

Royal Pharmaceutical Society Greener Pharmacy Guides

Scoping Review

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Glossary

Adapted from Met office and Intergovernmental Panel on Climate Change (IPCC) report [1,2].

Adaptation	In human systems, this refers to the process of adapting to current or anticipated climate changes and their impacts, with the goal of reducing harm or taking advantage of beneficial opportunities.
Anthropogenic	Caused or produced by humans.
Carbon dioxide (CO₂)	A gas found naturally in Earth's atmosphere, which is also produced as a result of human activities like burning fossil fuels and land-use change. It is the main greenhouse gas generated by human actions.
Carbon dioxide equivalent (CO₂e)	CO ₂ e is a metric used to compare emissions from different greenhouse gases based on their global warming potential (GWP) by converting amounts of other gases to the equivalent amount of CO ₂ with the same global warming potential.
Carbon neutral	Net zero CO ₂ emissions are achieved when anthropogenic CO ₂ emissions are balanced globally by anthropogenic CO ₂ removals over a specified period.
Climate change	A change in the climate's mean and variability for an extended period of decades, or more.
Fossil fuels	Biomass lain down in the Earth millions of years ago, e.g. coal, oil, and natural gas, which when burnt produce CO ₂ .
Global warming	An increase in Earth's temperature, commonly referring to the observed continual rise since the early 20 th century.
Greenhouse gases (GHG)	Gases in the atmosphere, which absorb thermal infra-red radiation emitted by the Earth's surface, the atmosphere, and clouds e.g. water vapour, carbon dioxide, methane, and nitrous oxide.
Net zero emissions	When anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period.

Literature review

Background

In order to limit the risks of climate change, all nations at COP21 have signed up to the Paris Agreement 2015 to substantially reduce global greenhouse gas emissions, limiting global warming to 1.5°C rise above pre-industrial levels [3]. The United Nations Sustainable Development Goal 13 calls for urgent global action to combat climate change and its impacts [4]. The targets include improving education, awareness, and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning, integrating climate change measures into national policies, strategies and planning. The IPCC emphasises that deep, rapid and sustained reductions in greenhouse gas emissions are essential in all sectors, beginning now and continuing throughout this decade.

In 2021, 50 countries including the UK have committed to develop climate-resilient and low-carbon health systems at COP26 in Glasgow, in response to the growing evidence of the health impacts of climate change [5]. At COP28, more than 40 million healthcare professionals around the world joined WHO's call to action to prioritise health in climate negotiations [6].

The National Health Service's (NHS) carbon footprint is currently equivalent to 4.4% of England's total carbon footprint and the NHS Long Term Plan 2019 committed the NHS to reducing its emissions [7]. The Greener NHS Delivering a 'Net Zero' National Health Service report 2020 outlines NHS's ambition to reach net zero from direct emissions (NHS Carbon Footprint) by 2040, and zero emissions across the entire scope (NHS Carbon Footprint Plus) by 2045 [8]. The 2021/22 NHS Standard Contract mandated all integrated care systems (ICSs) and trusts to develop a Green Plan detailing their approaches to reduce their emissions in line with the national trajectories. The NHS Wales Decarbonisation Strategic Delivery Plan 2021 [9] sets out its decarbonisation pathways to be net zero by 2030 and the NHS Scotland climate emergency and sustainability strategy 2022-2026 [10] sets out its ambition to reach net zero by 2040 at the latest. The Health and Care Act 2022 incorporated net zero into legislation, mandating that commissioners and providers of NHS services in England specifically address net zero emissions targets. [11].

In December 2023, the UK Health Security Agency has published its fourth report on Health Effects of Climate Change in the UK [12] which provides evidence, analysis and recommendations based on climate change projections for the UK. Pharmacy professionals, as part of the wider multidisciplinary team, have important roles in mitigating and adapting to the health impacts of climate change. In 2022, the FIP has passed a statement of policy regarding environmental sustainability within pharmacy catered for various sectors including hospital and community

pharmacies [13]. The Department of Health and Social Care (DHSC) National Overprescribing Report 2021 [14] outlined a plan to reduce overprescribing to make patient care better and safer, support the NHS, and to reduce carbon emissions. Medicines account for a quarter of the NHS's carbon footprint with 3% attributable to inhalers, 2% to anaesthetic gases and 20% of other medicines in the pharmaceutical supply chain. It calls for a system action to address the carbon impact of unnecessary prescribing and medicines waste which includes procurement leverage to influence medicines manufacturers, suppliers and distributors to align with NHS's net zero ambition.

Net zero can only be delivered if they are supported by collective action from all NHS staff and collaborative partnerships within and beyond the NHS. Delivering a net zero NHS has the potential to secure significant benefits across the population, and particularly for vulnerable and marginalised populations, addressing existing health inequalities. There is also direct benefit for patients, with research suggesting that up to one-third of new asthma cases might be avoided as a result of efforts to cut emissions [8].

Initial development of guide and toolkit

The development of the Royal Pharmaceutical Society (RPS) Greener Pharmacy guide and toolkit is commissioned by NHS England in February 2023 supported by Greener NHS.

In 2021, the RPS has declared a climate and ecological emergency urging pharmacy professionals to take a leading role in reducing environmental impacts, especially from inappropriate use of medicines as part of their professional duties. Since then, the RPS developed sustainability policies, divested from fossil fuels, and published the Climate Change Charter to support pharmacy team members in committing to a more sustainable future. The RPS is a signatory to the Professional Bodies Climate Action Charter and a member of the United Kingdom Health Alliance on Climate Change (UKHACC). The RPS co-authored a letter with the International Pharmaceutical Federation (FIP) addressed to Heads of State and National Delegations at the 26th United Nations Climate Change Conference (COP26), showing their commitment to tackling climate change [15]. The updated RPS Hospital Pharmacy Standards in 2022 highlighted the need for sustainability to be underpinned in all aspects of hospital pharmacy services. With its leadership in this area, the RPS is well positioned to develop environment sustainability guidance for all pharmacies and pharmacy staff across the United Kingdom (UK).

This Scoping Review, and Greener Pharmacy guide for hospital and community pharmacies are developed in accordance to the RPS Professional standards, guidance and frameworks process development handbook [16].

Development timeline

Feb – Apr 2023	A scoping review for environment sustainability accreditation metrics used in the healthcare setting has been undertaken following the Arksey and O'Malley framework [17] to ensure the Greener Pharmacy guidance developed align with the methodologies and net zero targets set by NHS England and Greener NHS. A series of virtual meetings were also conducted between the lead author of the guidance and various developers of the greener healthcare guides and self-accreditation toolkits identified in UK health settings.
Aug 2023	The initial draft of the RPS Greener Pharmacy guides were shared with selective internal RPS staff and groups (RPS Hospital Pharmacy Expert Advisory Group, RPS Community Pharmacy Expert Advisory group) for review. An independent group with special interest in sustainability was also invited to provide their perspectives, with declarations of interests submitted. Feedback was collected through a series of virtual meetings with these groups.
Oct – Nov 2023	The revised draft version of the RPS Greener Pharmacy guides were published on the RPS website for a six-week public consultation period. Key stakeholder organisations were notified via email and press release and invited to provide feedback. The project team monitored the responses and sent reminders to encourage sufficient participation, ensuring that the feedback received would help refine the guides further.
Dec 2023	The project team collated and analysed all feedback from the consultation using thematic analysis and discussed the findings with NHS England Medicines Net Zero team to address conflicting views and suggestions. Decisions to include or exclude dissenting opinions were documented for internal reference. Development of the RPS Greener Pharmacy toolkit has begun, with a search for suitable web developers to determine the best way to integrate the guide's content into an interactive online interface.
Jan – Feb 2024	Final draft of the RPS Greener Pharmacy guides were submitted to NHS England and wider stakeholders for approval.
Mar 2024	The need for EqIA of the guides was identified during the public consultation process, prompting the lead author to carry out the assessment retrospectively. The revised final draft of the guides was then shared with the RPS Head of Belonging and ABCD group for feedback. A workshop was conducted to perform the EqIA assessment.
May - Dec 2024	The development of the RPS Greener Pharmacy toolkit began, with the project team holding weekly meetings with the contracted web developers to build the toolkit according to specifications. Multiple major pharmacy stakeholders have been shown the guides and toolkit for final reviews and feedback.
Jan 2025	Soft launch of RPS Greener Pharmacy guides and toolkit.

Scoping Review – Method

Primary research questions:

1. What environmental sustainability standards or metrics currently exist for pharmacies and pharmacy staff in the UK?
2. Are there existing environmental sustainability guidance or accreditation for pharmacies and pharmacy staff in the UK?

3. What existing healthcare environmental sustainability metrics can be adapted to develop the RPS Greener Pharmacy guides and toolkit?

Identifying relevant studies

The following search terms were used to examine titles, abstracts and keywords: ‘environment sustainability standards’ or ‘green metrics’ or ‘green accreditation’ or ‘sustainability metrics’ or ‘decarbonisation plan’ or ‘carbon reduction plan’. A search on websites in the UK relating to environmental sustainability in healthcare settings was conducted e.g. Greener NHS Knowledge Hub [18], Centre for Sustainable Healthcare [19], Green Impact for Health [20], Pharmacy Declares [21], SEE Sustainability [22], Sustainable Healthcare Coalition [23], Healthcare Ocean [24].

Study selection

Due to the limited availability of published peer-reviewed research on environmental sustainability in pharmacy settings within the UK, a comprehensive systematic review was not included in this scoping review. Most metrics were obtained via grey literature search using existing knowledge and sustainability networks of the subject matter experts.

The following resources were selected and appraised for shaping the development of the guides.

Global Road Map for Health Care Decarbonization [25]	
Author(s)	Healthcare Without Harm and Arup
Year of publication	2021
Location	https://healthcareclimateaction.org/roadmap
Access	Freely accessible
Target Groups	Global healthcare organisations
Aims	Identify a set of actions the health sector can take to aligning with the ambition of the Paris Agreement while achieving global health goals.
Outcome measures	<ul style="list-style-type: none"> • Power healthcare with 100% clean renewable energy. • Invest in zero emissions buildings and infrastructures. • Transition to zero emissions, sustainable travel, and transport • Provide healthy, sustainably grown food and support climate-resilient agriculture. • Incentivise and produce low-carbon pharmaceuticals; Implement circular healthcare and sustainable healthcare waste management. • Establish greater health system effectiveness.

RCGP Net Zero Guide [26] & SEE Sustainability Carbon Decarbonisation Guide [22]	
Author(s)	Dr Matthew Sawyer
Year of publication	2023

Location	https://elearning.rcgp.org.uk/course/view.php?id=650
Access	Guide is freely accessible
Target Groups	General Practices in the UK
Aims	Guide focusing on understanding and addressing non-clinical carbon within general practice
Methodology	Comprehensive list of quick and easy wins, long-term changes, how to take action and how to monitor and measure improvements. Supplements the Green Impact for Health Toolkit.
Outcome measures	<ul style="list-style-type: none"> • Energy • Travel • Information technology (IT) • Business Services • Waste • Procurement • Net Zero Action Plan

West Yorkshire Health and Care Partnership Pharmacy and Medicines Optimisation Green Plan [27]	
Author(s)	West Yorkshire Pharmacy Network for Sustainability and the Environment
Year of publication	2023
Location	West Yorkshire Health and Care Partnership Pharmacy and Medicines Optimisation Green Plan (wypartnership.co.uk)
Access	Freely accessible
Target Groups	West Yorkshire Pharmacy staff
Aims	In-depth review of activity and planning to reduce the environmental impact of medicines use and pharmacy practice associated.
Outcome measures	<ul style="list-style-type: none"> • Workforce and System Leadership • Education and Awareness • Respiratory • Anaesthesia • Antimicrobials • Overprescribing including wasted items • Supply Chain and Procurement • Digital Transformation • Travel and Transport • Estates and Facilities including Waste Management • Sustainable models of care • Adaptation planning

Net Zero Mental Health Care guidance and education [28]	
Author(s)	Royal College of Psychiatrists
Year of publication	2023

Location	https://www.rcpsych.ac.uk/improving-care/net-zero-mental-health-care-guidance-education
Access	Freely accessible
Target Groups	Psychiatrists, psychologists, mental health nurses, and all other staff involved in delivering mental health care.
Aims	Ensures staff have access to clear evidence, resources, and support to enable them to understand and deliver greener, more sustainable and net zero mental health care. Focuses primarily on carbon reduction rather than on 'preventative' care.
Outcome measures	<ul style="list-style-type: none"> • Keeping people healthy (e.g. access to green spaces, food and nutrition) • Right care, right place, right time (e.g. delivering treatment in alternative formats, preventing unnecessary use of care pathway) • Low carbon treatment and care settings (e.g. improved medication or prescription practices, waste reduction, reduce energy use) • Clinical leadership, systems and workforce (e.g. visible leadership from above, measuring and reporting carbon emissions, dedicated staff roles focused on net zero)

Green Surgery report [29]	
Author(s)	Royal College of Surgeons of England
Year of publication	2023
Location	Royal College of Surgeons of England Website
Access	Freely accessible
Target Groups	Members of the surgical team
Aims	To reduce the environmental impact of surgical care while maintaining high quality patient care.
Outcome measures	<ul style="list-style-type: none"> • Streamlining surgical patient care pathways • Optimising pre-operative care • Review energy use in theatres • Optimising built and maintenance of theatre environment. • Use of anaesthesia • Waste and recycling of products used in surgical care. • Clinical leadership and education

Go Green at Work [30]	
Author(s)	Trades Union Congress
Year of publication	2008
Location	https://www.tuc.org.uk/sites/default/files/extras/gogreenatwork.pdf
Access	Freely accessible
Target Groups	Trade unionists who have an interest in the environment, and particularly climate change.

Aims	Practical guide to taking action in the workplace.
Outcome measures	<ul style="list-style-type: none"> • Energy use • Transport • Waste and recycling • Water • Finance and investment • Procurement and supply chain • Policy and campaigning

Sustainable Dentistry [31]	
Author(s)	Sara Harford, Darshini Ramasubbu, Brett Duane, Frances Mortimer (Centre for Sustainable Healthcare)
Year of publication	2018
Location	How to Guide Dentistry-2 (sustainablehealthcare.org.uk)
Access	Freely accessible
Target Groups	Dental teams
Aims	Practical resource for dental teams wishing to take action making dental practice more sustainable.
Outcome measures	<ul style="list-style-type: none"> • Travel • Equipment and supplies • Energy • Waste • Biodiversity and green space • Measuring and embedding sustainability

The following resources were selected and appraised in detail for shaping the toolkit.

Green Impact for Health Toolkit (GiFH) [20]	
Author(s)	Students Organising for Sustainability (SOS-UK)
Year of publication	2014
Location	https://toolkit.sos-uk.org/greenimpact/giforhealth/login
Access	Individual user registration required
Target Groups	Any primary care services (it is noted some community pharmacies in Wales have undertaken this accreditation in 2022/23)
Aims	To improve the environmental sustainability and quality of any primary care organisation as well as financial savings.
Methodology	The toolkit lists over 100 actions where points can be accumulated to attain bronze, silver, gold and diamond statuses.
Outcome measures	<ul style="list-style-type: none"> • Energy Saving • Food & Drinks • Governance • Healthy Planet • Learning • News & Communication • Prescribing

	<ul style="list-style-type: none"> • Quality Improvement • Social Prescribing • Travel & Exercise • Vulnerable Groups • Waste & Recycling • Water • Zero Carbon
Important results	Over 1,500 UK general practices have taken part since 2014.

Greener Primary Care Wales Framework and Award Scheme [32]	
Author(s)	Primary Care Division, Public Health Wales
Year of publication	2022
Location	https://primarycareone.nhs.wales/topics1/greener-primary-care/
Access	Individual user registration required
Target Groups	Community pharmacy, dental, general practice and optometry
Aims	Helping primary care contractors to improve the environmental sustainability of their day-to-day practice.
Methodology	The toolkit lists over 50 actions where points can be accumulated to attain bronze, silver and gold statuses.
Outcome measures	Similar to Green Impact for Health toolkit as above.

Green ED Framework [33]	
Author(s)	Royal College of Emergency Medicine (RCEM) Environmental Specialist Interest Group (ESIG)
Year of publication	2022
Location	https://greened.rcem.ac.uk/GreenED/Sign_In.aspx
Access	Individual user registration required
Target Groups	Anyone working in Emergency Medicine (EM)
Aims	Creating framework that drive operational sustainability whilst maintaining or improving patient care and potentially deliver financial savings in EM that feeds into wider sustainability targets at both Trust and a national level.
Methodology	Simple framework contains immediate (bronze), medium (silver) and long term (gold) actions EM staff can take to integrate environmental sustainability into everyday practice.
Outcome measures	<ul style="list-style-type: none"> • People • Waste • Medicines Use • Care • Travel • Energy • Recycling • Information Technology (IT)

Planetary Health Report Card (PHRC) [34]	
Author(s)	Karly Hampshire, Bennett Kissel, Nuzhat Islam, and Colin Baylen (Medical Students in the United States of America)
Year of publication	2019-2020
Location	https://phreportcard.org/metrics/
Access	Freely accessible
Target Groups	Healthcare students (currently published reports from Medical, Nursing, Physiotherapy and Pharmacy)
Aims	Student-driven metric-based tool to evaluate health professional schools on discrete metrics.
Methodology	Self-accredit points system (0 – 3 points) with descriptors for each metric under various domains conducted by students in each school.
Outcome measures	<ul style="list-style-type: none"> • Curriculum • Interdisciplinary research in health and environment • Community outreach and advocacy • Support for student-led initiatives • Campus sustainability

Green Dentistry Global [35]	
Author(s)	Davinder Raju, Co-Founder of Greener Dentistry
Year of publication	2023
Location	https://www.greenerdentistry.global/page/certification
Access	Individual user registration required
Target Groups	Oral healthcare teams
Aims	Global initiative that uses the collective power of dental practices as a force to promote environmental and social well-being.
Methodology	Online toolkit providing step-by-step guide to easy improvements working towards bronze, silver or gold level accreditation
Outcome measures	<ul style="list-style-type: none"> • Waste & recycling • Biodiversity • Health & wellbeing • Travel • Water • Energy • Staff engagement & development • Data and procurement

LEAF (Laboratory Efficiency Assessment Framework) [36]	
Author(s)	University College London (UCL)
Year of publication	2020
Location	https://www.ucl.ac.uk/sustainable/take-action/staff-action/leaf-laboratory-efficiency-assessment-framework

Access	Selective metrics freely published on UCL website, full outcome measures upon request and verification via emailing host followed by individual user registration.
Target Groups	Staff working in laboratories
Aims	Improve sustainability and efficiency of laboratories.
Methodology	Online platform for labs to estimate carbon and financial savings based on their actions for the award level sought (Bronze, Silver, or Gold).
Outcome measures	<ul style="list-style-type: none"> • Waste • People • Sample & Chemical Management • Equipment • Ventilation

In-centre haemodialysis carbon calculator [37]	
Author(s)	Sustainable Healthcare Coalition, Newcastle upon Tyne Hospitals NHS Foundation Trust, Astra Zeneca
Year of publication	2022
Location	https://ichdcarbon.org/
Access	Individual user registration required
Target Groups	Nephrology teams
Aims	For in-centre haemodialysis service centres to assess their own carbon footprints, and identify where to focus efforts to change.
Methodology	Free text data to be entered for various outcome measures and converted via in-built carbon calculator to produce a final carbon footprint report.

Climate change and health scorecard [38]	
Author(s)	Eleanor Cooke, Amelia Cussans, Alice Clack, Chester Cornford
Year of publication	2022
Location	https://www.sciencedirect.com/science/article/pii/S2667278222000530
Access	Freely accessible
Target Groups	UK health organisations and educational institutions
Aims	Establish what progress has been made by UK health organisations and identify areas requiring further actions.
Methodology	Survey consisted of 31 questions with a maximum score of 64 points. Further analysis for each of the four domains with a traffic-light scorecard produced for each (red, amber, green).
Outcome measures	<ul style="list-style-type: none"> • Advocacy • Divestment • Education and training • Internal operations

Global Green and Healthy Hospitals (GGHH) Connect [39]	
Author(s)	Healthcare without Harm

Year of publication	2022
Location	https://greenhospitals.org/gghh-connect
Access	Individual user registration required
Target Groups	Community pharmacy, dental, general practice and optometry
Aims	Support healthcare institutions around the world in promoting and creating greater sustainability and environmental health while improving the health of patients, community and the planet.
Methodology	Data centre where organisations can track, store, and visualise their sustainability data on a secure web-based platform. GGH members have access to discussion forums, guidance documents, webinar recordings, and case study library.
Outcome measures	<ul style="list-style-type: none"> • Leadership • Chemicals • Waste • Energy • Water • Transportation • Food • Pharmaceuticals • Buildings • Purchasing

Green physician toolkit [40]	
Author(s)	Royal College of Physicians
Year of publication	2024
Location	https://www.rcp.ac.uk/policy-and-campaigns/policy-documents/green-physician-toolkit/
Access	Freely accessible
Target Groups	Physicians
Aims	Raise awareness of sustainability agenda and highlight case studies across NHS for physicians to adopt actions into day-to-day practice.
Methodology	4 tools suggesting a range of actions that physicians can take in their day-to-day practice to help mitigate and adapt to the impacts of climate change.
Outcome measures	<ul style="list-style-type: none"> • Education and awareness • Clinical practice • Policies and strategies

Collating, summarising and reporting the results

An increasing number of guides, metrics, and toolkits are being developed by various organisations to decarbonise the healthcare sector, each employing different methodologies and databases for carbon calculations. Businesses including the RPS has commissioned external consultancies to draw up their net zero strategies, corporate sustainability reporting, carbon foot printing and

science-based target developments. In England, the Green Plans published for hospitals and ICS differ across regions, reflecting local priorities. This variation makes it challenging to develop a toolkit that can be uniformly applied across the UK.

The sustainability metrics created by various organisations were customised for each specialty, incorporating expert input from relevant healthcare sectors. When selecting the six domains for the Greener Pharmacy guides, the most reported outcome measures were considered. Reporting requirements differed among organisations, ranging from simple binary questions to detailed free-text submissions on various web platforms to demonstrate metric achievements. The design and presentation of metrics also varied between organisations.

Considerations for developing the guides

The guides will be refined and reviewed in the future based on feedback from hospital and community pharmacies that participate in the self-accreditation process. As noted in the Delivering Net Zero Mental Health report [28], while some of the evidence underpinning this guidance is from the NHS in England only, the principles and recommendations are applicable across other nations in the UK and in countries with similar healthcare systems.

The actions in the guide have been mapped to the General Pharmaceutical Council's Standards for registered pharmacies (2018) [41] as follow:

Principle 1	
The governance arrangements safeguard the health, safety and wellbeing of patients and the public.	<p>Actions to review risks associated with pharmacy services provision such as preventing AMR from inappropriate antimicrobial disposal in the premises (e.g. liquid antibiotics down the sink) could be identified and appropriately managed. Some actions ensure the safety and quality of pharmacy services are reviewed and monitored. e.g. Reduce medicines waste by managing repeat dispensing to prevent over ordering or over supplying.</p> <p>Premises should hold appropriate indemnity or insurance arrangements for pharmacy service provisions as part of business continuity plans adapting to climate change impacts.</p>
Principle 2	
Staff are empowered and competent to safeguard the health, safety and wellbeing of patients and the public.	<p>Actions recommending healthy living pharmacy promotion or optimising respiratory care require staff to have the appropriate skills, qualifications and competence for their role and tasks they carry out.</p> <p>Where there are sustainable quality improvements identified to reduce waste or inefficient pharmacy practices, staff should be</p>

	empowered to provide feedback and raise concerns about meeting standards of service provision.
Principle 3	
The environment and condition of the premises from which pharmacy services are provided, and any associated premises, safeguard the health, safety and wellbeing of patients and the public.	Actions recommending appropriate waste and recycling facilities or addressing issues with the pharmacy infrastructures (e.g. leakages from taps wasting water or inadequate thermoregulation wasting energy) ensure pharmacies are safe, clean, properly maintained, and suitable for the pharmacy services provided. This also complies with pharmacy services being provided in an environment that is appropriate for the provision of healthcare.
Principle 4	
The way in which pharmacy services, including the management of medicines and medical devices, are delivered safeguards the health, safety and wellbeing of patients and the public.	Actions recommending updating the opening hours and advertising wide range of clinical services the pharmacies provide to patients and the public ensure they do not travel unnecessarily (increase CO ₂ e) to A&E or Urgent Care to access basic healthcare needs. Actions such as returning all pharmaceutical waste including inhalers back to pharmacies ensures medicines and medical devices are disposed of safely and securely whilst reducing environmental pollution.
Principle 5	
The equipment and facilities used in the provision of pharmacy services safeguard the health, safety, and wellbeing of patients and the public.	Actions recommending equipment and facilities in pharmacy premises are fit for purpose and appropriately maintained can reduce energy use and waste of resources. It is also recommended that equipment and facilities are obtained from a reputable source, ideally in line with the NHS Net Zero Suppliers roadmap to procure sustainably.

Considerations for developing the toolkit

The 2021 annual survey conducted by RPS and Pharmacist Support revealed that 89% of the pharmacy workforce were at high risk of burnout and reported stress due to staff shortages and high demand for pharmacy services [42]. This issue was also highlighted in feedback from the public consultation and RPS internal groups. With this in mind, the initial development and roll out of the toolkit are designed to be straightforward and user-friendly to encourage widespread participation from both community and hospital pharmacies. The toolkit will not collect data already reported by organisations, such as those reported on the Greener NHS Dashboard, to prevent duplication of effort. Instead, it will aim to capture some baseline carbon footprints data of pharmacies and case studies of good sustainable practice. Some pharmacies may be contacted in the future for RPS to promote their sustainable achievements or seek permission to use resources that can promote broader engagement towards achieving net zero.

Equality Impact Assessment (EqIA)

The EqIA of Greener Pharmacy guides was conducted according to RPS EqIA Guidance [43]. An EqIA workshop was conducted in June 2024 with volunteers from the RPS Action in Belonging, Culture and Diversity (ABCD) group. The impacts upon protected groups defined by the Equality Act 2010, along with considerations for other groups are detailed on the [RPS Greener Pharmacy web page](#).

Limitations

Due to resource constraints and the growing number of resources published within this field as the guide and toolkit develops, it is not feasible to include all decarbonisation or net zero plans and environment sustainability metrics in this scoping review. Metrics that are behind paywalls or require user registration cannot be accessed or evaluated. However, the guides and toolkits selected for appraisal are supported by comprehensive, evidence-based research and have been written by subject matter experts.

Conclusions

Whilst it is vital for all pharmacy staff to work towards the NHS net zero targets, the sustainability metrics developed should not be overly complex, as this could deter staff from voluntarily engaging with the toolkit. The Greener Pharmacy guides will be developed with action points addressing carbon hotspots, informed by the NHS England Delivering Net Zero report and this scoping review. Further development of the guide and toolkit for community and hospital pharmacies will require input from all users who have completed the self-accreditation process.

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