

TOOLKIT LANDING PAGE



A physician's guide to sustainable clinical practice

The climate crisis is a health crisis. It poses a significant and growing threat to human health. In the UK, rising temperatures, air pollution and the spread of vector-borne diseases are already affecting population health.

Those working in the NHS will be the first to see the health effects of climate change, if they have not done so already. A growing number of patients are presenting with conditions that are worsened by environmental factors and physicians must be prepared to respond.

The **Green Physician Toolkit** from the Royal College of Physicians (RCP) brings together evidence-based guidance and case studies to help you embed sustainable practices into everyday clinical practice.



The links between climate change and health

Building your understanding of the links between health and climate change is the first step towards becoming a green physician.

→ Explore

Actions to deliver more sustainable healthcare

There are actions that all physicians can adopt to reduce the environmental impact of healthcare and adapt to climate change.

→ Explore

RCP case study zone

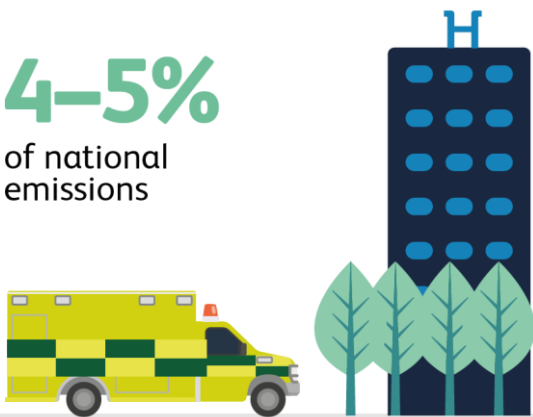
Explore the case study zone to see how NHS staff are taking action to reduce the environmental impact of healthcare delivery.

→ Explore

The **NHS in England** accounts for:

40% of public sector emissions

4–5% of national emissions



Why sustainable healthcare matters

Without strong action to cut emissions, UK temperatures [could rise by 2–3°C](#) by the end of the century – bringing more deadly heatwaves, rising illness, and overwhelming demand on NHS services.

The NHS is not only on the frontlines of the response to this crisis, but it is also a big contributor to it. In England, the NHS accounts for around 40% of public sector emissions and 4–5% of total national emissions.

Through the Health and Care Act 2022, the NHS in England became the first health system to legislate for net zero targets, committing to achieving net zero for the emissions it directly controls by 2040.

Since 2019/20, the NHS in England has [cut emissions by 14%](#). This is a strong start, but reaching net zero will require making every part of healthcare more sustainable. As one of the UK's largest public sector emitters, the NHS must lead this transformation.

Working across acute, outpatient and community settings, physicians are uniquely placed to drive this change. While prioritising sustainability can be difficult amid high clinical demand, doing so often enables better patient outcomes and can help reduce costs, through more efficient and low carbon care.

Prevention must be at the heart of this approach. Helping people to stay well reduces the need for costly, carbon-intensive healthcare and lowers the emissions and waste generated by treating avoidable ill health.

Policy and campaigns in Northern Ireland

Our 600 members in Northern Ireland work in hospitals and the community across 30 different clinical specialties – educating, improving and influencing for better health and care.

→ [Policy and campaigns in Northern Ireland](#)

Policy and campaigns in Wales

Over 1,500 members in Wales work in hospitals and the community across 30 different clinical specialties – educating, improving and influencing for better health and care.

→ [Policy and campaigns in Wales](#)

Get in touch

If you have any feedback or questions about the Green Physician Toolkit, please get in touch. We would welcome hearing more about any barriers you have faced in implementing sustainable clinical practice in your area of medicine – this will help the RCP to advocate the government and NHS to remove these barriers. **Please email policy@rcp.ac.uk.**

The Green Physician Toolkit was developed in consultation with a short-term clinical reference group, comprising of physicians from a range of specialties, as well as patient and academic representatives. Further feedback was provided by the RCP's advisory group on healthcare sustainability and climate change and approved by RCP Council prior to publication.

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Links between climate change and health



Climate change is mainly caused by the burning of fossil fuels (oil, gas and coal). This releases carbon dioxide and other greenhouse gases into the atmosphere, trapping heat and leading to:

- > increasing land and air temperatures
- > more frequent and severe extreme weather events
- > melting ice sheets and glaciers
- > warming oceans and rising sea levels
- > loss of biodiversity and degradation of ecosystems

The changing climate is already impacting the UK population's health:

- > Heatwaves caused 10,781 excess deaths in England between 2020–24. (1)
- > An estimated 30,000 deaths per year in the UK are attributed to air pollution – this compares to just over 1600 road casualties in the UK in 2024. (2, 3)
- > Adverse mental health impacts associated with flooding, including depression, anxiety and PTSD. (3)
- > Vector borne diseases – such as dengue fever, malaria and Lyme disease – are highly climate

Between 2020 and 2024,
heatwaves caused

10,781
deaths in England⁽¹⁾



Without action, the changing climate will worsen health outcomes

‘Heat-related deaths – with no additional adaptation and limited global decarbonisation – could increase nearly 6-fold from a 2007 to 2018 baseline average estimate of 1,602 deaths per year, to 10,889 in the 2050s.’

UK Health Security Agency – [Health effects of climate change in the UK: 2023 report](#)



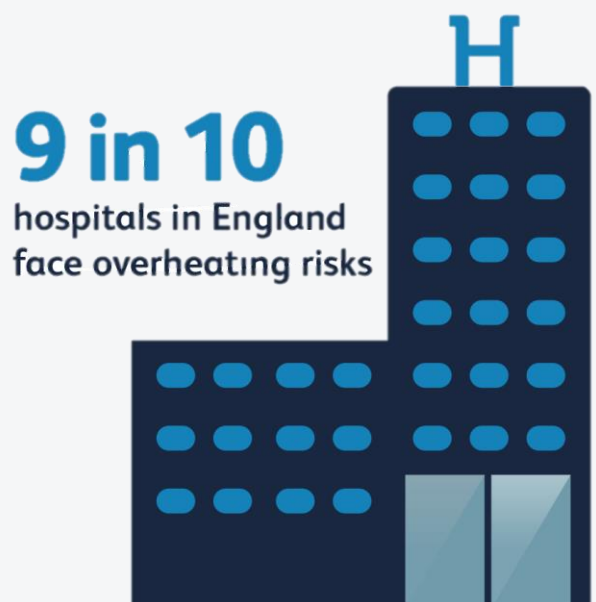
Some groups are more vulnerable than others and climate change risks exacerbating health inequalities:

- > Older people
- > Infants and children
- > People with existing health conditions and disabilities
- > Coastal and low-lying populations
- > People experiencing homelessness
- > Pregnant women and pregnant people
- > People in densely populated areas

Climate-related events like food insecurity and flooding affect low-income groups the most as they often lack the resources to adapt or recover, deepening health inequalities.

The NHS is currently unprepared to respond to climate change and ensure service delivery is maintained during adverse weather:

- > Around 90% of hospitals in England are at risk of overheating. (5)
- > In 2024, 25.5% of healthcare facilities in England were at risk of flooding – projected to rise to 31.5% by 2040–60. (6)
- > Service disruption is already happening – data system failure at Guy’s and St Thomas’ NHS Foundation Trust during a 2022 heatwave.



References

- (1) <https://www.gov.uk/government/publications/heat-mortality-monitoring-reports>
- (2) <https://www.rcp.ac.uk/policy-and-campaigns/policy-documents/a-breath-of-fresh-air-responding-to-the-health-challenges-of-modern-air-pollution/>
- (3) <https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2024/reported-road-casualties-great-britain-annual-report-2024>
- (4) <https://assets.publishing.service.gov.uk/media/657086ad746930000d488919/HECC-report-2023-chapter-3-flooding.pdf>
- (5) <https://assets.publishing.service.gov.uk/media/657086ad746930000d488919/HECC-report-2023-chapter-3-flooding.pdf>
- (6) <https://www.bmj.com/content/389/bmj.r1275>
- (7) <https://www.gov.uk/government/publications/national-assessment-of-flood-and-coastal-erosion-risk-in-england-2024/national-assessment-of-flood-and-coastal-erosion-risk-in-england-2024>

Information for applicants

Find out more about what you need to apply for the GMC sponsorship scheme, and access resources to help you here.

→ Resources for applicants

Information for employing bodies

Information about GMC sponsorship scheme for employing organisations, supervisors and medical staffing personnel.

→ Find out more

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Actions for sustainable healthcare



For the NHS to reach net zero by 2040, there will need to be significant changes to the way healthcare is delivered. Reaching net zero is critical to reduce the effects of climate change that negatively affect health and contribute to excess deaths.

Working across acute, outpatient and community settings, physicians are uniquely placed to lead the change and adopt more sustainable healthcare in their practice. In an RCP survey conducted in June, 61% of doctors said they are already considering the environmental impact of clinical decisions. Respondents highlighted several barriers for implementing sustainable healthcare, including a lack of time, lack of organisational support and gaps in training and awareness.

The RCP will continue to advocate for doctors to have the time, resources and training to deliver greener clinical care. But there are actions all physicians can take to help slow the pace of climate change and support patients to adapt to its effects. Making changes to your clinical practice – whether large or small – not only helps reduce the NHS’s carbon emissions but can improve patient care.

Green Physician Toolkit actions

The RCP encourages physicians to explore practical steps that make healthcare more sustainable. Physicians should use their judgement to apply actions suggested only when clinically appropriate and supported by available technology.

- Prescribing
- Telehealth
- Streamlining care
- Prevention
- Diagnostics
- Adaptation
- Waste
- Advocating

Medicines and prescribing account for 17% of the NHS carbon footprint in England. Every prescription and patient interaction is an opportunity to reduce the environmental impact of medicines. Physicians can:



- > prescribe lower carbon medicines
- > optimise medicines.

Prescribing

Telehealth

Streamlining care

Prevention

Diagnostics

Adaptation

Waste

Advocating

Patient, visitor and staff travel produces 11% of emissions in the NHS in England. Using telehealth when clinically appropriate can reduce unnecessary travel and cut carbon, while maintaining high-quality care that is convenient for patients. Physicians can:

- > offer remote consultations
- > remotely monitor clinical data.



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Prescribing

Telehealth

Streamlining care

Prevention

Diagnostics

Adaptation

Waste

Advocating

Many NHS appointments, tests and treatments bring little or no clinical benefit to patients. Each interaction with patients must add value – streamlining care can improve patient outcomes, avoid unnecessary travel, and reduce the NHS carbon footprint. Physicians can:

- > offer same day care and procedures
- > participate in multispecialty and multidisciplinary clinics
- > provide specialist advice about patient care
- > support patient-initiated follow-up.



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Poor health carries a significant human and economic toll, costing the NHS £12 billion a year due to [obesity and excess weight](#), and £27 billion from the health effects of [air pollution](#). This has significant environmental impacts, making prevention integral to sustainable clinical care. Physicians can:

- > help people to live well
- > suggest non-pharmacological interventions to counter the social and commercial determinants of health.

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Optimising the use of diagnostics in the NHS is an important element of sustainable healthcare. Several studies [\(1, 2, 3\)](#) suggest that some investigations may not be clinically necessary. Physicians can:

- > reduce unnecessary investigations.

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High temperatures, flooding, air pollution and extreme weather events will become more common due to climate change. It is a physician's responsibility to support their patients to protect themselves from the health impacts of these changes. Physicians can:

- > adapt care plans to take account of changing environmental factors
- > undertake medication reviews ahead of heatwaves
- > provide information to patients about protecting their health.



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Waste, water and refrigerants account for 1% of NHS England's emissions. Globally, 99% of clinical and laboratory plastic waste ends up in landfills or is incinerated. Tackling waste is essential – not only to achieve net zero targets but to cut costs, boost resource efficiency and enhance patient care. Physicians can:

- > reduce single-use products
- > ensure compliance with waste segregation
- > limit paper usage
- > recycle where possible.



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As senior clinical leaders, physicians are uniquely placed to drive the shift toward more sustainable healthcare. Across the NHS, small behavioural changes have already improved outcomes and efficiency, reducing costs and emissions. Scaling these actions – no matter how big or small – can drive system-wide change. Physicians can:

- > advocate for sustainable clinical practice
- > become a green champion or clinical sustainability lead
- > teach and educate others
- > embed sustainability into quality improvement.



Implementing sustainable healthcare

You can explore the RCP's guidance for delivering the Green Physician Toolkit actions below.

Prescribing

Prescribe low carbon medicines

- Prescribe dry powder inhalers (DPIs) as an alternative to metered-dose inhalers (MDIs).
- Prescribe reusable cartridge insulin pens.
- Prioritise prescribing oral medications – reserve IV medications only where oral is unavailable or not appropriate, and review IV antibiotics for oral switch using [national criteria](#).
- Identify and safely remove incorrect [penicillin allergy](#) labels after clinical assessment.
- Advocate for electronic prescribing systems in your organisation to display lower-carbon medicines first.

Optimise medicines

- Undertake structured medication reviews, deprescribing where medications are causing harm or are no longer of benefit to the patient, using validated tools such as the [STOPP/START criteria](#).
- Check medication adherence in every contact with patients.
- Enable shared decision-making through open communication with patients about their medicines.
- Follow the RCP's acute care toolkit for [managing multiple medications](#).

Telehealth

Offer remote consultations

- When technology for remote consultations is available, assess patients for suitability.
- Work with patients to determine the appropriate format (video, telephone, secure messaging, or face-to-face).

Remotely monitor clinical data

- Recommend remote monitoring to suitable patients during consultation, such as those who live rurally or where local services can support.
- Review patient data and act on abnormal changes.
- Ensure remote monitoring adds benefit to patient care, and that kits are low waste.

Streamlining care

Offer same day care and procedures

- Identify patients with urgent clinical needs.
- Arrange immediate investigations, treatments or minor interventions if a same-day clinical slot is available.

Participate in multispecialty and multidisciplinary clinics

- Identify opportunities to participate in these clinics.
- Coordinate schedules with other specialists to offer joint patient assessments.

Provide specialist advice about patient care

- Use agreed communication channels to respond to requests for specialist advice through platforms such as Advice and Guidance.
- Review the patient's history and relevant investigations before providing recommendations.

Support patient-initiated follow-up

- Inform patients what symptoms to look out for post-treatment, when they might need to seek further attention, and how to access follow-up support.
- Utilise patient-initiated and stratified, risk-based follow-up.

Prevention



Help people to live well

- Talk to patients about [eating healthy food](#), reduced alcohol consumption, regular exercise, quitting smoking, and addressing housing issues (eg dampness) to support overall health.
- Give patients concrete actions and signpost them to appropriate services (eg stop smoking services) to support them with following advice.
- Speak to and educate patients about the health effects of air pollution, including how to avoid it or reduce its impacts.
- Consider the wider determinants of health in your conversations with patients, as set out in the RCP's [Bridging the gap guidance](#).

Suggest non-pharmacological interventions to counter the adverse social and commercial determinants of health

- Recommend social and green prescribing, as well as [nature exposure](#), if available in your area.

Diagnostics



Reduce unnecessary investigations, such as tests and procedures that do not benefit patients clinically

- Utilise the Royal College of Radiologists' [i-Refer](#) guidelines to determine the most appropriate imaging investigations.
- Follow the Royal College of Pathologists' [minimal retesting intervals guidance](#).

- For patients with advanced illness or nearing end of life, prioritise investigations that positively impact care management and align with their overarching care goals.
- Before ordering investigations, carefully consider their clinical necessity, check if they have been done recently, and consolidate tests where possible to avoid duplication.
- Support shared decision making by talking with patients about when investigations are not clinically necessary.

Adaptation



Adapt care plans to take account of changing environmental factors

- When creating or reviewing care plans, consider incorporating advice about the patient's risk to environmental factors, such as hot weather or air pollution spikes.

Undertake medication review ahead of heatwaves

- Sign-up to the [UKHSA heat health alerts](#) and become aware of when heatwaves are expected.
- Identify patients at risk from heat-sensitive or dehydration-prone medications, utilising [Society of Acute Medicine's](#) guidance.
- Adjust doses or switch drugs where appropriate to reduce heat-related risks.

Provide information to patients about protecting their health in changing environments

- Give clear, condition-specific advice to help patients manage their health during heatwaves, cold weather and poor air quality days.

Physical waste

Reduce single-use products

- Use single-use products, such as gloves and gowns, only when necessary.
- Implement staff awareness campaigns to inform clinicians about reducing single-use products.

Appropriate use of waste hierarchy

- Make sure to use the right bin by following your organisation's clinical waste disposal guidance.

Limit paper use

- Where appropriate, share results, letters and patient information digitally, such as through the NHS App.
- Review and update workflows to minimise routine printing of notes or forms.

Recycle where possible

- Identify local medicine and medical equipment recycling schemes, such as in pharmacies.

Advocate



Advocate for sustainable clinical practice

- In your team or department, encourage adoption of sustainable clinical care and quality improvement projects.
- Engage with and support your organisation's clinical sustainability lead.
- Participate in the Centre for Sustainable Healthcare's [specialty networks](#).
- Encourage your organisation to ensure adequate time in job plans to upskill in sustainable healthcare and implement SusQI projects.
- Familiarise yourself with the principles of the triple bottom line and use this when advocating internally.

Become a green champion or clinical sustainability lead

- Look out for opportunities to become your team, department or organisation's green champion.

Teach and educate others

- Utilise the RCP's sustainability teaching toolkit to educate others.
- Share the RCP's sustainability [podcast](#) series with colleagues.

Embed sustainability into quality improvement

- Encourage the use of a sustainability lens into your organisation's improvement strategies.
- Consider [SusQI](#) as an approach for all quality improvement projects.

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RCP case study zone



Sustainable healthcare in action

See how sustainable healthcare works in practice. Our case studies showcase physicians and healthcare teams who have found practical ways to embed sustainability into their day-to-day clinical practice.

Explore the RCP's case study zone to discover what has worked elsewhere in the NHS and consider whether these actions could be adopted in your own organisation.

Case study repository

Across the UK, NHS staff are taking action to reduce the environmental impact of healthcare delivery. The RCP is building a repository of case studies to showcase and promote examples of sustainable healthcare in practice.

Case study

19/08/24

Case study



Sustainability of acute care in the north-west



"Bright" ideas from medical student placements



#GreenPhysicians

Engage with discussions featuring physicians who are integrating environmental sustainability into clinical care. These videos explore how frontline clinicians working in the NHS are making greener care a reality – and how you can too.



Ready to deliver sustainable healthcare in practice?

Get involved in [sustainable quality improvement \(SusQI\)](#) and research projects.

You can do this by:

- > **adopting one of the actions in the Green Physician Toolkit** as a SusQI project. This could involve implementing low-carbon practices, reducing waste, or improving resource efficiency in your area of work. Choose an action that aligns with your interests or clinical setting, tracking its impact using the SusQI methodology.
- > **identifying opportunities to participate in or initiate research** focused on sustainable healthcare. This might include evaluating the environmental impact of clinical pathways, studying patient outcomes in low-carbon care models, or collaborating with academic teams.



[Submit your own case study](#)

Already delivering sustainable healthcare?

We want to hear from you!

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