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# Shared (carbon-considered) decision making?

You've almost certainly never discussed carbon impact as part of consent and shared decision making. Should you start to?

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Funded by SBRI Healthcare and NHS England, Concentric Health has been exploring the thoughts of 281 clinicians and patients regarding whether carbon impact should be considered as part of a shared decision making conversation. What we heard was often surprising, certainly showed a broad range of opinions and may give some insight into the direction of travel.

Before we dive in, take a moment to reflect on your current thoughts. Do you think patients should consider carbon impact when making treatment decisions? Are there some scenarios where you might consider it appropriate to do so? What would you see as the potential benefits and pitfalls of introducing carbon impact into shared decision making conversations? Where do you see the relative importance of discussing the carbon impact of individual treatments and their alternatives with patients compared with other sustainability initiatives in healthcare and beyond?

## DAILY CHANGES AT AN INDIVIDUAL LEVEL

As a society, we are increasingly aware of climate change and the impact of human activity on the environment. Like much of Europe, the UK saw record temperatures this year; extreme weather events are becoming more common around the world and there is a widespread understanding that urgent action is required to avoid potentially disastrous consequences within current lifetimes.

In the UK, this growing awareness has been a factor in several social changes that we as individuals have been asked to engage with or nudged towards, from reducing plastic bag usage following the introduction of mandatory charging to increasing support for electric vehicles and active travel. So far, however, environmental impact has rarely (if ever) been a consideration for people making choices about their healthcare.

It is worth pausing and at least considering whether that is right. In 2019, the carbon footprint of the NHS in England was 25 megatonnes (25 billion kilograms) of carbon dioxide equivalent.[1] With operating theatres being 3–6 times more energy intense than the hospital as a whole,[2] maybe there is reason to give more thought to this area of healthcare, even if not anywhere else.

While clinician-led initiatives are starting to combat this impact (for example, with the move from using desflurane to lower-carbon sevoflurane for anaesthesia), it is not usually something that patients have any awareness of, let alone have control over. In the context of shared decision making, where patients are increasingly involved in decisions about their healthcare, framed around what matters to them, to what extent might it be appropriate or desirable to discuss the carbon impact of treatment options?

*Sustainability needs to be part of the curriculum in all medical schools and training programmes, including foundation and higher surgical training*

## UNDERSTANDING PERCEPTIONS AND PERSPECTIVES

Discussions about medical treatment have a high cognitive load for patients, who are often exposed to information that will change their lives. The clinicians who facilitate these discussions are also dealing with extensive ethical, medicolegal and system complexities. If carbon considerations are to be incorporated successfully into existing consultation processes, this needs to happen in a way that works for everyone.

Human centred design principles provide a structure for understanding people's behaviours, needs and emotions as a problem solving technique. In our case, the question was twofold: first, should carbon impact play a role in shared decision making and second, based on that insight, what supportive role might digital consent applications such as Concentric play, given what recent publications have shown regarding their impacts on shared decision making more broadly?[3]

Over six months, we conducted interviews and surveys with patients who had recently undergone surgical procedures, and with clinicians. By spending time exploring their perceptions and perspectives, we have been able to, for the first time, create a snapshot of current opinion, and bring together two frameworks for how carbon considerations could (in some cases) be introduced into shared decision making conversations in a way that respects the needs of both patients and clinicians.

Below we explore some of the insights from our research. Each of these is looked at in more detail in the full insight report, published on the Concentric Health website.[4]

## MY HEALTH TRUMPS THE PLANET'S HEALTH

'*You can't bring back your health. So... am I going to save two trees? Am I going to choose the trees or me? It will be me.*' – Patient

For both patients and clinicians, patient health is a top priority. However much they care about the planet as an individual, neither patients nor clinicians are prepared to accept worse health outcomes to reduce their carbon impact. Equally, patients trust (and expect) clinicians to advise them on what is best for their health, regardless of carbon impact.

*'It would complicate the consultation and would probably detract from the patient outcome, which is the most important thing, even though climate change and the climate emergency are very important.'* – Clinician

### ENVIRONMENTAL DISCOMFORT

Perhaps surprisingly given the previous insight, patients generally (especially those who are more environmentally minded) told us that in cases where the long-term outcomes were the same, they would opt for a treatment option that left them less comfortable in the short term if it had a lower carbon impact.

*'If I could suffer through that short initial discomfort and think yeah, it's fine because the long-term goal is the same, but it's having a smaller impact on the world, then I would be, like, okay.'* – Patient

*Patients with less severe conditions are generally more open to discussing carbon impact*

### MORE ACCEPTABLE AS SEVERITY REDUCES

*'I've never had anybody ask me about the carbon impact of that treatment. Possibly because they're terrified. They're more worried about dying than worrying about the carbon impact.'* – Clinician

Patients with less severe conditions are generally more open to discussing carbon impact but clinicians need to assess this on a patient-by-patient basis. Severity is not an objective measure, and social and familial factors can influence the impact a condition has on a patient's life. A key consideration here should be the degree of stress the patient experiences about their condition.

*'It depends. I mean, what is your personal severity? But the environment is just as serious.'* – Patient

### TIMING AND FRAMING

Discussions about treatment can be emotionally charged and it is already hard for patients to absorb important information. When and how (if at all) to add carbon impact into the mix needs careful consideration.

During our research, we saw clearly that opinions on the environment cannot be assumed and patients' acceptance of discussing the carbon impact in different scenarios was highly variable. The need to approach the issue sensitively was also apparent; unsurprisingly, patients do not want to be demonised or made to feel that the environment is more important than their health.

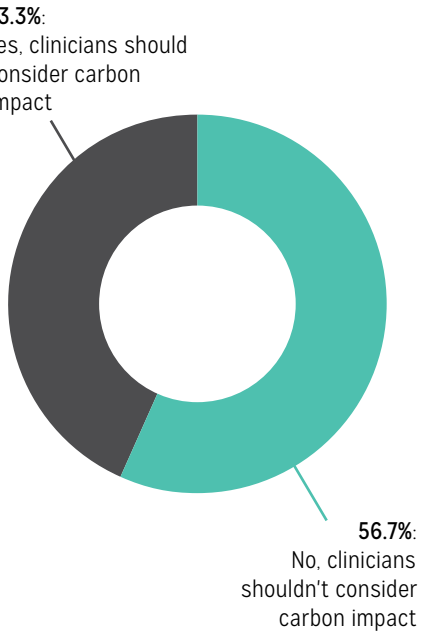
*'If a doctor put that to me while I was panicking that there could be something wrong with me, then I would not be amused.'* – Patient

Timing also raised some challenges. Patients did not seem receptive to discussions around the carbon impact too soon after their diagnosis and prognosis have been explained but were equally negative about discussing this too close to a procedure owing to the stress of the upcoming operation. In a stretched system with few patient–clinician touchpoints, the optimal window of opportunity seemed narrow.

*'It would likely be inappropriate on the day of their surgery as part of the consent process. I think a discussion or information provided at the preoperative assessment would be a good idea.'* – Clinician

There was awareness among the clinician cohort of the significant carbon impact of healthcare. Many felt that the carbon impact of treatment was a 'drop in the ocean' compared with healthcare more broadly (certainly at an individual decision level) and that focus would be better served looking at system-wide infrastructure changes.

Figure 1 Do patients think clinicians should consider carbon impact as part of their recommendations?




*'The biggest impact is going to be in making major infrastructure changes in how we source our energy, and that is structural, and that will have to take place at a senior NHS level.'* – Clinician

*'What impact can a patient have if he tries to choose the less environmentally harmful treatment? How much change can we make? I think it's very minimal.'* – Clinician

Figure 2 Needs ladder for empowering clinicians to incorporate carbon considerations into treatment discussions

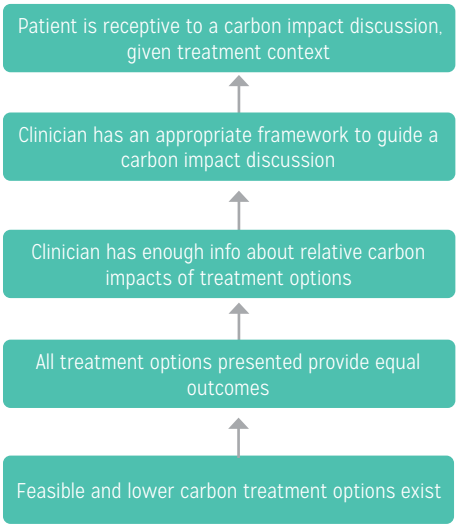
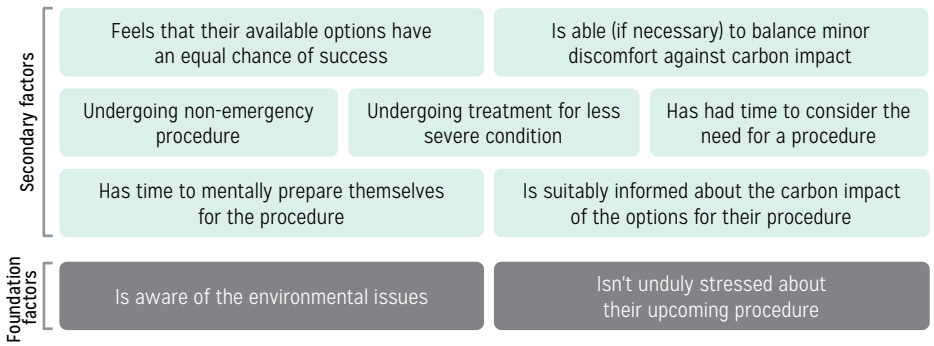


Figure 3 Determining the appropriateness of carbon impact discussions




## A DESIRE FOR (CAUTIOUS) CHANGE

It is clear from our research that it is often inappropriate or undesirable to introduce carbon considerations into shared decision making conversations. It is also apparent that more patients than we may have expected want to know about the environmental impact of their treatments and want their clinicians to be considering it (Figure 1).

With surgical procedures being among the most carbon intensive events in a patient's life, changing demographics seem likely to strengthen the case for discussing the carbon impact over time. In the UK, younger adults are more likely to be very worried about the impact of climate change[5] but the average age of a person undergoing surgery is 54.2 years (compared with a population-wide average age of 39.7 years).[6] As this more environmentally aware generation ages, they will become more likely to need surgical procedures. When they do, our research suggests that they (or at least a significant proportion) will be eager to understand the carbon impact of their surgery.

## UNCOMFORTABLE UNCERTAINTY

'*I'm completely unaware of what the carbon impact would be. I wouldn't feel qualified to discuss that.*' – Clinician

Clinicians are used to being the expert in the room, and while medicine is always changing and driving us to learn afresh (such as with the introduction of robotic procedures), many clinicians were uncomfortable regarding the idea of needing to discuss carbon impact in the near future. Interestingly, sustainable healthcare is now featured in the General Medical Council's outcomes for graduates: 'Newly qualified doctors must be able to apply the principles, methods and knowledge of [...] sustainable healthcare to medical practice.'[7] Based on what we heard from clinicians, unsurprisingly and certainly not through any fault of those individuals, there is currently a lack of knowledge and skills among healthcare professionals to be able to competently and confidently discuss carbon impact with patients.

## TWO FRAMEWORKS TO CONSIDER

Considering the desire for change and the uncomfortable uncertainty discussed above, we propose two frameworks for facilitating the successful introduction of carbon impact into any shared decision making conversation, and for assessing an individual patient's situation and the appropriateness of introducing carbon considerations. The first is a hierarchy of requirements (Figure 2), with each needing to be in place before consideration of patient factors. In reality, as of today, we generally fall at the first requirement: we simply do not know the carbon impact of different treatments. We believe the work described in this article adds to the rationale for expanding our knowledge in this area. The second is a framework to support clinicians in assessing whether it would be appropriate to discuss carbon impact if the other steps on the above hierarchy are met. (Figure 3)

## CONCLUSIONS

Our user research suggests that it would sometimes be feasible and desirable to introduce carbon impact into shared decision making, and that a desire to do so was seen in both patient and clinician cohorts. There are, however, several factors to be considered on a patient level, and there are many research, system and educational challenges to be faced before we can realistically expect carbon impact to be regularly, appropriately and usefully introduced into shared decision making conversations.

We believe that this is work that should be done as it can play an important role in the journey towards net zero healthcare. After all, patients' desire for visibility and consideration of carbon impact is likely to increase over the coming years.

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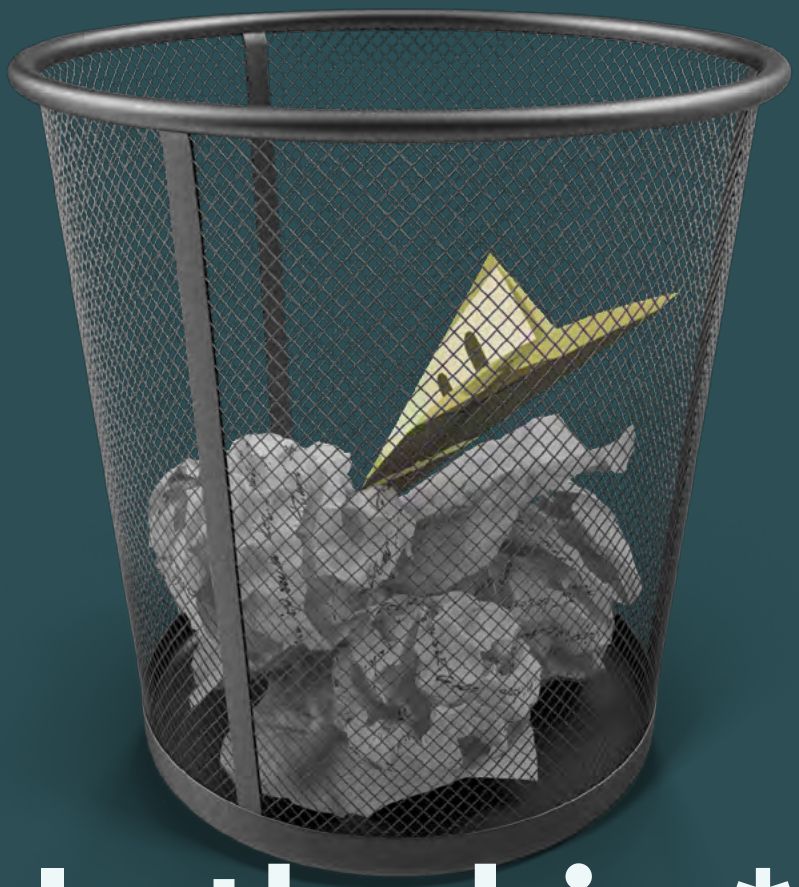

# In the bin.*

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*Only put the unused ones in the bin. Don't go crazy.