Health Service. It includes

immediate, direct measures to decarbonise the NHS across estates and facilities, travel and transport, procurement and disposal. The NHS has committed to work with suppliers to decarbonise the NHS supply chain and to improve the sustainability of food and catering, which accounts for approximately 6% of NHS emissions. The strategy also sets out broader systemic changes necessary to achieve the NHS's net zero targets in areas such as new models of care, workforce and leadership, funding and financial mechanisms, and data and monitoring. A separate roadmap to support suppliers to align before 2030 with NHS England's vision for a net zero service was published in September 2021.

39. In June 2022 it was announced that every trust in England has a board-approved green plan in place, which will collectively save 1 million tonnes of carbon over 3 years. In July 2022, the Health and Care Act 2022 placed duties on all trusts, foundation trusts and integrated care boards to contribute to towards legal net zero emissions and Environment Act targets.

40. As well as taking action to reduce its greenhouse gas emissions the NHS will need to adapt to ensure it is able to meet patient need as episodes of extreme weather become more common. A changing climate will have consequences for how healthcare can be delivered in future and the service needs to plan effectively for this. For example, the technical report of the latest UK Climate Change Risk Assessment highlights that an estimated 90% of hospital wards are at risk of overheating during hot weather, while approximately 10% of hospitals are situated in areas of significant flood risk in the UK, issues which will only be exacerbated by climate change.

41. In 2021 the NHS and the UK Health Security Agency published the [Third health and care adaption report](#), which assesses what more needs to be done to build resilience into the UK's health system. The report sets out a series of commitments covering health information systems, service delivery and leadership, and workforce development and resourcing to respond to the risks that climate change creates for NHS services. Adapting to the effects of a changing climate should be a central focus within the development, delivery and transformation of NHS services and be seen as a continual and ongoing process. Where necessary, suitable capital funding should also be provided to support adaption – as well as improvements in energy efficiency and reductions in greenhouse gas emissions – across the NHS estate.
42. A focus on improving the environmental sustainability of healthcare delivery needs to be embedded across the NHS at national, regional and local levels. Sustainability leads in trusts and integrated care systems have a key strategic role, but everyone in a leadership position within the health service needs to play a part in driving improvement. It can be challenging to prioritise sustainability at a time when there is very high demand for clinical care, but this can ultimately deliver wider benefits for population health and in doing so reduce pressure on the NHS.
43. Given the public health benefits of many initiatives aimed at improving sustainability and reducing climate change, integrated care system leaders should consider how they can build environmental sustainability and climate change into their health inequalities and prevention work. The Health and Care Act 2022 requires NHS England, integrated care boards and trusts to have regard to wider effect of decisions on inequalities in health and wellbeing as part of the NHS's new [triple aim](#) – the public health benefits of climate interventions for patients, particularly those living in areas of high deprivation, should be considered as part of this. It is also welcome that all integrated care systems have green plans in place which shape their approach to mitigating the adverse impacts of climate change, and these should be fully underpinned by the aim of reducing health inequalities.
44. In order to ensure that that environmental sustainability is effectively prioritised within the NHS, the RCP recommends that:
- > **the NHS constitution should be updated to include the net zero targets** and make it clear that this is a key responsibility for all staff, as proposed in [Delivering a 'Net Zero' National Health Service](#)
 - > **the link between climate change mitigation and improved health outcomes should be recognised and leveraged in national, regional and local health inequalities work**, including through the delivery of duties under the Health and Care Act 2022 as well as in green plans
 - > **initiatives to reduce the environmental impact of healthcare delivery within the NHS must be appropriately funded**, including capital investment where necessary, recognising that this is a significant and long-term undertaking but is likely to have significant financial benefits as well.
45. The environmental impact of healthcare also needs to be an important consideration in the development of new drugs and treatments, something which encompasses the work of a number of broader actors beyond just the NHS. Research funders, regulators and bodies such as the National Institute for Health and Care Excellence all have vital roles to play in limiting the environmental impact of interventions which are trialled and approved, and in appropriately balancing it with clinical effectiveness. Initiatives such as including carbon pricing in recommendations for treatment should be considered as part of this. The pharmaceutical industry must also ensure that sustainability is embedded throughout its practices, from development to manufacturing and distribution, and the NHS should continue to use its purchasing and procurement frameworks to incentivise this.



10%

of hospitals are in areas of significant flood risk

The role of individual clinicians



46. Clinicians and other healthcare professionals in the NHS can play a vital part in improving the sustainability of healthcare by making changes to how they practice and the way that care is delivered. All such changes, whether large or small, make an important contribution to reducing the impact that health services have on the environment and climate change.

47. Actions currently being taken to make healthcare more sustainable are already having an impact, demonstrating that changes to practice can make a tangible difference. For instance, over 40 NHS trusts have stopped using the environmentally harmful anaesthetic gas desflurane, which is 2,500 times more potent as a greenhouse gas than carbon dioxide. Over the last 3 to 4

years, the use of desflurane across the NHS has fallen from 20% of all anaesthetic gases used to just 3%, and it will be completely decommissioned by early 2024 in favour of safe alternatives with lower global warming potential. Over the course of a decade, emissions saved through the elimination of desflurane would be equivalent to those that result from powering every home in Plymouth for a year.

48. There are many successful initiatives currently taking place across the NHS, which have the potential to be scaled up more widely. In the next section we highlight three such projects, which provide examples of how a more sustainable approach to healthcare delivery can be achieved and the impact this can have.

The SENTINEL Project

The SENTINEL Project is a co-designed, collaborative quality improvement programme that started in Hull and East Yorkshire in November 2020 and aimed to: i) improve patient outcomes and ii) reduce the environmental impact of asthma and its treatment. This was achieved by identifying and addressing over-reliance on short-acting beta agonist (SABA) inhalers through supported implementation of a local, SABA-free, maintenance and reliever therapy (MART)-based asthma guideline.

Asthma is a common cause of morbidity and mortality in

the UK. SABA overuse (three or more SABA inhalers per year) is associated with increased risk of asthma attacks and death. Despite this, over 21 million SABA inhalers are prescribed each year in England, 94% of which are greenhouse gas-containing pressurised metered dose inhalers (pMDI). As such, identifying and addressing SABA overuse can improve both patient and environmental outcomes.

The SENTINEL Project supports delivery of guideline-recommended asthma care using a co-designed intervention consisting of five pillars: i) healthcare

professional education, ii) implementation of 'gold standard' prescribing practice, iii) targeted asthma reviews, iv) patient support and education, and v) real-time data monitoring and reporting of asthma care metrics. It has been rolled out sequentially across six primary care networks (PCNs) with around 21,000 registered asthma patients. Since the SENTINEL project started, 44,275 fewer SABA inhalers have been prescribed within participating PCNs compared with previous prescribing patterns. This is equivalent to a saving of around 1,240 metric tonnes of CO₂ equivalent. Additionally,

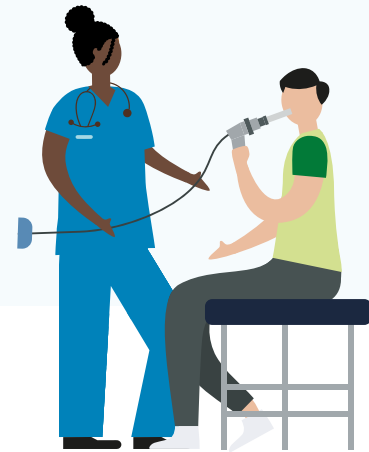
pilot PCN data revealed that fewer patients had an asthma attack in the year following SENTINEL implementation.

The same co-designed intervention has been developed into a scalable quality improvement package, SENTINEL Plus, which has now been adopted by 250 PCNs across the UK. [Find out more](#) about SENTINEL Plus and the SENTINEL Project.

The SENTINEL Project was a collaboration between Hull University Teaching Hospitals and AstraZeneca UK working on behalf of NHS Hull Clinical Commissioning Group.

SENTINEL Plus is a quality improvement package based on the SENTINEL Project. SENTINEL Plus is funded by AstraZeneca UK and co-developed with

the University of Hull and Hull University Teaching Hospitals NHS Trust and supported by the Academic Health Sciences Network



My Medical Record

My Medical Record (MyMR) is a secure, online website and app, developed and managed by University Hospital Southampton (UHS). It lets patients view their hospital record and enables collaboration with clinical teams through built in apps like surveys and messaging.

There are currently around 150,000 patients registered on MyMR at UHS and around 30,000 of these patients are on pathway specific to their medical condition.

Clinical teams use MyMR to complete virtual reviews with patients (where the patient does not need to attend the hospital).

MyMR's direct messaging function allows secure messaging between clinicians and patients, further reducing avoidable hospital visits.

Between April 2021 and March 2022, 5,894 virtual reviews took place, saving 128,648 unnecessary miles being travelled and 36,400 kilos of carbon. Appointment letters, health diaries and questionnaires can all be stored and completed through MyMR, reducing the use of paper and printing materials. As of 31 March 2022, 6,710 MyMR patients had elected to go paperless, saving 350 kilos of carbon per year in appointment letters alone.

MyMR has shown that it can have a significant impact on reducing UHS's carbon footprint, helping to meet its target of 80% reduction by 2032 and wider social responsibility goals.



Green endoscopy

As a high-throughput specialty, with typical national volumes reaching several million procedures annually, endoscopy is held to be the third highest hazardous waste-generating department in a hospital, and the second highest overall waste generator per clinical procedure. In addition to patient volumes, routine endoscopic procedures incur frequent use of single-use items, resource-heavy decontamination, water consumption, significant demands on administration, patient and staff travel as well as high energy consumption in physical estates.

Recognising the contribution that improvements in practice can make to achieving the NHS's net zero targets, the British Society of Gastroenterology (BSG) launched a new climate change and sustainability strategy in November 2021, the first of its kind in the world from a gastroenterology professional society. As part of this, the BSG worked with the Joint Advisory Group for GI Endoscopy and Centre for Sustainable Healthcare to agree a [joint consensus statement](#) on practical measures for environmental sustainability in endoscopy. Four working groups were established to

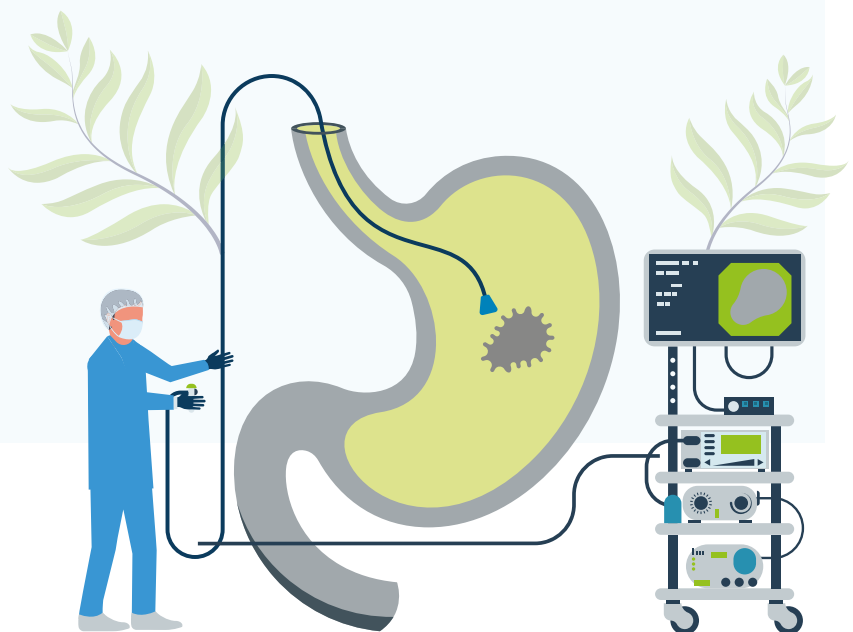
produce evidence-based recommendations in the following areas:

1. The functional organisation of a green endoscopy unit: including adhering to professional guidelines to reduce unnecessary endoscopic procedures and utilising sustainable alternatives and new technology where appropriate.
2. Sustainable endoscopic procedure-related practices: including evidence-based recommendations on the endoscopic equipment and accessories, water and nitrous oxide in endoscopic procedures.
3. Sustainability in endoscopy environment: including reducing the use of personal protective equipment where possible, improving energy

efficiency of endoscopy units and education of endoscopy staff in waste management.

4. Sustainability considerations post endoscopic procedures: including the provision of patient information in digital format rather than paper leaflets and the use of remote consultation for post-endoscopy follow up where appropriate.

Following the publication of the joint statement, the BSG is conducting a national, UK-wide survey to understand the adoption of sustainable practices in endoscopy units nationally, the findings of which will be published in summer 2023. The main objective is to raise awareness and encourage active engagement of all healthcare staff involved in endoscopy services.



Conclusion



49. Climate change represents a significant challenge for society globally but – if we have strong leadership from national governments – it is one that everyone can play a role in tackling. From a health perspective, there are also significant benefits associated with many of the measures that we can take to mitigate the worst effects of climate change, underscoring the importance of taking ambitious action now. Delaying the changes we need to make will only increase the ultimate costs to the planet and our health.

50. The NHS has taken a significant step by setting itself the aim of becoming the world's first net zero national health service. As case studies highlighted in this paper demonstrate, everyone in the NHS can contribute to this, and finding new ways of working that enable healthcare to be delivered more sustainably can make an important and tangible difference to our efforts to tackle climate change.



Full list of recommendations

Given the scale of the threat that climate change poses to human health, the government must:

- > prioritise a just transition from fossil fuels, redirecting all funding and subsidies to renewable energy sources and technologies and implementing complementary policy initiatives to ensure that this process does not exacerbate health inequalities
- > strengthen the Net Zero Strategy to ensure that there is a robust and credible pathway for reaching the UK's emission reduction targets by 2050 at the very latest
- > build on its presidency of COP26 and continue to push for ambitious international action to limit climate change
- > go further in its efforts to reverse environmental decline – existing targets and commitments should be regarded as a floor, not a ceiling, and policy interventions should actively seek to go beyond them.

Given the public health benefits of tackling climate change, the government must also:

- > put prevention at the heart of health and wider government policy, recognising that reducing avoidable ill health and demand for healthcare will require cross-government action, and has environmental, health and economic benefits
- > fully implement recommendations from the chief medical officer's 2022 annual report on air pollution, taking robust action across a range of different sectors to improve both outdoor and indoor air quality
- > ensure that the infrastructure needed to enable active travel is in place across the country to realise the aim set out in the 2023 Environmental Improvement Plan that half of all journeys in towns and cities should be walked or cycled by 2030. This should be supplemented by efforts to improve the provision of public transport across the country to reduce emissions from car travel
- > provide everyone with access to a green space within 10 minutes of their home, building on the 15-minute pledge in the Environmental Improvement Plan and setting out a clear timescale and funding commitment to deliver this.

To ensure sustainability and climate change are prioritised across the NHS and health system:

- > the NHS constitution should be updated to include the net zero targets
 - > the link between climate change mitigation and improved health outcomes should be recognised and leveraged by NHS bodies and systems in national, regional and local health inequalities work
 - > initiatives to reduce the environmental impact of healthcare delivery within the NHS must be appropriately funded, including capital investment where necessary.



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