# Making sustainable healthcare decisions: three turns towards sustainable guidelines

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## Introduction

Over time, an international consensus on 'best practice' for developing a range of guidelines has been reached in many areas. However, there are always new challenges for guideline developers. Sustainability is one of those increasingly important challenges as it is for healthcare professionals, government policy-makers, organisational leaders, patients and citizens.[1]

Sustainability may nowadays seem to many as meaning a concern for planetary health in view of climate change only. However, historically and conceptually environmental sustainability (living within the planets boundaries) forms a trinity with social equity and economic sustainability,[2] as those with less resources are often most at risk of the consequences of poor planetary health.[3]

This broader understanding of sustainability has been adopted most notably in the 17 United Nations Sustainable Developments Goals that include well-being, climate action, clean energy, decent work, sustainable growth and reduced inequalities.[4] Through this and other frameworks, healthcare institutions and professional bodies everywhere have committed themselves to provide and train for sustainable healthcare.[5]

Initiatives have begun to bloom to include sustainability in guideline development too, but much still has to happen. Sustainability is, for instance, considered in many evidence to decision (EtD) frameworks such as GRADE, but only in the sense of equity and feasibility, not environmental sustainability.[6] In this article, inspired by an international workshop 'Sustainable Healthcare Guidance' at the Guidelines International Network meeting, held in Toronto, Canada in September 2022, we argue that three important shifts in guideline development are required.

## Shift 1: giving sustainability a place in guidance

The extent to which sustainability should be included is likely to differ by disease, setting, healthcare system arrangement and system response. Public health guideline developers, for example, have considered the impacts of sustainability in its broadest sense for many years in topics around access to safe housing—healthcare professionals helping request a housing assessment if there are concerns about housing conditions. Population-based lifestyle advice can also be a vehicle for including environmental sustainability into health guidelines. For example, eating less red meat has both health and environmental benefits.[7]

In terms of clinical guidelines, several asthma guidelines now recommend powder inhalers instead of metered dose inhaler aerosol inhalers when appropriate,[8] serving as another example of guidance that considers environmental sustainability with an important impact on individual clinical decision-making. Clinical guideline for environmental sustainability in dentistry[9] outlined a number of aspects for dental professionals to consider including travel, procurement, waste management, energy efficiency, education, biodiversity and effective prevention which goes beyond specific interventions.

But even if everyone is committed to giving environmental sustainability a place, where is the right place in guideline development? The EtD paragraph might not be enough. Taking every opportunity to give the message about sustainability is important. Consideration should begin at scoping and question-setting—for instance, by making a commitment to including environmental sustainability alongside considerations such as effectiveness or cost-effectiveness, directing questions at tackling overuse of resources or decommissioning resources—and throughout evidence generation, by searching environmental science or other specialist databases, including environment impact as an outcome and including sustainability as a consideration when drafting recommendations.

But guideline production itself should be more sustainable too—for example, by reducing duplication of effort by questioning if a 'de novo' guideline is necessary, sharing and reusing data between guideline developers, limiting use of material resources, lowering the developers carbon footprint by hosting virtual committee meetings and by taking environmental sustainability into account in supply chain decisions.

## Shift 2: appraise and include evidence on equity and environmental sustainability
*Fantastic types of evidence and where to find them*
We need a far wider range of evidence types to complete the puzzle around the plausibility of causation or correlation when it comes to sustainability. The guideline community has seen great

efforts to develop and implement tools to appraise the outcomes of randomised controlled trials (RCTs) as the dominant form of knowledge used in evidence-based decision-making. But sustainability is underpinned by complexity theory and calls for transdisciplinary evidence to get a full picture instead.

Data may exist in disciplines guideline developers are less familiar with such as the social sciences, humanities, urban development, construction materials and engineering. How do we balance the costs and resources of searching for evidence on sustainability, especially if we do not know the areas of concern in advance? There is a need to be practical but also avoiding decisions with significant unintended consequences. A starting point would be new kinds of databases such as Social Systems Evidence (https://www.socialsystemsevidence.org/) but also to ask researchers and funders to design and fund research to generate evidence that actually considers the complexity of sustainability where there is none.[10] This would also imply that reviewers of funding applications need to be selected, trained and skilled in transdisciplinary approaches and perspectives.

However, often evidence, for instance, on the carbon footprint of interventions, will simply be lacking. This is not necessarily a new problem as research shows that guideline panels are used to 'the specific management of the absence of evidence, requiring a transparently reported process of evidence searching, selection and presentation. [...] The legitimacy of Evidence-Based Medicine relies neither on experts nor numbers, but on distinct procedures for handling (non-)evidence, reflecting its 'regulatory objectivity'.[11] The challenge is that exactly these procedures need to change.

### How to appraise and include evidence with current tools

Including sustainability may require the adaption of reporting standards for research to even consider the systematic and transparent inclusion of sustainability findings in guidance in the first place. Guideline developers will need to adopt new methodologies, such as qualitative research or environmental impact modelling. Toolan et al[12] have outline a number of approaches to including environmental impact assessments in health technology assessment (HTA). These include using HTA as a means of sharing environmental data with guideline committees and end users, developing novel methods to allow environmental information to be synthesised in a single quantitative analysis alongside health and cost outcomes. They highlighted that technical challenges include getting agreement on methods that can be applied across health topics and, where possible, standardising environmental outcomes across different domains.

Not all guideline developers may initially accept these methodologies to support recommendations. New procedures would involve including study designs considered as 'low-level' evidence from sources other than RCTs, in the traditional evidence-based medicine paradigm. Appraising and including such kinds of knowledge will require teaching a new philosophy of science to create a level playing field of ways of reasoning and finding truth statements beyond a focus on statistics[13] in current evidence-based education. This became very apparent in the early recommendations on mouth masks during the pandemic, where waiting for frequency data may have caused avoidable harm.[14] Instead of overly relying on frequency type induction (comparing large groups of subjects) a more pragmatist approach is needed that reinstates combinations of pathophysiological mechanistic reasoning, the precautionary principle, logic of care, falsifiability and other modes to make inferences.

For instance, on the NICE guideline on 'indoor air quality at home' (NG149) evidence from different sources and study designs was triangulated in order to give a complete picture to the committee. In this case, the evidence was triangulated between studies examining sources of pollution and levels of pollutants, studies examining levels of pollutants and health symptoms and finally studies examining sources of pollution and health outcomes.

Sustainability also provides new criteria and need to reappraise existing recommendations. Concerns about limited healthcare staff may benefit from an appraisal tool to calculate the absolute and relative time commitment of any recommendations to inform their feasibility.[15] For example, a simple recommendation to briefly check and discuss physical activity for primary care patients may end up taking 15% of a single GPs time, with little contribution to overall cardiovascular outcome.

### What expertise on panels is required

Taking sustainability into account includes getting the right people in the decision space. Specialists from a wider range of disciplines may need to help committee members understand the relevance of the concepts being considered and to help interpret these for patients and healthcare professionals. And as the membership of the guideline committees change—do we expand the panel or use experts from other disciplines as external consultants on an as needed basis[16]? For example, antibiotic resistance is the responsibility of both prescribers for humans (clinicians) and prescribers for animals (veterinarians).[17] Inviting these two professional groups around the table may not come naturally to clinical guideline developers.

In public health, guideline developers are more used to other disciplines. For example, the NICE guideline on physical activity and the environment (NG90) included experts on traffic and transport from a UK local authority and an expert in landscape architecture on the guideline committees. And consideration of environmental sustainability may move clinical guidelines somewhat away from supporting decisions for individuals to populations—as in national screening programmes.

New standards are needed to include views of patients who cannot easily be represented during development, as for instance, those affected by climate change living far away or are part of future generations; minimise the risk of unintended consequences for all relevant contributors, such as the risk of potential for stigma in selected populations; to balance the resources needed to access those more diverse views; and to guide panel decisions, for example, whether consensus decisions allow for different voices and the role of the panel chair.

### Shift 3: a move away from standardisation: efficiency versus equity?

The COVID-19 pandemic highlighted the unequal impact of the virus on the health outcomes of those living in low socioeconomic status (SES) areas. Those living in low SES areas were less likely to be tested but more likely to test positive, be admitted to hospital, or die. This in turn has led to a move in guideline production away from standardisation towards targeted guidance for specific vulnerable groups.[18] Sustainability brings a significant conceptual shift as the early proponents of guideline production and EBM set out to reduce variation and stop the 'postcode lottery' in the provision of care.

A challenge of standardisation is that the impact of a recommendation may differ depending on the perspective, for example, a recommendation to improve air quality by ensuring adequate

ventilation by opening windows when using a gas stove, may disadvantage those on low incomes who are more likely to live in areas close to major traffic routes and thus increasing ventilation may swap one form of pollution with another.

Sustainable recommendations need also be more about resilience than efficiency. That is, sustainable healthcare may be more costly than standardised care. The pandemic made many aware a drive towards efficiency of public services in the past decades had made healthcare systems vulnerable, increased inequalities and reduced the well-being of many.[19] Moreover, efficiency in healthcare guidance has, so far, routinely disregarded future costs related to impacts on planetary health.

Sustainability of the healthcare system itself should be a topic for guideline developers (see https://sustainablehealthcare.cochrane.org). Even though guidelines may have increased overtreatment in some areas, there is agreement in the guideline community that they are still the means to reduce the number of unnecessary interventions and therefore staff and resource use.

Sustainability requires a system perspective from guideline developers to understand the issues and impacts. Because of the complexity, there is a greater potential for unintended consequences as a result of guidance and recommendations.[20] And implementation of guidance becomes even more of a challenge.

Especially when tackling social inequity and planetary health, some groups may not benefit as much as others, so the messaging and rationale need to be clear. This puts further pressures on guideline developers as we saw during the pandemic when some guideline organisations were even sued for specific recommendations around vaccination. Good communication of recommendations is even more important in case they cross over to other disciplines and areas that may seem unusual or even unfair to some. For example, in the UK, there are moves for the National Health Service (NHS) to be more involved in prevention of poor health. Increasingly, the NHS is adopting interventions such as funding for heating homes or for ensuring access to fresh fruit and vegetables in order to avoid increased costs of future hospitalisations (see https://www.thevillagesurgerygarston.nhs.uk/news/healthy-homes/#).

The new challenges of sustainable guidelines show once again that guideline development cannot be a cookbook or tick-box exercise. It continues to require appropriate reflectiveness and context awareness of guideline developers. A way to improve this may be to integrate collaborative transdisciplinary guideline development better with healthcare planning as has been tried in the NHS commissioning groups for years. These regional committees bring together all kinds of stakeholders, including clinicians, patients, payers and experts from several disciplines around clinical topics to calculate capacity of services based on real-world data and negotiate several interventions at once. Decision support procedures and tools for commissioning groups should be adapted to include evidence-based social and environmental considerations.

Transforming guideline development takes time but there is so little when it comes to climate change. Fundamental values need a swift rebalance as environmental and equity considerations reform what until now have been considered effective and acceptable health and care recommendations.

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