

NICE Listens: Public dialogue on environmental sustainability

Final report

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1.Executive summary

In September 2022, the National Institute for Health and Care Excellence (NICE) commissioned Basis Social to conduct a NICE Listens dialogue to explore public opinion on how NICE should account for environmental sustainability in its decision-making and guidance.

The dialogue took place between 5th October and 16th November 2022 and involved 28 members of the public, recruited to reflect a range of backgrounds. Participants took part in three online workshops, engaged in an online community which ran alongside the workshops, and completed a range of additional pre- and post-workshop tasks via the online community platform.

This report presents the findings of the NICE Listens dialogue. The findings are presented in 3 parts:

1. Contextual factors influencing attitudes towards making healthcare more sustainable

This section provides an overview of the values, beliefs, knowledge, and attitudes that participants brought with them to the dialogue, which help explain their attitudes towards making healthcare more environmentally sustainable. The findings show that:

- participants were aware of the threats posed by climate change
- participants had limited awareness and understanding of the links between health, healthcare and the environment
- participants were highly conscious of many of the challenges facing the NHS
- many participants believed in the value of taking personal responsibility for health
- many participants expressed distrust in institutions, especially powerful corporations (for example, the pharmaceutical industry)
- some participants were concerned that sustainability initiatives would lead to more top-down regulation, restrictions in personal consumption, and lower quality products and services.

2. Attitudes towards making healthcare more sustainable

This section presents findings from discussions with participants after they had learned more about the ways in which healthcare could be made more sustainable, including the benefits and trade-offs associated with different options. The findings show that:

- support for making healthcare more sustainable increased as participants learned more about healthcare's contribution to climate change and recognised that environmentally sustainable actions can help reduce burdens on the NHS
- when given a choice, participants commonly preferred more environmentally sustainable care options – however, these preferences were primarily driven by co-

benefits of sustainable care, such as reduced burdens on the NHS, while environmental benefits were viewed as a secondary bonus

- perceived risks to patient health constituted the most common barrier to support for more sustainable care options
- participants expressed universal support for approaches to environmental sustainability that enabled patient choice and were divided over those that limited or removed choice
- support for sustainable care options increased when participants viewed sustainability within healthcare from a 'citizen perspective', as opposed to a 'patient perspective'.

3. How people would like NICE to act regarding the environmental sustainability of healthcare

This section outlines participants' views about how NICE should act regarding the environmental sustainability of healthcare. The findings reflect the views of participants at the end of the dialogue, after they had been given time to deliberate and reflect upon everything they had learned about the relationship between health, healthcare and the environment. The findings show that:

- participants believe NICE has a responsibility to make healthcare more sustainable – but not at the expense of ensuring access to high quality, effective care
- participants believe NICE has a responsibility to influence the supply chain to prioritise greener interventions – but again not at the expense of ensuring access to care
- participants support NICE taking steps to reduce the provision of care that provides no benefit but are more cautious about the concept of 'minimal' benefit
- participants strongly support NICE making recommendations that promote healthy behaviour and prevent ill health, to reduce need for prescription medicines and more intensive care in the future
- participants believe that NICE's decisions should account for the health outcomes of a range of groups, including future generations and people living outside of England – but also believe the health of people currently receiving care should be weighted highest
- participants believe it is acceptable for NICE to consider the environmental impacts of new interventions in cases where effective interventions already exist – however, where there is an unmet need for an intervention, they believe it is not acceptable to do so
- likewise, some participants would accept longer delays to NICE making recommendations about new interventions (so that the evidence base is better established and NICE can be more certain about the benefits of the intervention before incurring the environmental cost) but only in cases where effective interventions already exist
- some participants believe it is acceptable for NICE to consider the environmental impacts of new interventions for less severe conditions – however, for conditions known to have severe impacts on patients, they believe it is not acceptable to do so

- most participants believed it is acceptable for NICE to recommend an intervention that is more environmentally sustainable but more expensive to the NHS compared to alternatives (and vice versa), if the financial costs/savings are within a certain threshold
- if 2 interventions are comparable in terms of clinical and cost effectiveness, participants believe NICE should recommend the greener option as the default
- participants believe it can be appropriate for NICE to recommend the removal of specific care options from the choice set presented to patients for environmental reasons – but only when other effective care options are available
- participants support informing people about the environmental costs of care options during shared decision-making. However, they would also like other factors to be taken into account, such as patient circumstances, avoiding coercion, and healthcare professionals' time and expertise.

2. Background, research objectives and approach

2.1 Background

In 2020, the NHS launched its campaign *For a Greener NHS* and commissioned an Expert Panel, chaired by Dr Nick Watts, to set out a practical, evidence-based and quantified path to a 'net zero NHS'. This work, consisting of a national consultation with patients and staff, and engagement from across the NHS, culminated in the publication of the report ['Delivering a 'Net Zero' National Health Service'](#), which set out a strategy and 2 clear targets for the NHS:

- net zero by 2040 for the emissions the NHS controls directly
- net zero by 2045 for the emissions the NHS can influence.

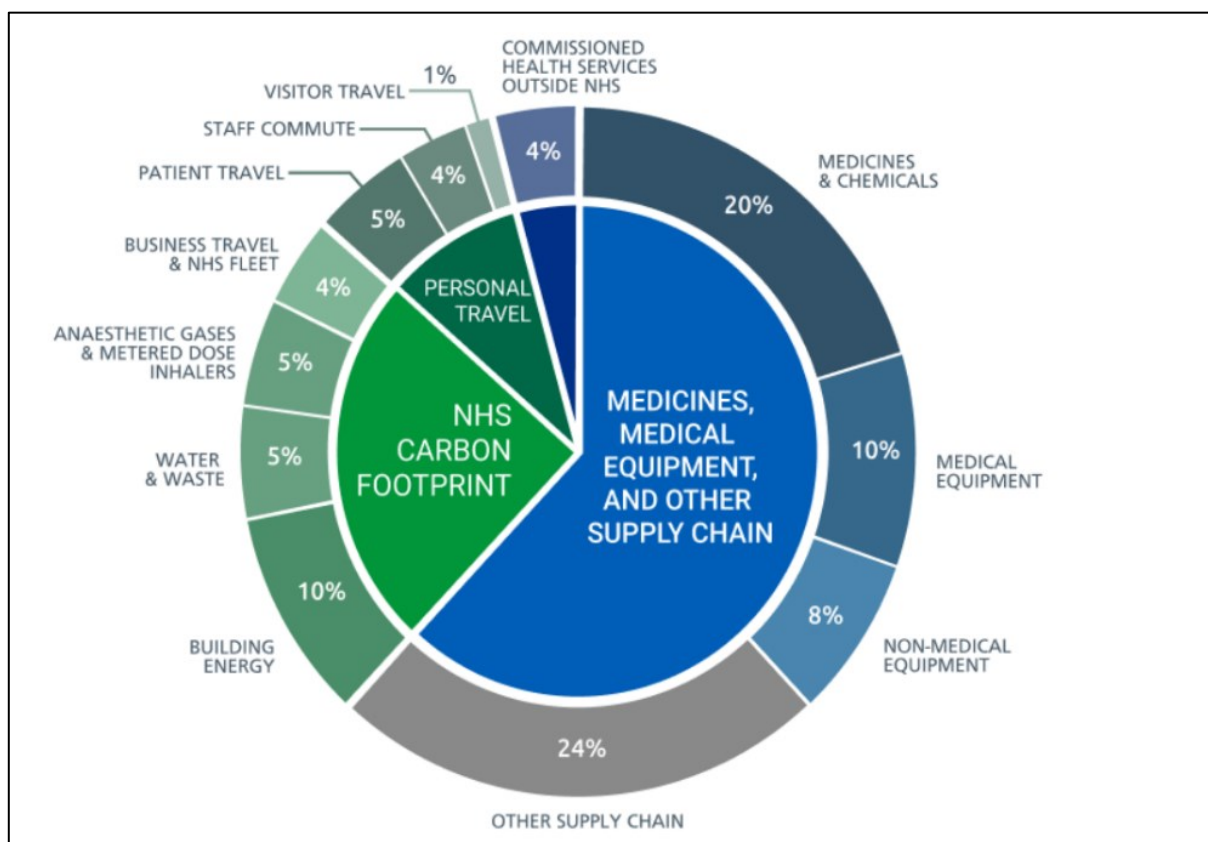
Underpinning the NHS's net zero strategy is an understanding that climate change and environmental degradation undermines the core foundations of good health, contributing to cardiovascular disease, asthma and cancer, among other conditions. Action to tackle climate change can reduce the burden of disease from air pollution, obesity, and poor diet whilst addressing health inequalities experienced across the country.

Currently, [healthcare contributes approximately 5% of the UK's total greenhouse gas emissions and is responsible for between 4 and 5% of global greenhouse gas emissions](#).

Findings from the NHS's 'Net Zero' report illustrate the variety of sources of healthcare-related greenhouse gas emissions. These include medicines and chemicals (responsible for 20% of NHS greenhouse gas emissions), medical and non-medical equipment (10% and 8%, respectively), as well as sources like building energy (10%), anaesthetic gases and metered dose inhalers (5%) and various forms of travel (10%). See **Error! Reference source not found..**

This diversity means that the NHS's (and global healthcare's) pathway to net zero demands action on multiple fronts, on all aspects of the supply chain, including disposal of waste. All of this will have impacts on people and their experience of the healthcare system.

Figure 1: Sources of carbon emissions as a percentage of NHS carbon footprint
(reproduced from the report [NHS England \(2020\) Delivering a 'Net Zero' National Health Service](#))



Limited research has been conducted into public views on the importance of environmental sustainability in healthcare. In 2021 the Health Foundation commissioned a [nationally representative survey of 1,858 UK adults about their views on climate change, health and sustainable healthcare](#). While the public was found to be concerned about climate change and supportive of the NHS net zero ambition, sustainability did not feature high on the list of their priorities for the NHS. When exploring sustainable actions that the NHS could take in more detail there was a clear red line for participants, with any actions that impact individual care (in terms of treatments being made available) drawing significantly less support than actions not affecting individual care. Around half (52%) of people surveyed by the Health Foundation supported the NHS focusing more on preventing illnesses to achieve net zero emissions. Support for a focus on prevention was also expressed by participants in [the previous NICE Listens dialogue on health inequalities](#).

The National Institute for Health and Care Excellence (NICE) is a non-departmental public body of the Department of Health and Social Care (DHSC). [NICE's role](#) is to provide national guidance and advice using the best available evidence, to improve outcomes for everyone. Consequently, NICE plays an important and influential role in shaping what treatments, technologies and processes the NHS adopts, setting best practice for healthcare professionals. By virtue of its international reputation and role in appraising new healthcare, NICE, in

conjunction with the NHS and DHSC, can exert influence over the direction of global healthcare supply chains and its national counterparts in other countries.

These characteristics make NICE well placed to support the NHS to reach net zero, and to provide a leading role for healthcare globally on its path towards environmental sustainability. In practice, this could mean many different things, for example, updating NICE's core principles on how it makes decisions, making technical changes to its appraisal and guideline development processes, and developing further guidance and materials to support healthcare professionals to discuss environmental sustainability with patients.

Whether and how the NHS reduces its environmental impacts are questions that will have far-reaching consequences, both for people living today and for future generations. It is important for NICE's decisions to be informed not just by scientific evidence, but also by understanding the values and priorities of a wide range of stakeholders, including the general public. This NICE Listens dialogue therefore offers a timely opportunity to understand the views of the public around NICE's role in helping healthcare to address climate change.

2.2 Research objectives

The primary aim of the NICE Listens dialogue was to explore public opinion on how NICE should account for environmental sustainability in its decision-making and guidance. Research questions guiding the design of the dialogue included:

1. How aware and concerned are members of the public around the impact the healthcare system has on the environment?
2. In what circumstances or situations, if any, do the public feel sustainability is relevant for NICE to consider?
3. What are the public's views on the relative importance of health and environmental effects, and how do they view potential trade-offs between health gains, environmental gains and cost?
4. What other factors may influence these opinions, for example, timing/timeframe of health and environmental benefit, individual vs. population level actions or effects, effect of environment on health?
5. To what extent, if any, would the public like to be informed about the environmental impact of their care during shared decision-making?

2.3 Research approach

Public dialogue is a form of deliberative group discussion that recognises the value that members of the public can add to decision-making around policy, legislation, and regulation. It is a particularly useful way of understanding public attitudes, views, and priorities around complex issues or controversial topics. It is characterised by:

- the involvement of people from a large cross-section of society selected to reflect a diversity of characteristics and views
- the exploration of views through a process of deliberation, where participants are given

information that helps them consider and debate issues in more depth

- extended and/or reconvened sessions involving plenary and small group discussions (and supporting activities)
- the involvement of experts on relevant topics to inform people's views
- time for participants to reflect on what they have heard and discussed, and to develop their views in relation to others' views.

Public dialogue is also a means by which those in power can engage meaningfully with citizens to find solutions to societal challenges. Further information on public dialogue approaches, principles and good practice can be found on the [Sciencewise website](#) and the [OECD report 'Good Practice Principles for Deliberative Processes for Public Decision Making'](#).

The NICE Listens dialogue began with 28 participants, falling to 23 by the end of the dialogue due to drop-outs. Participants were recruited to reflect a range of backgrounds. Participants completed several tasks and attended 1 two-hour and 2 three-hour long online workshops between 5th October 2022 and 16th November 2022.

2.3.1 Sample

The sample design accounted for standard socio-demographics of England, and aimed to ensure an approximately even spread by age, region and household income. The design also overweighted the representation of minority ethnic groups, to ensure their views were reflected in sufficient detail. Given the nature of the topic, it also included quotas to ensure that the following groups were represented:

- people who have health issues that are known to be impacted by the environment (for example, asthma, any other respiratory condition, and cardiovascular conditions)
- people who have received medical treatments that are known to have an excessive impact on the environment (for example, inhalers and anaesthetic gases).

Note that the aim was not for the sample to be statistically representative of the English population, but instead to enable a breadth of views to be captured, including from individuals with lived experience of the ways in which the environment impacts health, and healthcare impacts the environment. Please see appendix 1: participants profile, for a breakdown of the 23 participants who participated in all 3 phases of the dialogue.

All participants were recruited using free-find methods by Acumen Research, qualitative recruitment specialists. This included using the website 'Take Part In Research' to achieve organic targeting, and targeted emails to existing panel members to focus on the most relevant profile types.

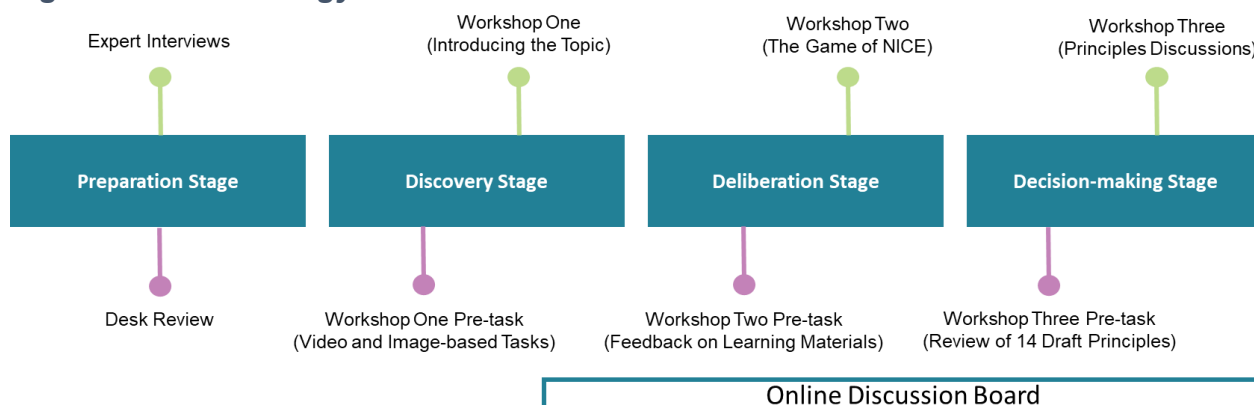
Participants were provided with detailed information about the project and a consent form outlining the purpose of the public dialogue, what their participation would involve, and how their data would be managed and used. Participants were recruited to meet a set of pre-agreed quotas on a 'first come, first served' basis. Participants each received an incentive of up to £250, depending on their attendance at the workshops and participation in offline tasks. This was clearly communicated at the point of recruitment. Incentives were paid following each

workshop. 23 of 28 participants received the full incentive amount.

2.3.2 Process overview

The dialogue was run from 5th October 2022 until 16th November 2022. This involved 3 workshops, each taking place 3 weeks apart, supported by asynchronous, online engagement tasks between workshops. The dialogue was supported by [Incling](#), an online community platform designed for running research projects. Basis Social used Incling to manage engagement with participants and enable tasks asynchronous to workshops. Figure 2 provides a visual overview of the process.

Figure 2: Methodology overview



To inform the design of the dialogue, Basis Social conducted a rapid literature review and a series of online interviews with 10 experts working at the intersection of health, healthcare and environmental sustainability (preparation stage).

Building on these initial learnings, the dialogue itself was iterative and exploratory. Each workshop was designed to be responsive to the discussion in the previous workshops, the online discussion board, and responses to the online tasks. The 'shape' of the dialogue aimed to focus initial engagement on introducing participants to the topic (discovery stage), then to allow time and space for further learning and deeper debate (deliberation stage) and, finally, consensus-building towards the end of the dialogue (decision-making stage).

For further information about each of the 4 stages, see appendix 2: methodological notes. Additionally, all materials used during the dialogue can be found in the methodology annex. This includes details on tasks participants completed outside of the workshops. It also includes the topic guides and stimulus used during the workshops. Stimulus is material used to prompt participants and encourage responses and discussions, and can be in many formats, such as photos and videos.

2.3.3 'The game of NICE'

The following methodological information is provided here because it is necessary for the interpretation of the subsequent results. The same information is provided in appendix 2: methodological notes.

'The game of NICE' was a simple online board game in which participants learned about

different actions NICE could take to help make healthcare more environmentally sustainable, debated these actions, and then voted for their preferences in the context of different healthcare situations presented to them. Participants played 'The game of NICE' during the second workshop, as part of the deliberation stage. During the game, participants were presented with 6 different actions in total, comprising a mix of real-life and hypothetical examples of things that NICE could do to improve the sustainability of healthcare. These were:

action 1: choice of anaesthetic – providing patients with information and the choice of receiving a local anaesthetic via a spinal injection as an alternative to general anaesthetic

action 2: advice on green inhalers – providing patients with information and the choice of managing asthma using a dry powder inhaler (DPI) instead of a pressurised metered dose inhaler (PMDI)

action 3: remote consultations – switching to remote, virtual consultations as an alternative to face-to-face

action 4: 'watch and wait' approach – GPs advising patients to wait 48 hours to see if a condition improves on its own, instead of prescribing antibiotics immediately

action 5: social prescribing – an approach to managing health risks via lifestyle modifications (for example, diet and physical activity) to reduce the need for pharmacological intervention

action 6: accounting for sustainability – updating NICE's appraisal process to formally account for the environmental impacts of a new intervention.

All the actions and included in the game were co-designed by Basis Social and the NICE Steering Group for the project, to ensure they remained grounded in reality.

For each action, participants were asked to deliberate from 2 perspectives:

- **patient perspective:** first, participants were asked to imagine they were a person in need of care (or, in the case of action 6, someone who might one day require care) and had to choose which of 2 care options (one more sustainable, one less so) they would prefer and why
- **citizen perspective:** second, participants were asked to imagine they were part of a NICE advisory committee reviewing a specific recommendation that NICE could adopt to encourage a systems-wide shift towards the greener option.

These 2 perspectives reflect the fact that actions to make healthcare more sustainable will have an impact on multiple groups. They will affect patients, for example, by changing their experience of care and the care options they receive. They will also affect the wider population (in England and globally) and future generations, for example, by reducing healthcare's contribution to the climate crisis. Therefore, by making participants adopt 2 perspectives, 'The game of NICE' was designed to encourage them to think holistically about the impacts of sustainable healthcare, rather than just from 1 vantage point.

For further information about why a gamification approach was adopted for this dialogue, see appendix 2: methodological notes. The rules and contents of 'The game of NICE' can also be

accessed directly via the methodology annex.

2.3.4 Analysis

Each discussion group was moderated by a researcher from Basis Social and the audio, video, and chats were recorded. Permission to record the sessions was requested in the consent form before beginning the project as well as verbally at the beginning of each workshop.

Following each workshop, the researcher completed an analysis 'pro-forma' for their breakout group. This was a document developed by the project lead following each workshop to capture and compare findings, insights and observations from across the breakout groups to identify key emerging themes. These themes, in turn, informed the development of the code-frame used to systematically code and analyse the data gathered during each workshop. This coding process was performed using computer-assisted qualitative data analysis software to assist with transcription analysis, coding and text interpretation.

Selected members of NICE staff were able to view the workshops live as silent observers, and following each workshop, an analysis session was held between these NICE representatives and the lead researchers from Basis Social. These sessions helped inform the next workshop and any associated tasks, as well as any analysis and reporting.

An initial report outline was developed to allow NICE to review and provide feedback. The full report was then written using the outline as a guide with continuous reference back to the findings and quotes.

3. Contextual factors influencing attitudes towards making healthcare more sustainable

This section presents 6 findings that help to explain participants' attitudes towards making healthcare more environmentally sustainable. Such attitudes do not form in isolation. Instead, they are influenced by what people already believe and the attitudes they hold towards related topics, such as health, healthcare, and climate change. People also generally seek consistency among beliefs and attitudes.

Understanding the beliefs and attitudes that people brought with them to the dialogue provided valuable context for explaining why they may have held certain viewpoints towards making healthcare more environmentally sustainable.

3.1 Participants were aware of the threats posed by climate change

Participants entered the dialogue aware of a range of climate change impacts, both in the UK and internationally, at both personal and systems (for example, food and weather systems) levels. In the UK, the most referenced effects included increased incidences of extreme weather events (especially flooding and heatwaves; participants noted that the summer of 2022 had been unusually hot in the UK), coastal erosion, and air pollution. Internationally, the focus was more on disasters caused by extreme weather events, notably flooding. This focus may have been due in part to participants' awareness of the 2022 Pakistan floods, which were still taking place at the time of the first workshop.

"Dystopia, rising sea levels and flooding, low level land. Those are the pictures that come to my head. I guess all of the worst-case scenarios immediately go to your head if you think about it too much... floods and droughts, and a lot of heat comes to mind."

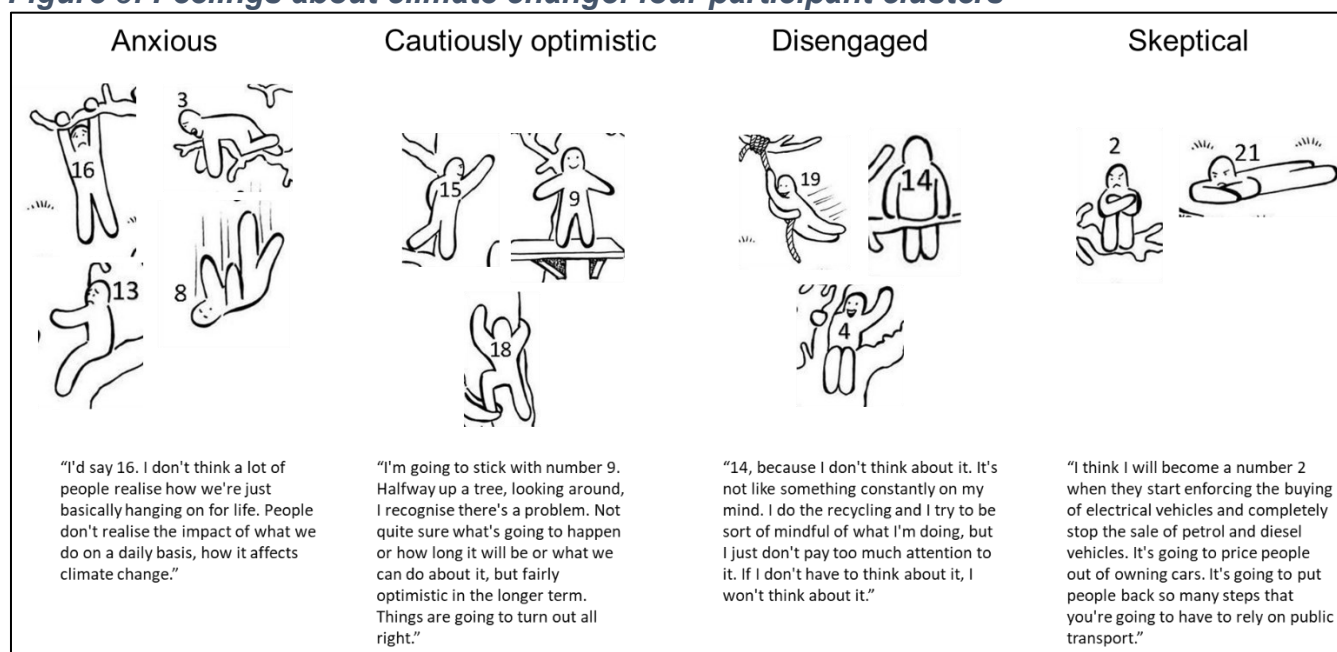
Given participants' awareness of climate change's negative impacts, it is unsurprising that the vast majority expressed at least some level of concern about climate change. The intensity of concern varied, however, with participants identified by the research team as falling into 4 broad clusters: anxious, cautiously optimistic, disengaged, and skeptical (see **Error! Reference source not found.**).

Anxious participants tended to be skeptical about the degree to which those countries and industries who contribute most to climate change will change, or be forced to change, their actions. This cluster included participants who, because of factors including prior health conditions and geographical location, were more personally vulnerable to the effects of climate change.

Cautiously optimistic participants, by contrast, tended to indicate that they did not feel personally very affected by climate change at present (although acknowledged that this might change in the future). They also expressed greater confidence in mankind's ability to solve the issue and took comfort in evidence of multilateral cooperation to address the crisis (for example, Conference of the Parties, the main decision-making body of the United Nations

Framework Convention on Climate Change) and national governments promising to ramp up regulation on big polluters.

Figure 3: Feelings about climate change: four participant clusters



3.2 Participants had limited awareness and understanding of the links between health, healthcare and climate

Awareness and understanding of the effects of climate change on health was patchy across the sample, rarely 'top-of-mind', and precluded some of the main ways in which climate change affects health. For example, while a relatively large proportion of participants connected climate change to physical health conditions such as asthma and heatstroke, only a few made connections with mental health, and none drew explicit connections with risks of infectious diseases and malnutrition (despite some recognising climate change's impacts on food systems). Participants with prior health conditions exacerbated by climate change and participants who were more actively engaged in the climate crisis (for example, through campaigning activities) were the most confident linking climate change to health.

"Extreme heat is not good...people sweat a lot, so they are losing the water of the body, and there's a lot of health problems, especially for very old people. And hospital admissions increase in extreme heat and extreme cold weather."

Most participants came to the dialogue having never considered healthcare's greenhouse gas emissions or contribution to climate change. The only exceptions were participants whose clinicians had recommended they try an alternative care option for environmental reasons, for example, 1 participant with asthma who had recently switched to a greener inhaler.

"To be honest, it's not something I've ever really thought about. I've never linked the health service with climate change."

When prompted by researchers, participants connected healthcare to climate change primarily in terms of waste generated at the point of use, for example, non-recyclable materials, single-use items, and chemical and radioactive waste. More broadly, participants were more aware of and focused more on greenhouse gas emissions associated with the consumption rather than the production of goods and services. As a result, when thinking about healthcare, many participants tended to overestimate the environmental gains of waste reduction and hospital energy saving measures, and to underestimate (or completely miss) the benefits of measures designed to reduce supply chain emissions.

“Waste must be high [in terms of overall contributions to healthcare greenhouse gas emissions], and I think medicines and chemicals must be the least.”

3.3 Some participants framed sustainability initiatives negatively in terms of what people stand to lose and who will lose out

During the first workshop, several participants explicitly associated efforts to combat climate change with loss of access to goods and services. Participants expressed concerns about the impact of policies and legislation designed to limit climate change on the lives and livelihoods of people. These concerns focused on curtailments to individual freedoms and risks of being priced out of access to commodities such as cars.

“We’re going backwards where now the healthcare is going to deteriorate because to go Net Zero, there’s going to be a cost attached, people are going to pay, certain people will not be able to afford to pay for it. Just like with the cars, just like with certain other things. What kind of society we’re going to end up with? People going without? And which sector of society is going to go without? So if going net zero means paying more on the public suffering, then is it worth it?”

These threats were also perceived as most likely to affect already socio-economically disadvantaged groups. For a very small minority of participants, these concerns about inequality and access appeared to outweigh concerns about the effects of climate change itself. As well as providing further evidence of a connection in some participants’ minds between climate change and consumption, these concerns also suggest an implicit framing of sustainability initiatives in terms of what they require people to give up, rather than in terms of the benefits they provide to those people. They also tie in with distrust towards institutions and corporations.

3.4 Participants were highly conscious of the challenges facing the NHS

Participants came to the dialogue deeply concerned about the direction of travel of the NHS. Commonly mentioned challenges facing the healthcare service included:

- lack of funding and resources
- staff shortages and staff turnover
- long waiting lists
- poor coordination between different parts of the healthcare system

- increasing levels of demand due to an ageing population
- the threat of privatisation and the prospect of healthcare ceasing to be free at the point of service
- loss of trust between patients and healthcare providers.

Awareness of these challenges led some participants to question the feasibility of the NHS's ambition to become more environmentally sustainable. Given the rising demand for high quality healthcare around the world, particularly in developing countries, similar questions were asked of calls to reduce healthcare greenhouse gas emissions at a global level. Awareness of these challenges also influenced a range of other values and attitudes, including distrust in the Government and private sector and belief in the need for more people to take personal responsibility for their health.

"This is health we're talking about. It's not like travel, where you could say, well, we won't go on for a holiday this year, or we'll turn the heating down a bit. Everybody wants good health. You've got an aging population who require more help, you've got new medical breakthroughs coming through all the time, which, again, will require medicines, chemicals, new equipment. So you might tinker round of the edges with cutting back on certain things, but I think if you like, the tide of history is against you. And if you're looking on a worldwide basis, second and third world countries all want the same levels of health that we do, so they're going to raise their health expenditures to our level."

"I don't want to give the impression that I think nobody in the NHS backs the Net Zero agenda. I just think that a lot of it is probably a little bit unrealistic. And let's face it, [how many] of the people who are speaking today and being decision makers will even be around in 2045?"

3.5 Many participants expressed distrust in institutions, especially powerful corporations

A consensus view expressed by participants was that combatting climate change is a universal responsibility – but one where big polluters are shirking their responsibilities. At an individual level, participants commonly described engaging in waste-reduction activities such as recycling and using fewer plastic products. However, while participants generally saw themselves and the public as doing their part, many expressed the belief that major polluters, including rich, developed countries, big businesses and industrial producers, shirk their responsibilities in a variety of ways. For example, participants argued that some big polluters simply ignore their responsibility to lower their emissions, while others behave hypocritically by "greenwashing" their activities and/or shifting the burden of responsibility onto other actors – notably poorer, developing countries.

"I feel like as much as us people, we recycle, we make sure we care for our world, in a way, it's not enough. I feel like these big corporations, they need to send a message out there to not just do more but make sure that they're doing it as well, because a lot of companies say one thing, but they don't do it. So it's like you got to stick to your word. They need to take a lot of responsibility because it starts from them when it comes to us, in my opinion."

Distrust was also a dominant theme of participants' attitudes towards the pharmaceutical industry more broadly, which many saw as motivated by profit rather than concern for people's health or the environment. This led some participants to be suspicious of prescribed medication and to avoid them where possible, for example, by putting up with symptoms or using 'natural remedies'.

"For the pharmaceutical companies, it's all about money. That's all it is."

3.6 Many participants believed in the value of taking personal responsibility for health

For many participants, it was first and foremost up to the individual to take care of their own health, with the healthcare system there to support people at a time of crisis and urgent need. This means they believed people should eat well, exercise, and take care of themselves as a matter of course. Participants believed that doing so would lead to better health outcomes overall, making these forms of self-care intrinsically better than pathways to health that involve medicalised care and pharmaceuticals.

However, participants also believed that many people within the UK do not take on this responsibility. Instead, people were seen to rely on healthcare to compensate for unhealthy lifestyle choices. This, it was believed, contributes significantly to the burdens experienced by the NHS, drawing attention, time, and resources away from caring for the health needs of people whose problems are outside of their control.

"I just think a lot of people want to pop pills in order that they can continue the lifestyle that made them need to pop pills in the first place. I think people do need to take more responsibility for their own health."

4. Attitudes towards making healthcare more sustainable

This section presents findings from discussions with participants after they had learned more about the ways in which healthcare could be made more sustainable, including the benefits and trade-offs associated with different options. It explains these findings with reference to the beliefs, attitudes and values discussed in section 3. It also explores how these findings may help to explain how much participants' preferences for different healthcare options were influenced by environmental sustainability concerns.

4.1 Support for making healthcare more sustainable increased as participants learned more about healthcare's contribution to climate change and what sustainable healthcare could look like in practice

The findings set out in section 3 show that, while most participants began the dialogue already persuaded that climate change is a serious threat, many had never considered healthcare as a contributor to the climate crisis.

At the end of the first workshop, after learning more both about the scale of healthcare's greenhouse gas emissions and the ways in which climate change impacts health, participants were much more likely to acknowledge the necessity of making healthcare more sustainable.

"[Environmental sustainability] wasn't even a thought in my head when I was asked for my three [words to describe ideal healthcare]. But it would definitely be something I would think more of now, knowing that it has such a contribution to pollution, which then gives people asthma. It's kind of like a never-ending cycle. So I think I would definitely put it more in my top three than I would have."

Some participants also recognised that making healthcare more sustainable could be an important step in improving service experience and patient outcomes. For example, when asked to rank the importance of environmental sustainability relative to other priorities for healthcare, some participants rejected the premise of the question itself, suggesting that sustainability is better framed as a foundational pillar that sits beneath and supports better healthcare in various ways.

"[Environmental sustainability] should be the basis for everything else to sit on top of. It should be running through all levels of all treatment."

Some, however, left the first workshop concerned about the consequences that actions to promote sustainability within healthcare could have on patient experiences and health outcomes. These reservations were expressed most strongly by participants who already showed signs of distrust in institutions and had concerns about the impact of sustainability-related regulation on people's freedoms and quality of care.

"I think patient care is more important than environmental care. I think respecting people is more important than the impact that they have on the environment."

In subsequent workshops, participants learned more about what sustainable healthcare could look like in practice. Their responses are discussed in more detail below.

4.2 When given a choice, participants commonly preferred more environmentally sustainable care options – but not primarily out of concern for the environment

During ‘The game of NICE’, participants were asked to imagine themselves as a patient (or, for action 6, a potential future patient) and to indicate which of 2 options they would prefer (for further detail, see appendix 2: methodological notes). In doing so, participants expressed universal support for the greener options when discussing 1 action (action 5: social prescribing), with a clear majority (more than two-thirds) also preferring the greener option in 2 more actions (action 1: choice of anaesthetics; and action 3: remote consultations). While views about the remaining actions were more mixed, in all 3 of these cases the greener option still drew support from approximately half of the participants.

Critically, however, support for the greener option in these contexts was rarely driven by consideration of the environmental impacts. Instead, participants supported these options because of other associated benefits (for example, reducing the burden on the NHS), with the potential environmental gains often considered as a secondary benefit rather than as a principal driver of their decision-making.

Other types of factors that exerted more influence than environmental considerations on participants’ decision-making are illustrated below.

- Perceived improvements or risks to **patient health outcomes**:

“When it comes to health, the NHS and NICE’s decisions should always be based on clinical efficacy. If somebody doesn’t get medicine that they may need because it’s not green, suppose they die because their medicines are refused because they’re not green enough. I couldn’t ever support that. If the two don’t conflict, then fair enough. But in the final analysis, with a health service, it always has to go with a clinical decision rather than a climate decision.”

- Awareness of the **challenges facing the NHS**, and opportunities to reduce these:

“I think the watch and wait approach is good and reasonable, but then at the same time, I want the assurance from the GP that if the condition worsens, I should be seen immediately, because getting GP appointments nowadays is very difficult. You can’t get it.”

“Social prescribing approaches would be better because it’s got so many other benefits, not just environmentally, but financially for NHS and to encourage someone to exercise more and eat better is always a good thing. And then that gets passed down through generations, which stops, which will make future generations have less issues with cholesterol and other associated issues that come with it.”

- **Experiential factors**, for example, around patient convenience and comfort:

"I think environmental sustainability would probably be very low on the factors of why I'd consider it. It's all the other reasons why for remote consultations. I know people that have wearable devices for diabetes and they're pretty easy to use, they're a lot easier for them to check, there's no having to prick your finger all the time and things like that and there's less apparatus to be used and stuff."

"When the anaesthetists came to see me, because it was three weeks into COVID, you couldn't have a general anesthetic. And I'm thinking, oh, general anesthetics are really good because you go to sleep, it's gentle, you just drift off... So I was like, I really, really want a general anesthetic... But having had [the injection], it was fantastic. I didn't feel the needle go in, I didn't feel the spinal injection, I didn't feel a thing. I could chat to the anaesthetist, they played some music, it was a bit noisy with all the sewing that was going on, but that was because of the type of operation. It was absolutely great and I would 100% recommend it."

- **Trust or distrust in institutions and corporations:**

"Suppliers are all about profit, basically, and unless they're through them with a stick, they won't pursue green options. So I do believe we should be looking at green options, basically."

- **Alignment with personal beliefs and values**, for example, taking personal responsibility for health:

"Weight management, health exercise, I would love to see this implemented, because too many people do not take responsibility for their own actions, for their own health. And they saw relying on, I'll go see the doctor, I'll get a pill. But that doesn't get to the cause of the problem."

4.3 Perceived risks to patient health constituted the most common barrier to support for more sustainable care options

Most reasons given by participants for preferring a less environmentally sustainable option related to fears that patient outcomes could be compromised by the greener option. Notably, this anxiety sometimes persisted even after researchers reiterated that, in the context of the action being imagined, both options were equally safe and (where relevant) clinically effective. These cases highlighted an enduring skepticism towards information that contradicted participants prior beliefs and attitudes, for example, around the risks of spinal injections, as well as biases towards the status quo. These risk perceptions may be compounded by distrust in institutions and anxieties about losing out due to sustainability initiatives (i.e. being asked to make compromises).

"It's not that it's not clinically effective, but from my knowledge of asthma, you can't get enough breath. So I would need to understand more how they are expected to suck enough to be able to inhale it enough to have the effect."

"I know quite a few people have had issues with the spinal injection, and even though you are lightly sedated, there's a potential that it will affect the spinal region in the future. But with general anaesthetic, that's the main thing: it's general, so it's quite used very often, and people generally don't have an issue with it. So I feel more comfortable with the general anaesthetic."

4.4 Participants expressed universal support for approaches to environmental sustainability that enabled patient choice and were divided over those that limited or removed choice

During 'The game of NICE', participants were also asked to imagine themselves as members of a NICE advisory committee and to vote on a proposed recommendation (for further detail, see section 2.3 of this report). Ensuing discussions revealed that recommendations ensuring patients' ability to choose the care option they prefer (for example, recommendations for actions 1 and 2) attracted universal support from participants. By contrast, a minority of participants voted against some recommendations that did not make patient choice explicit (for example, actions 3 and 4).

"I support [the recommendation] because it's not something that's being imposed on people, it's giving people choice."

This discrepancy may be related to levels of trust in the decisions made by healthcare providers. Some participants reacted negatively towards the notion that it is healthcare providers who have the final say over whether a particular option (for example, watching and waiting) is the right one for any given patient. Some also expressed concerns about recommendations that were seen as adopting a blanket approach, which could result in healthcare providers not paying sufficient attention to the nuance of individual cases or patient views. In the context of these reservations, allowing for a degree of flexibility on a case-by-case basis, and accounting for patient preferences, was seen as important for increasing the acceptability of these actions.

Alongside these concerns, some participants acknowledged situations and circumstances in which it would be acceptable for NICE (or the NHS) to tailor the conditions under which patients choose between different options, in ways that could improve the environmental sustainability of the healthcare system. For example, several participants suggested that NICE identify opportunities to make greener options the default, while still providing patients the opportunity to choose a less green option should they wish to do so.

"I think something to consider would be people who are newly diagnosed with asthma, say adults. Perhaps they should go to the DPI inhaler first, and then if they don't work out, then go to the Pmd. Over time, everyone will be using DPI inhalers, if you get people that are newly diagnosed to use the DPIs by default."

4.5 Viewing sustainability within healthcare from a ‘citizen perspective’, as opposed to a patient perspective, increased support for sustainable care options

For all of the actions presented to participants, levels of support for more sustainable options tended to increase when participants imagined themselves as citizens on a NICE advisory committee, where the focus is at the population level, versus when they imagined themselves as patients.

At times this was because the recommendation itself did not prevent people from accessing a less green care option, if that is what they prefer. For example, for some actions, participants who preferred the less green option when thinking as a patient had no problem supporting a recommendation that guaranteed patient choice, as doing so had no bearing on their ability to choose in line with their preferences. At other times, it was because the recommendation made explicit provisions for ensuring the safety of the patient (for example, “where it is safe and appropriate to do so”), thereby countering concerns about risks to patient health outcomes.

There were, however, a small number of cases of participants adopting a conflicting position when thinking as a citizen versus as a patient. As an example, during the discussion of the recommendation for action 6 (accounting for sustainability), several participants switched to support the recommendation when adopting a citizen perspective, despite preferring the less sustainable option when thinking as a patient. This switch reflected participants’ weighing up benefits to people currently receiving care versus benefits to the wider population and future generations. Explaining their decision, these participants suggested that they were motivated by the wider and future health, economic and environmental benefits promised by a shift towards a more sustainable healthcare supply chain. However, they still said that, as a patient, they would prefer not to risk timely access to new treatments for themselves.

“From this perspective, NICE want to kind of take responsibility to ensure that future treatments are from a cleaner source, both of which will benefit the patient and the environment. I do feel that there should be an option for the person – that’s why I chose differently just around before – but I agree with [this recommendation].”

5. Participant views about how NICE should act regarding the environmental sustainability of healthcare

This section outlines participants' views about how NICE should act regarding the environmental sustainability of healthcare. The findings reflect the views of participants at the end of the dialogue, after they had been given time to deliberate and reflect upon everything they had learned about the relationship between health, healthcare and climate change. The findings are split into 3 parts, reflecting participants' views about:

- NICE's responsibilities toward environmental sustainability
- how NICE should account for environmental impacts when appraising new interventions
- how NICE should account for patients' right to informed choice when considering the carbon footprint of different treatments.

5.1 NICE's responsibilities

5.1.1 Participants believe NICE has a responsibility to make healthcare more sustainable – but not at the expense of ensuring access to high quality, effective care

Almost all participants agreed that NICE has a responsibility to use its influence to make healthcare more environmentally sustainable. This makes sense in the context of participants' awareness and concern about climate change, and their increased understanding of the environmental impacts of healthcare as the dialogue progressed. The consensus is also due to participants learning about the ways in which enhanced sustainability can help address, rather than coming into conflict with, some of the challenges facing the NHS. As alleviating these challenges is a clear priority for them, this information led them to view sustainable care positively.

"Without developing this, future generations are going to have more issues. And if we don't action it now, we're on that cluster where we're almost too late to bring anything into effect, considering it's been so many years for all this stuff to take effect. If we don't take action now, we're leaving it on the cusp of where maybe there's no point of return."

Some participants set out limits to NICE's responsibility to improve the sustainability of healthcare. The primary qualification was that this responsibility was secondary to NICE's core responsibility to improve health outcomes for people using the NHS and care services. Consequently, participants did not support NICE pursuing sustainability goals in ways that may restrict access to high quality, effective care.

The limits within which participants generally agreed NICE can pursue environmental sustainability goals without compromising on its primary responsibility are detailed throughout the remainder of this section. It is important to reiterate that, while participants focused their

qualifications on scenarios in which sustainability goals conflict with health outcomes, many of the options for making healthcare more sustainable were treated as ‘win-win’ scenarios that could improve care outcomes while reducing greenhouse gas emissions.

“Yes, it does have a responsibility, absolutely no questions asked. However, that shouldn’t extend to actively not recommending a treatment if there’s no other treatment for that, and it will actually save the life.”

A small minority of participants questioned whether it is appropriate to treat environmental sustainability as part of NICE’s remit. These participants pointed to other government departments or public bodies they felt were better suited to this role (such as the Department for Environment, Food & Rural Affairs), with some indicating a preference for NICE to stick to what they saw as its core function of improving health outcomes for people using the NHS.

“I think that’s a bit of mission creep. It’s not their core responsibility. That responsibility should rest with the Department of Environment.”

5.1.2 Participants believe NICE has a responsibility to influence the supply chain to prioritise greener interventions – but again not at the expense of ensuring access to care

Participants felt that NICE holds a responsibility to make healthcare more environmentally sustainable. They also believed that suppliers (in particular, the pharmaceutical industry) will not make changes to their processes unless incentivised to do so. This ties in closely with their belief that big polluters are currently not doing enough to limit their contributions to climate change. As a result, NICE was seen to have a responsibility to influence the supply chain. Participants who agreed that NICE should use its influence to improve supply chain sustainability supported the proposition for NICE to require companies to have certain sustainability standards when they submit a new treatment or technology for NICE to review.

“I can be quite blunt; I think it might be the kick up the backside that quite a few of them need. And I’ll tell you what, if they think it’s going to affect their profitability, it is not going to delay things. They’re going to crack on and do it.”

As with NICE’s responsibility to make healthcare more sustainable, some participants set out limits or restrictions to this remit. These limits stipulated that NICE should not use its influence in ways that may jeopardise access to high quality, effective healthcare (in other words, it should not lead to the withdrawal or denial of the most effective treatments). Others also questioned the extent to which NICE could influence a global supply chain.

“NICE could say we want this to be environmentally friendly, but if big pharma spent billions on producing a new wonder drug which might not be as environmentally friendly, they can just say, well, if you don’t want it, you don’t want it. So, we can use our influence, but in a global world, we haven’t got that much influence, really.”

5.1.3 Participants support NICE taking steps to reduce the provision of care that provides no benefit but are more cautious about the concept of 'minimal' benefit

Participants were unanimous in saying that healthcare that provides no benefit should not be offered on the NHS. Given the volume of emissions associated with the production and consumption of healthcare and the opportunity to save the NHS time and money, this was seen as something that was not controversial and not the subject of much debate.

However, views were more mixed regarding a proposal for NICE to reduce the provision of care providing only 'minimal' benefit. Participants who did not support this proposal argued that the value of a benefit is subjective: what looks from 1 person's perspective to be of minimal value could mean a lot to a person receiving that care. This made them uneasy about the prospect of a patient losing access to care that they personally found beneficial, because someone else judges that the value of the benefit is 'minimal'. Such views reflect a combination of public distrust in institutions (in this case, the healthcare system) and anxieties about people losing out because of sustainability initiatives.

"Well, if there's no benefit to the patient and you stop it, there's got to be benefit financially and benefit to the environment. It's a winner. The minimal one is slightly more difficult because it's incredibly complex. You're getting into more philosophical arguments here and discussion is very difficult."

"I think the use of the word minimal or no benefit is very subjective because someone could say, oh, I think asthma pump is so minimal, but to someone that could save their life."

Some participants felt more comfortable with the language around 'minimal' benefit after learning that the benefits of care are evaluated using robust, reliable population-level data, rather than by individual health practitioners on a case-by-case basis. Reassurances about objectivity of the methods used to evaluate the effectiveness of care possibly alleviated participants' distrust. Others suggested that NICE should distinguish between people who are currently receiving a care option and future patients, by giving the former group continued access if it provides some benefit and they want to continue using it. This caveat aims to reduce the risk of care that is perceived to be beneficial by some being withdrawn because of sustainability initiatives. It also suggests that participants view taking something away as different from (and much more undesirable than) not offering it in the first place.

"Knowing it's actually based on population level data, kind of hard scientific facts makes me feel a lot better about it, personally."

"If a person is already on this treatment, I don't think you should take it away from him, because it will affect him psychologically. But a person who hasn't had it, he doesn't know any difference. Any future recommendations, they can say don't use it, but anybody who's on this medication at the moment should continue it."

5.1.4 Participants strongly support NICE making recommendations that promote healthy behaviour and prevent ill health, to reduce need for prescription medicines and more intensive care in the future

There was unanimous support for recommendations that encourage healthy lifestyles. This resonates strongly with participants' belief in taking personal responsibility for health and the importance they place on reducing the burden on the NHS. By enabling people to take personal responsibility for their health and prioritising preventative approaches to healthcare, participants believe that NICE can facilitate better health outcomes and help reduce healthcare spending, thereby reducing the burden on the NHS. Participants who distrusted the pharmaceutical industry and had previously emphasised the importance of taking personal responsibility for one's own health also valued preventative healthcare as a means of reducing the (over)prescription of pharmaceuticals.

"It's better not only for the person, but for the economy as well, because you're not wasting and running medication. I think it's a no brainer, this one."

Caveats mentioned in the context of this responsibility reiterated concerns about people losing out from access to care because of sustainability initiatives. For example, a few participants highlighted that, for some people, behaviour change is not the solution, and it is important that individuals are not left behind.

"I agree with this one [statement], to be fair, because I think because they've worded it saying, 'make recommendations. It's not like they're forcing anyone, but they're still putting it out there. As long as they consider that some people may have illnesses, no matter how healthy their lifestyle is, then it's fine."

5.2 NICE's decision-making about new treatments, technology and processes

5.2.1 Participants believe that NICE's decisions should account for the health outcomes of a range of groups, including future generations and people living outside of England

Participants expressed the view that, when making its decisions, NICE should place most weight on the health outcomes of people in England currently receiving care.

Considering the environmental (and, by extension, potential indirect health) effects of healthcare, however, they also indicated that NICE should give some weight to the health outcomes of other groups. These included future generations and people in England not currently receiving care (generally weighted equally), and people living outside of England (weighted least). Notably, no participants indicated that people outside of England should be given zero weighting, suggesting that all believe this group should receive at least some level of consideration.

“I’m definitely uncomfortable with [just prioritising people in England currently receiving care]. The people who are receiving care and people who aren’t receiving care, what’s the difference? Because somebody could have had a test today and had been diagnosed with breast cancer tomorrow, and immediately they’ve moved from one group to the next group. The people in those boxes are exactly the same people. The only difference is a function of when something happens...And I think if I extend that thinking, I think my gut reaction is that for the future generation, almost it’s the same argument, it’s just that, you know, they’re in 20 years’ time.”

For many participants, these weightings reflected beliefs about NICE’s remit, which they saw as first and foremost patient- and England-focused. Consequently, these findings do not necessarily reflect participants’ judgements about the relative importance of the health of different groups in an absolute sense, but rather in the context of NICE’s decision-making, specifically.

“To my view of NICE, this is a bit like overreach. Again, NICE can make recommendations, but it can only affect, if you like, what we do here, which is fine. It may have a knock-on effect on global populations, because they can say, that’s a good idea, or that’s not a good idea. But is it NICE’s responsibility? I don’t think so. It’s the government’s responsibility to look after the UK’s global impact, not NICE.”

5.2.2 Participants believe it is acceptable for NICE to consider the environmental impacts of new interventions in cases where effective interventions already exist – however, where there is an unmet need for an intervention, they believe it is not acceptable to do so

Participants’ qualifications regarding NICE’s responsibilities to make healthcare more sustainable often focused on scenarios in which only 1 effective care option exists. In this type of scenario, participants believed that NICE’s primary responsibility to improve health outcomes outweighed its responsibility to make healthcare more sustainable. This meant that, in cases where there is an unmet need for an intervention (for example, no effective interventions to address a specific health need are already available), participants consistently stated that a treatment should be recommended based primarily on evidence of clinical effectiveness, with other factors (such as sustainability) receiving much less weight.

“It would depend on whether there was an alternative available that provided a more significant benefit. If there is no alternative, then regardless of how minimum the benefit, it should not be withdrawn.”

“I think you’ve got to think about NICE’s remit again. Their remit is not to solve global warming. Their remit is to look at the effectiveness of treatments. And I would say, if there’s an effective treatment and there’s only one effective treatment but it’s environmentally damaging, I still think the treatment should go ahead.”

However, in scenarios where effective alternatives do exist, participants were more supportive

of NICE accounting for and possibly giving more weight to a wider range of factors, including environmental impacts.

“The purpose of medical treatment is to be clinically effective. So I think that the driving factor should be how clinically effective it is. But like we said, other things can and should be taken into account as well, including environmental aspects of treatment. But yeah, the driving factor, I believe, should be the clinical effectiveness, because it’s most important.”

Participants also commonly rejected the proposal for NICE to make assessments based on evidence of ‘health benefits’ rather than ‘clinical effectiveness’. This substitution was framed by the researchers as a way of encouraging consideration of the health impacts of an intervention outside of a clinical context, for example, in terms of the effects of greenhouse gas emissions it produces. The rejection again signalled participants’ belief that, in a ‘no other option’ scenario, NICE’s focus should be on treatments that deliver clinical effectiveness. For some, the rejection was also motivated by a concern about the vagueness of the phrase ‘health benefits’.

Finally, participants distinguished between the ‘no other option’ scenarios and scenarios where alternative effective treatments are available when discussing the acceptability of delays to NICE’s recommendations. As was explained during the breakout groups, NICE can be more certain about the effectiveness of an intervention if the evidence base is well established, but this takes more time. Being more certain about the benefits of an intervention could be better for the environment, because it can reduce the likelihood that NICE recommends something that falls short in practice, thereby avoiding an unnecessary environmental cost. Discussions indicated that participants would tolerate less certainty and prefer a faster recommendation when no other options are available but would accept longer delays to increase certainty of effectiveness in situations where effective alternative treatments already exist.

“I think it is important for NICE to delay your treatment and get the research in thoroughly. But I also always worry about people having to crowd fund to save their life and go to America for treatments and things like this. But again, why put [a treatment] out and treat people if something isn’t truly effective? It doesn’t seem logical.”

“If a patient was in a critical state on the brink of death, or if not getting treatment could worsen the situation, and there was at least 25% chance of effectiveness, then maybe the treatment could be recommended. If the condition is minor and it is a condition someone could live with until a more cost-effective and environmentally friendly treatment could be introduced, then patients should be taught matters to manage symptoms until the remedy was introduced.”

5.2.3 Some participants believe it is acceptable for NICE to consider the environmental impacts of new interventions for less severe conditions – however, for conditions known to have severe impacts on patients, they believe it is not acceptable to do so

It was acknowledged that conditions differ in the impact that they have on people’s lives, for

example, in terms of both mortality and quality of life. The extent of the impact was seen as important for NICE to consider when thinking about whether and how to prioritise environmental sustainability in the context of healthcare.

There were mixed views about whether environmental impacts should influence NICE's decision-making about new treatments. The consensus was that this is only appropriate if other care options are already available to patients. Where this is the case, half of participants also felt that evidence of better health outcomes was sufficient for NICE to consider recommending the treatment, regardless of environmental impacts. For them, this aligns with NICE's core remit, and will ensure that people receiving care do not lose out because of sustainability initiatives. However, the other half suggested that more information was needed to determine whether environmental impacts should carry weight. For these participants, the weighting of the environmental impacts depended on factors including the severity of the health condition in question, as well as the size of the potential environmental impact.

"For me, I think it depends on the severity of the issue. I feel like it depends on so many factors."

"I do think that the environmental factors should be taken into account. And I think that quite strongly. But I also think that they should not be prioritised if there's no other alternative treatment and the outcome is likely to be death or very serious illness. It's a red line for me."

Some participants also indicated that delays to NICE's recommendations may be more acceptable for conditions that resulted in less severe health impacts (dandruff and mild headaches were mentioned as examples). A small minority suggested that the number of people affected by a condition could also be a factor, although most implicitly thought about the severity of a condition at an individual rather than an aggregate level.

"My comment was around the severity. So if there's something that's really bad for the environment and it's treating dandruff then delay it. But if it's life-threatening or very significant, then perhaps think differently...It's a combination of scale and severity. Dandruff is a trite example, but it's a useful one. If a million people have got dandruff, I'm still not going to say you should speed it through. I think delay it."

5.2.4 Most participants believe it is acceptable for NICE to recommend an intervention that is more environmentally sustainable but more expensive to the NHS compared to alternatives (and vice versa), if the financial costs/savings are within a certain threshold

Participants were highly aware of the financial constraints within which the NHS currently operates, the value that cost saving measures can provide in freeing up resources in other areas, and the importance of fiscal prudence for ensuring the long-term survival and viability of the healthcare system.

"I think you have to look at the financial cost as well because these days we're going bankrupt the company sooner or later. If you don't look at the cost, we won't have the NHS any longer."

“If it’s a lower financial cost that releases money elsewhere for the NHS, which is strapped for cash that they can use somewhere else, possibly more effectively.”

However, participants also indicated very little support for an approach in which NICE recommends cheaper care options, regardless of their environmental impact. Such an approach was viewed as a triumph of short-term thinking because it ignores the increasingly negative impacts that unabated climate change will have on the healthcare system.

“In an ideal world, finance doesn’t come into it. It should be that stuff like health outcomes and environmental impact will be the most important. But granted, it’s not something that we always have a say over because the NHS are trying to cut costs in certain ways.”

Consequently, most participants believed that NICE should seek to balance financial and environment costs (and benefits) when making decisions. For example, discussions indicated support for the use of thresholds to help NICE decide when environmental impacts (positive and negative) outweigh the financial impacts, and vice versa. Participants also generally believed that environmental impacts on the health of future generations, people not currently receiving care and people living around the world should also be considered, but be given less weight than the health of people currently receiving care.

“If it’s minimally cheaper, but twice as bad for the environment, no, the cost probably shouldn’t trump the environment and it goes back to the different groups we’re thinking about, doesn’t it? So if you think about the global group and the possible future patients and the future generations, if something’s massively bad for the environment and we say, oh, okay, it’s half a penny per 100 tablets cheaper, then we’re going to recommend it, all we’ve done is increase the cost for the next generation and for future patients. So it needs to be balanced.”

5.2.5 If 2 interventions are comparable in terms of clinical and cost effectiveness, participants believe NICE should recommend the greener option as the default

In a situation where there is a choice between 2 otherwise comparable interventions, where 1 is more environmentally friendly than the other, recommending the greener option as the default was widely supported. In such a scenario, participants felt that there was nothing to lose and clear benefits to be gained by making the more sustainable option the first resort.

Where dissent and qualifications were voiced, these focused on the need to include other factors in decision-making, such as patient experience. Some participants were uncomfortable with the idea that an intervention might be recommended without considering the preferences (as opposed to the health outcomes) of the people who will receive the recommended care. This once again illustrates the enduring anxiety about some people losing out and having their freedom of choice restricted because of sustainability initiatives.

“As discussed in the last workshop, there are less environmentally damaging treatments, such as a local anaesthetic in the back as opposed to a general anaesthetic, however people will have reservations about the effect of such a treatment...both treatments offer the same outcome, but it is the adverse effect on the patient that needs to be taken into account rather than environmental impact.”

5.3 Patient choice and decision-making

5.3.1 Participants believe it can be appropriate for NICE to recommend the removal of specific care options from the choice set presented to patients for environmental reasons – but only when other effective care options are available

Discussions about the appropriateness of removing certain care options from the range of choices presented to patients prompted a variety of views. Some participants were initially nervous about the implication that choices might be taken out of their hands for environmental reasons. Others expressed concerns about the impact on doctor-patient relationships if individual healthcare providers were perceived as deciding not to offer a patient a certain treatment for environmental reasons. This caution reflects anxieties about losing out because of sustainability initiatives, and how this can contribute to growing distrust in the healthcare system.

“I think one of the issues with this is if it becomes known that the doctors aren’t presenting the patient all the options that are open to them, it will destroy the trust that patients and doctors have with each other. The patient thinks he’s keeping something back from her. He’s not letting me know about this treatment, which I’ve read about, or I think this might be better for me, and they’re not mentioning it to them and that’s not good practice.”

“Some doctors have got less time. Like in general practice, they mostly give the ten minutes and they will say that they don’t have the time and they just limit the options and don’t discuss in detail. Then it’s not good for the patient because then there is no question of me becoming informed.”

However, no participants supported maximising choice for choice’s sake. Rather, the majority felt that the range of choices presented to the patient should reflect the other principles referenced in section 5.2, for example, by:

- excluding care options that provide minimal or low benefit, or provide similar health benefits at a similar cost, but at a greater environmental cost
- minimising the risk of negative impacts on patients’ experience of care, for example, by not removing a care option that a patient may already have had access to/reasonably expect they will receive.

"If multiple options are available with the same clinical outcome and all the same cost, but one of them might have a significantly worse environmental impact, I believe that choice should be taken away. I think you do have choices, but I don't think you just get to choose the one that's got a hideous environmental impact, if the clinical outcome and the cost to the NHS is the same."

"The wording for me would be along the lines of where there are two or three options, then the greener one would be the one which you go for. So people realise they're not losing out on anything. That's a nice positive way of framing it as well. So where there are multiple options with similar or comparable benefits, it's acceptable."

"I think there'd have to just be another sentence in that statement, to sort of say, just getting right back to that thing I keep hopping on about, that the care and comfort of the patient would have to be paramount."

5.3.2 Participants support informing people about the environmental costs of care options in shared decision-making contexts, but with some caveats

Participants understood that, for patients to make informed choices about their care, they need to be educated about the options that are available. Moreover, as participants' own lack of knowledge about the environmental impacts of healthcare at the beginning of the dialogue demonstrated, patients are unlikely to understand the environmental impacts of care options. Consequently, many participants supported NICE (or an equivalent independent body) providing information about the environmental impacts of different interventions.

"I support [providing information about environmental impacts] 100%... the key word in there being informed choices. So rather than patients just making a speculative decision on medication, it's actually, here are the facts and here are your choices."

However, while participants were generally supportive of this information being made available, many were cautious about the idea of healthcare providers actively incorporating discussion of environmental impacts into shared decision-making practices. First, some participants argued that it was not appropriate for patients to feel pressured to choose a more environmentally friendly option by healthcare practitioners. Second, some expressed doubts about the capability of practitioners to communicate this information, suggesting that they lack both the expertise and time to do so. A third, related concern, was around whether requiring healthcare providers to communicate this information was an effective use of their time, especially given the human resource constraints already perceived as limiting patient access to healthcare. Fourth, and finally, participants suggested scenarios in which it would not be appropriate for a healthcare provider to ask patients to make choices about their care, for example, emergency situations and cases where the patient is experiencing high levels of anxiety.

"I think it would be difficult if a doctor was speaking about environmental impact of treatment. For some people, it would feel like they're being pressured regardless of how it was put across."

These concerns led some participants to suggest that NICE should create useful, user-friendly advice and information materials (such as a pamphlet) that patients can use to understand their choices and learn about environmentally friendly options. For example, they recommended that NICE look for ways to communicate this information outside of clinical contexts, to avoid risks of patients feeling coerced and to ensure that they can make decisions in contexts in which they feel comfortable.

“I supported this, but I think it needs to be done in the right way. Maybe it’s not that they discuss it straight away. Maybe you have pamphlets which have the information. Because I’m thinking of people that get quite serious condition diagnosis – maybe it’s not the right time to tell them straight away but they should definitely get that information.”

6. Considerations for NICE

This NICE Listens dialogue was commissioned to explore public opinion on how NICE should account for environmental sustainability in its decision-making and guidance. Based on the findings, NICE should consider the following:

1. Formalise and publicise its responsibility to make healthcare more environmentally sustainable, making reference to the benefits that more environmentally sustainable healthcare can provide.
2. Set clear parameters around efforts to improve the sustainability of healthcare so that patient health outcomes or personal preferences are not unduly compromised and that groups are not unfairly disadvantaged.
3. Explore ways to influence the healthcare supply chain to become more sustainable.
4. Identify care that provides no benefit and produce guidance to reduce the provision of such care.
5. Provide and support the implementation of guidance on preventative healthcare.
6. Develop ways to make judgements about how the financial versus environmental costs and benefits of health interventions should be considered when making recommendations.
7. Identify circumstances in which it is appropriate to consider the environmental impact of a health intervention, accounting for factors including unmet clinical need and the severity of the health condition.
8. In cases where multiple care options exist that are comparable in terms of clinical and cost effectiveness, recommend the more environmentally sustainable option as the default for new patients.
9. In shared decision-making contexts, inform patients about the environmental impacts of different interventions, in ways that account for considerations such as patient circumstances, avoiding coercion, and healthcare providers' time and expertise.
10. Ensure full transparency regarding the decisions made in the context of healthcare and environmental sustainability.

7. Appendices

7.1 Appendix 1: Participants profile

Table 1: Sample characteristics and achieved quotas at the end of workshop 3

Characteristic	Achieved quotas	
Sex	Male	13
	Female	10
Age	18 to 24	5
	25 to 44	6
	45 to 64	5
	65+	7
Ethnicity	White British	8
	White Other	1
	Indian	3
	Bangladeshi	2
	Pakistani	2
	Black African	3
	Black Caribbean	1
	Mixed White/Black African or Caribbean	3
Location	Urban	11
	Suburban	3
	Coastal rural	3
	Farming rural	3
	Rural – other	3
Region	East of England	2
	East Midlands	2
	London	4
	North East	1
	North West	4
	South East	2
	South West	4
	West Midlands	1
	Yorkshire	3
Household Income	£25,000 or less	6
	£25,001 to £35,000	8
	£35,001 to £60,000	9
Health	Health condition known to be impacted by the environment.	2
	Received medical treatments known to have had an excessive impact on the environment.	2
	Both of the above.	2

7.2 Appendix 2: Methodological notes

This appendix provides further information about the research approach and methodology used at each of stage of the dialogue.

7.2.1 Preparation stage

During the preparation stage, Basis Social conducted 6 online interviews with 10 experts working at the intersection of health, healthcare and environmental sustainability (see **Error! Reference source not found.**). Interviewees were identified in consultation with NICE, with the aim of capturing a breadth of perspectives regarding the challenges and opportunities associated with making healthcare more environmentally sustainable. The interviews were used to help inform the design of the project and clips of recordings from the interviews were used to introduce the topic to participants during the first workshop. The interviews were also used to identify relevant literature to inform the background section (section 2.1) of this report.

Table 2: Expert contributors

Name	Role	Organisation
Sarah Ouanhnon	Senior Delivery Lead	NHS England
Natalia Kurek	Senior Clinical Lead	
Alex Wilkinson	British Thoracic Society Respiratory Consultant	East and North Hertfordshire NHS Trust
Jodi Sherman	Medical Director of Sustainability	Centre for Sustainable Healthcare
Genevieve Cameron	Programme and Research Manager	The Health Foundation
Tom Hardie	Improvement Fellow	
Fiona Adshead	Chair	Sustainable Healthcare Coalition
Keith Moore	Consultant	
Victoria Jordan	Head of Health Technology Assessments (HTA) and Market Access Policy	The Association of the British Pharmaceutical Industry (APBI)
Steve Hoare	Quality, Regulatory Science and Safety Policy Director	

For more information on the content of these interviews, see the ‘expert interview topic guide’ in the methodology annex.

7.2.2 Discovery stage

The aim of the discovery stage was to introduce participants to the purpose and remit of the public dialogue, to introduce NICE and its role in the healthcare system, and to begin exploring participants’ levels of awareness, concern and priorities regarding environmental sustainability

and the healthcare system.

Before the first workshop, participants were asked to record 2 videos and draw, find or take 3 pictures and post them on Incling. The purpose was to understand participants' views on what an ideal healthcare system looks like to them, their views regarding climate change, and what effects they believe climate change is currently having, both in the UK and internationally. See 'workshop 1 pre-task' in the methodology annex for more details on these activities.

Workshop 1 was held on Zoom on Wednesday 5th October from 6 to 8pm. This session involved 5 moderated breakout discussion groups, each consisting of up to 6 participants. The discussions were designed to enable participants to express their thoughts and feelings regarding climate change, including its relation to health. These discussions were structured to enable participants to first communicate their pre-existing knowledge and understanding of the environmental impacts of healthcare, and subsequently to learn more about the topic via a variety of stimulus, including video clips of expert interviews and an interactive quiz. Participants were then encouraged to share their reflections on what they had learned, including any impacts the information had on their views about health, healthcare and the environment. For more details on materials used in this workshop please see 'workshop 1 topic guide and stimulus' in the methodology annex.

Following the workshop, participants were invited to engage with each other online via a discussion board hosted on the Incling platform. This discussion board remained live for the duration of the dialogue, so that participants could continue to engage with 1 another and the topic over time rather than only during the live workshops. The research team also used the discussion board to share additional materials for participants to learn more about healthcare and environmental sustainability. For further details on the online learning materials shared via the discussion board, see 'workshop 2 pre-task' in the methodology annex.

7.2.3 Deliberation stage

The aim of the deliberation stage was to engage participants in debate about options, co-benefits and trade-offs associated with making healthcare more environmentally sustainable. Stimulating this debate would, in turn, provide opportunities to observe how participants made decisions regarding how to make healthcare more sustainable, including which other priorities mattered to them, and how they weighed these priorities relative to sustainability goals.

There are numerous ways in which NICE could help to make healthcare more environmentally sustainable. Different options have different consequences for people receiving care. They are also likely to vary substantially in terms of how they could reduce greenhouse gas emissions, the scale of potential emissions savings, and the barriers associated with implementation. Many of these outcomes are also unknown in reality, and hard, if not impossible, to predict accurately. These factors made the design of the deliberation stage challenging, for 2 main reasons.

First, to get a sense of what sustainable healthcare looks like in practice, it would be necessary to present participants with a lot of information in a short space of time. This challenge was compounded by the dialogue's online format, which lacks the immediacy and richness of face-to-face, making it more likely that participants will disengage when presented with an

abundance of information.

Second, in the absence of strong evidence around outcomes, it would be difficult to give participants accurate feedback about the consequences of different options. They would also lack a common measure for comparing the scale of the benefits and trade-offs associated with different options.

To overcome these difficulties, Basis Social gamified the deliberation process. Gamification refers to the use of gameplay elements in non-gaming settings, to enhance user engagement – in this instance, by designing ‘The game of NICE’. As described in section 2.3.3, this was a simple online board game in which participants learned about different actions NICE could take to help make healthcare more environmentally sustainable, debated these actions, and then voted for their preferences in the context of different healthcare situations presented to them. To aid deliberation, the game employed a points system to communicate the relative size of environmental savings, levels of public support for, and intensity of the barriers associated with each action. During the game, participants were presented with 6 different actions in total, comprising a mix of real-life and hypothetical examples of things that NICE could do to improve the sustainability of healthcare. These were:

action 1: choice of anaesthetic – providing patients with information and the choice of receiving a local anaesthetic via a spinal injection as an alternative to general anaesthetic

action 2: advice on green inhalers – providing patients with information and the choice of managing asthma using a dry powder inhaler (DPI) instead of a pressurised metered dose inhaler (PMDI)

action 3: remote consultations – switching to remote, virtual consultations as an alternative to face-to-face

action 4: ‘watch and wait’ approach – GPs advising patients to wait 48 hours to see if a condition improves on its own, instead of prescribing antibiotics immediately

action 5: social prescribing – an approach to managing health risks via lifestyle modifications (for example, diet and physical activity) to reduce the need for pharmacological intervention

action 6: accounting for sustainability – updating NICE’s appraisal process to formally account for the environmental impacts of a new intervention.

All the actions included in the game were co-designed by Basis Social and the NICE Steering Group for the project, to ensure they remained grounded in reality.

For each action, participants were asked to deliberate from 2 perspectives:

- **patient perspective:** first, participants were asked to imagine they were a person in need of care (or, in the case of action 6, someone who might one day require care) and had to choose which of 2 care options (1 more sustainable, 1 less so) they would prefer and why
- **citizen perspective:** second, participants were asked to imagine they were part of a NICE advisory committee reviewing a specific recommendation that NICE could adopt

to encourage a systems-wide shift towards the greener option.

These 2 perspectives reflect the fact that actions to make healthcare more sustainable will have an impact on multiple groups. They will affect patients, for example, by changing their experience of care and the care options they receive. They will also affect the wider population (in England and globally) and future generations, for example, by reducing healthcare's contribution to the climate crisis. Therefore, by making participants adopt 2 perspectives, 'The game of NICE' was designed to encourage them to think holistically about the impacts of sustainable healthcare, rather than just from 1 vantage point.

Participants played 'The game of NICE' during workshop 2, which was held on Zoom on 26th October 2022 from 6 to 9pm. They played the game in breakout groups of up to 6 participants, facilitated by a member of the Basis Social research team. For further details about 'The game of NICE', including the rules of the game and the stimulus used, see 'workshop 2 topic guide and stimulus' in the methodology annex.

7.2.4 Decision-making stage

Playing 'The game of NICE' afforded Basis Social and NICE the opportunity to learn more about how different values and priorities influence decision-making regarding environmentally sustainable healthcare. Drawing on these insights, Basis Social drafted a set of 14 principles intended to reflect participants' beliefs about how NICE should act to make healthcare more sustainable. For the pre-task, participants were invited to review the 14 draft principles and to indicate for each 1 whether they:

- supported the principle
- did not support the principle or
- supported the principle in some contexts but not others.

Participants who chose the third option were asked to explain, via an open-ended question, in which contexts they would support and not support the principle and why.

Workshop 3 was held on Zoom on 16th November 2022 from 6 to 9pm. The goal of workshop 3 was to understand participants' beliefs about how NICE should act to make healthcare more sustainable. To achieve this, it was important to frame the discussions correctly at the outset by reminding participants about why environmental sustainability matters to NICE. This was achieved using 2 methods. First, participants listened to a brief presentation recapping what they had learned in the previous workshops about the importance of environmental sustainability for health. Second, while in their breakout groups, participants completed an interactive exercise requiring them to weight the relative importance that NICE should give to the health outcomes of 4 different groups when making its decisions. These groups were:

- people in England currently receiving care
- people in England not currently receiving care
- future generations
- people living outside of England.

Together, these methods sought to limit participants' thinking solely from the perspective of the patient, by prompting them to consider the implications of NICE's sustainability-related

decisions on the health outcomes of a wider set of groups.

Following the framing exercises, participants remained in their breakout groups and discussed each of the 14 principles in turn. These discussions used the results of the pre-task as stimulus for conversation around how the participants voted and why, as well as how the principles could be improved to bring them more in line with their actual beliefs.

For further detail on the design of workshop 3, see 'workshop 3 topic guide and stimulus' in the methodology annex.

7.3 Appendix 3: Participant evaluative feedback

Following each workshop participants were asked to complete a survey to gather information on their views of the dialogue and ways in which the process could be improved. This appendix provides an overview of their responses.

The overall feedback was positive, with most participants reporting that they enjoyed the sessions (using a 0 to 10 scale; mean score: 8.7 out of 10; median score: 9 out of 10) and that they were run efficiently and effectively. These scores and those in **Error! Reference source not found.**3, below, are taken from the final survey, completed by 23 participants, covering views of all the workshops together.

Question: Please say how much you agree or disagree with the following statements

Scale: 0 Disagree to 5 Agree

Table 3: Participants' evaluative survey feedback

Statement	Mean score	Median score
I felt able to participate and express my views	4.8	5
The events were well organised and facilitated	4.7	5
The information provided was useful and well designed	4.5	5
The information was fair and balanced	4.5	5
The workshops gave me a clear understanding of the aims of the dialogue and how it will be delivered	4.4	5
Overall, I thought the events were useful and enjoyable	4.3	5

Overall, participants reported that researchers effectively managed the discussions with patience and empathy, which allowed participants to feel comfortable engaging with a difficult topic.

“Discussions were conducted in a respectful way and everyone had the opportunity to participate. Our group leader succeeded in getting some of the younger and less confident participants to engage in the discussions.”

“The organising of the workshops [went well]. Everyone was encouraged to voice their opinions on various concepts and topics. It was interesting to hear the differing opinions of a diverse group of people in the groups.”

“It was a very well structured and collaborative environment.”

Participants believed that the small discussion groups were effective for allowing people to have a chance to express their views, and for hearing the views of others. They also enjoyed the variety of topics and perspectives covered during the workshops and felt that the materials used to communicate these (for example, the presentations and 'The game of NICE' deck) were of high quality. Participants reported that they learned a lot from the sessions, for example, indicating that they exited the dialogue with a new appreciation of the challenges relating to healthcare and environmental sustainability.

“Having the smaller breakout sessions was great as you felt you had the chance to express your view in a larger group would be difficult especially with people who are louder and big personalities.”

“I like that the groups had different aspects to encourage the conversations, like the games in Session 2.”

“The workshops really made me think how hard it must be to make choices regarding care, whilst ensuring the impact on non-patients, future generations and the world.”

While feedback was largely positive, participants suggested 2 ways in which the dialogue could have been improved. First, some participants reported challenges staying engaged towards the end of longer, 3-hour workshops. Suggestions to address this included moving the time of the workshops, shortening the workshops or providing more time for breaks.

“I get a bit tired from 8pm onwards and as I eat my evening meal at 6pm, I found a day time slot would have suited me personally.”

“Possibly a slightly longer break each time – 10 minutes might have been better.”

“Overall sessions went really well. The dice game at the end of a three-hour brain workout on zoom just made me laugh – I was already losing the plot by then!”

Second, a small minority of participants indicated that other participants in their breakout groups occasionally struggled with the complexity of the subject matter, sometimes taking the conversation down less relevant tangents. While acknowledging that the moderators did a good job in keeping these participants focused on the topic at hand, they recommended further care in the future to simplify the questions and learning materials as much as possible.

"I think more effort could have been made to ensure that the discussions kept on track. Some participants went off piste with irrelevant contributions. I do realise that it's a bit like herding cats and that I may also be guilty of the same offence."

"I thought our facilitator was very good and was very good at trying to keep people on topic and to answer the questions, but some members of the group clearly did not understand what the questions were asking and were unable to think in a hypothetical way."

7.4 Appendix 4: Strengths and limitations of this project

The core challenge of this dialogue was how to make the consequences of environmentally sustainable (or unsustainable) healthcare choices accessible and tangible to participants, while remaining faithful to the complexity of a multi-system problem like climate change. The scale and potential implications of this problem are difficult to communicate without resorting to large numbers, opaque metrics, and doomsday-like scenarios. Moreover, evidence on the carbon footprint of healthcare is still immature, making it difficult to predict the impact of the specific sustainability actions NICE could take. This, combined with the limited amount of real-life examples to share, may have contributed additional challenges to participants understanding the topic and the implications of the actions considered.

In response to these challenges, this study made innovative use of a range of creative research and communication techniques, including scenarios, animation and gamification. It also relied on the expertise of NICE and associates to ensure that the information provided via these methods was as accurate and robust as possible.

Beyond the inherent complexity of the subject matter, this public dialogue involved online qualitative research, using an iterative design that was responsive to the priorities of those participating based on the discussions and feedback gathered following each workshop. These elements are both strengths and limitations, as the points below illustrate.

Qualitative research offers depth of insight and is fully appropriate for complex subject matter such as environmental sustainability. Furthermore, deliberative methods, in which participants are gradually exposed to new information and perspectives over time, with opportunities to pause and reflect, is an enabling approach. Participants are supported to build up the confidence to articulate their views on sensitive subject matter in a way that is meaningful and attempts to address power imbalances.

Traditional qualitative approaches such as focus groups or quantitative surveys are much less likely to achieve the depth of insights into people's priorities and the reasons behind these. The level of nuance achieved through the presentation of such a variety of scenarios would be hard to achieve via alternative methods.

While a qualitative approach was appropriate given the exploratory focus of the dialogue, it is not possible to generalise from the findings in the same way that would be possible if the research involved more of a quantitative approach. This dialogue had a small initial sample size of 28 participants and a closing sample (following dropouts) of 23. While these sample sizes are suitable for this form of deliberative engagement, they meant it was not possible to

include participants from all societal groups (for example, the sample did not contain any white non-British individuals).

Dropouts following workshop 1 were replaced by new participants, to maximise the sample size going into workshop 2. Replacement participants were brought up to speed via an one-to-one online interview, the topic guide for which mirrored that used in the first workshop. Replacement participants also viewed the same learning materials as used in the workshop. While this process meant that replacement participants came to workshop 2 having been educated about the topic to the same degree as other participants, it was decided that dropouts following workshop 2 could not be replaced, because there would be insufficient time to get new participants up to speed for workshop 3.

The online approach of the dialogue enabled the research team to reach a wide representation of people from across England. This would have been less feasible with a face-to-face approach. It also enabled participants to take part in pre-workshop tasks and discussions that extended the dialogue beyond the 3 workshops. An online approach was also more convenient for participants to attend as there was no need to consider time to travel. This made it easier for individuals to fit the workshops around work schedules and other commitments. It also meant there was no need to consider budget for travel and accommodation.

However, an online approach does mean that the dialogue did not include those participants considered to be digitally excluded. There were also some participants whose internet connections were weak and disrupted the discussions for them. These participants were given alternative means to engage such as through the chat function and the discussion board.

An iterative approach to the dialogue was adopted, to ensure that the topics for discussion were aligned with participant priorities and interests, while still accounting for the overall objectives. The benefit of this was that the materials developed and areas for discussion were tailored to the needs of participants and helped to steer the dialogue in a very natural manner. There are, however, limitations to an iterative approach, namely it makes it more difficult to replicate the research (nevertheless, all research tools including stimulus and topic guides can be found in the annex).

Finally, the scenarios presented to participants were selected to explore trade-offs and elicit responses on where NICE should draw the line regarding sustainability and other priorities. This means scenarios were chosen in part precisely because they suggested a tension between sustainability and other priorities. As sustainability is actually often closely aligned with NHS priorities (and what patients want), the selection of scenarios may have unintentionally biased participants to perceive more conflict between sustainability and other priorities than is the case. To counter this risk, Basis Social and NICE were careful to present different scenarios as fairly and accurately as possible, highlighting the benefits and trade-offs associated with both more and less sustainable options.

7.5 Appendix 5: Drivers and barriers of preferences expressed during ‘The game of NICE’

Table 4: Summary of drivers for and barriers to support for greener options when thinking from a patient perspective

Action	Greener option	Other option	Support for greener option	Drivers of support for greener option	Barriers to support for greener option
1: Choice of anaesthetics	Knee surgery patient receives local anaesthetic via a spinal injection	Knee surgery patient receives general anaesthetic (GA)	Most in favour	<ul style="list-style-type: none"> Dislike of experience of gradually waking after GA (for example, grogginess) Less pharmaceutically intensive option seen as healthier option Environmental benefits (secondary) 	<ul style="list-style-type: none"> Discomfort with experience of being awake during surgery Perceived risks to health because of spinal injection Lack of familiarity with greener option reduces confidence in efficacy
2: Advice on green inhalers	Patient with asthma switches to a new dry powder inhaler (DPI)	Patient with asthma keeps their pressurised metered dose inhaler (PMDI), which they are already familiar with	Mixed	<ul style="list-style-type: none"> Perceived as an ‘easy’ switch Greater support if allowed to keep PMDI inhaler in case of emergencies/during a transition period Environmental benefits – a more influential driver for this action compared to others, as asthma is seen as directly impacted by the environment 	<ul style="list-style-type: none"> Unfamiliarity with DPI compared to PMDI reduces confidence in clinical effectiveness Unfamiliarity with DPI compared to PMDI contributes to greater anxiety over ability to manage an asthma attack
3: Remote consultations	Patient with diabetes uses a wearable device to monitor condition remotely and has remote consultations with care provider	Patient with diabetes has face-to-face appointments with care provider for monitoring and consultations	Most in favour	<ul style="list-style-type: none"> More convenient to patient Familiarity with remote methods because of COVID-19 Opportunity to reduce the burden on the NHS (for example, reduced waiting times) Environmental benefits (secondary) 	<ul style="list-style-type: none"> Concern that remote consultations are lower quality than face-to-face, increasing risks to patient health outcomes Concern that some groups (for example, less digitally literate) may be excluded, increasing risks to patient health outcomes
4: ‘Watch and wait’ approach	Patient with a new UTI waits 48 hours to see if symptoms improve without need for antibiotics	Patient with a new UTI is immediately prescribed antibiotics	Mixed	<ul style="list-style-type: none"> Aligns with current approach for managing symptoms Belief in the value of reducing reliance on pharmaceuticals May help reduce threat of antibiotic resistance Environmental benefits (secondary) 	<ul style="list-style-type: none"> Skepticism about getting follow-up appointment because of NHS shortages Preference to alleviate discomfort as quickly as possible Perceived risks to health because of symptoms worsening
5: Social prescribing	Patient with high cholesterol manages condition through lifestyle modifications	Patient with high cholesterol manages condition using medication (statins)	Universal	<ul style="list-style-type: none"> Belief in taking personal responsibility for health Belief in the value of reducing reliance on pharmaceuticals Opportunity to reduce burden on the NHS (for example, reduced demand for prescriptions) Environmental benefits (secondary) 	<ul style="list-style-type: none"> Some concerns about the feasibility of social prescribing without significant public investment in community-based services
6: Accounting for sustainability	NICE accounts for environmental impacts as part in its appraisal process for new interventions	NICE does not account for environmental impacts in its appraisal process for new interventions	Mixed	<ul style="list-style-type: none"> Distrust that suppliers will become more sustainable of their own accord (and therefore need to be incentivised) More support if restricted to interventions for less severe/non-life-threatening conditions Environmental benefits 	<ul style="list-style-type: none"> Slower or limited access to new treatments presents too great a risk to patient health

Table 5: Summary of drivers for and barriers to support for greener options when thinking from a citizen perspective

Action	Proposed recommendation	Support for recommendation	Drivers of support	Barriers to support
1: Choice of anaesthetics	NICE recommends that clinicians give patients the choice of anaesthetic procedures when it is safe and appropriate to do so.	Universal	<ul style="list-style-type: none"> Most would personally prefer the greener option as a patient, so happy to support recommendation. Personal preferences driven by: <ul style="list-style-type: none"> Dislike of experience of gradually waking after GA (for example, grogginess) Less pharmaceutically intensive option seen as healthier option Environmental benefits (secondary) Preserves the patient's right to choose the non-green option if they prefer 	<ul style="list-style-type: none"> N/A
2: Advice on green inhalers	NICE recommends that GPs discuss the environmental benefits of switching from PMDIs to MDIs with their patients.	Universal	<ul style="list-style-type: none"> Around half would personally prefer the greener option as a patient, so happy to support the recommendation. Personal preferences driven by: <ul style="list-style-type: none"> Perception as an 'easy' switch Greater support if allowed to keep PMDI inhaler in case of emergencies / during a transition period Environmental benefits – a more influential driver for this action compared to others, as asthma is seen as directly impacted by the environment Preserves the patient's right to choose the non-green option if they prefer 	<ul style="list-style-type: none"> N/A
3: Remote consultations	NICE recommends remote consultations and monitoring when face-to-face appointments are not necessary.	Most in favour	<ul style="list-style-type: none"> More convenient to patient Familiarity with remote methods because of COVID-19 Opportunity to reduce the burden on the NHS (for example, reduced waiting times) Environmental benefits (secondary) 	<ul style="list-style-type: none"> Distrust around who gets to decide when a face-to-face appointment is necessary
4: 'Watch and wait' approach	NICE recommends a 'watch-and-wait' prescribing approach in all cases where it is safe and appropriate to do so.	Most in favour	<ul style="list-style-type: none"> Reassurance of the caveat 'where it is safe and appropriate to do so' 	<ul style="list-style-type: none"> Preference for a more targeted or case-by-case approach as opposed to a generalised recommendation, which is perceived as more risky to patient health Distrust around who gets to decide when a watch-and-wait approach is safe and appropriate
5: Social prescribing	NICE recommends that GPs consider social prescribing for conditions where there is evidence it can be effective.	Universal	<ul style="list-style-type: none"> All supportive assuming that: <ul style="list-style-type: none"> other care options remain available for those for whom social prescribing is not suitable community support services are sufficiently robust to make this approach feasible 	<ul style="list-style-type: none"> N/A

6: Accounting for sustainability	NICE will account for environmental sustainability when appraising new treatments.	Mixed (with a small uptick in support when compared to corresponding action under the patient perspective)	<ul style="list-style-type: none"> • Recognition that the climate crisis needs to be addressed, which means difficult decisions may have to be made 	<ul style="list-style-type: none"> • Slower or limited access to new treatments presents too great a risk to patient health
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