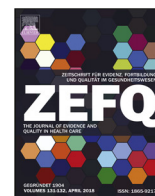




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## Planetary health in medical guidelines – A workshop report from the conference of the evidence-based medicine network 2023



### Planetary Health in Leitlinien – Ein Workshop-Bericht vom Kongress des Netzwerks Evidenzbasierte Medizin 2023

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## ABSTRACT

**Introduction:** Guidelines may play an important role in the process of adopting a planetary health perspective in clinical medicine. Current issues relating to the integration of planetary health aspects in guidelines were discussed during a workshop at the German Network for Evidence-Based Medicine conference in 2023.

**Methods:** In a multidisciplinary workshop, 25 persons with an interest in guideline development selected important planetary health dimensions that could be promptly included in guidelines. Group discussions addressed the challenges of integrating planetary health aspects in guidelines and feasible solutions.

**Results:** Participants recommended to first integrate the dimensions *Environmental impacts, Prevention & co-benefits* and *Choosing wisely* and provided corresponding rationales. Updating evidence to decision frameworks and including relevant climate outcomes (e.g., CO<sub>2</sub> equivalents) in clinical trials were regarded as crucial. Pragmatic steps to integrate planetary health aspects such as an adapted guideline layout and prioritization of recommendations were proposed.

**Discussion:** Changes in the guideline development processes are necessary to incorporate the planetary health perspective into guidelines. Capacity building for guideline developers and modifications to frameworks are important next steps. Public discussion and cooperation between guideline developing bodies are therefore essential to move beyond the results of this workshop.

**Conclusion:** The aforementioned workshop underpins the strong interest to integrate planetary health aspects into guideline frameworks to eventually promote planetary health in clinical medicine.

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## ZUSAMMENFASSUNG

**Einleitung:** Leitlinien können dabei helfen, die Planetary-Health-Perspektive in der klinischen Medizin zu integrieren. Um Leitlinien dahingehend weiterzuentwickeln, wurden auf der Konferenz des Deutschen Netzwerks Evidenzbasierte Medizin 2023 aktuelle Fragen zur Aufnahme von Planetary Health in Leitlinien diskutiert.

**Methoden:** In einem multidisziplinären Workshop bestimmten 25 an der Leitlinienentwicklung interessierte Personen wichtige Planetary-Health-Dimensionen, die zeitnah in Leitlinien aufgenommen werden könnten. In Gruppendiskussionen wurden die komplexen Herausforderungen bei der Integration von Planetary Health in Leitlinien erörtert und mögliche Lösungen diskutiert.

**Ergebnisse:** Die Teilnehmer empfahlen, zunächst die Dimensionen *Umweltauswirkungen, Prävention und*

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Co-Benefits sowie Vermeidung von Überversorgung in Leitlinien aufzunehmen, und lieferten entsprechende Begründungen. Die Überarbeitung von Leitlinien-Regelwerken und der Einbezug relevanter klimabezogener Endpunkte in klinische Studien (z. B. CO<sub>2</sub>-Äquivalente) wurden als wichtige Voraussetzungen genannt. Es wurden pragmatische Schritte zur Integration von Planetary Health, wie z. B. ein angepasstes Leitlinienlayout und eine Priorisierung der Empfehlungen, vorgeschlagen.

**Diskussion:** Eine Anpassung der Prozesse bei der Leitlinienentwicklung ist notwendig, um Planetary Health in Leitlinien einzubringen. Der Aufbau entsprechender Kompetenzen bei Leitlinienentwickler\*innen und Änderungen der Leitlinien-Regelwerke sind wichtige nächste Schritte. Eine breite Diskussion und die Zusammenarbeit zwischen den verschiedenen an der Leitlinienentwicklung beteiligten Organisationen ist daher unerlässlich, um die Aufnahme der Planetary-Health-Perspektive in Leitlinien voranzubringen.

**Schlussfolgerung:** Dieser Workshop unterstreicht das starke Interesse an der Integration von Planetary Health in Leitlinien mit dem Ziel, die klinische Medizin stärker an Planetary Health auszurichten.

## Introduction

Integration of planetary health issues, such as climate change and health, into clinical guidelines might be a critical step in transforming clinical medicine to reach a higher level of ecological sustainability. Furthermore, clinical guidelines could help to make health systems more climate-resilient [1]. An analysis of 49 international guidelines showed that planetary health issues are currently not sufficiently integrated into guidelines [2]. Yet, first steps are being taken, as organizations like the British National Institute of Health and Care Excellence (NICE) plan to report the ecological footprint of their guideline recommendations [3].

Common guideline development frameworks (evidence to decision frameworks) like the GRADE-approach or the WHO-integrate-framework do not yet explicitly consider planetary health dimensions [4,5] but some framework working groups have started to think about a way to do this. However, a clear strategy on how to integrate planetary health into guidelines based on an evidence-based methodology and with clinical value for health professionals and patients is missing so far.

To contribute to this process, the authors of this article hosted a workshop on planetary health in clinical guidelines at the conference “Health and Climate – EbM for Future” in Potsdam, Germany in March 2023, organized by the German Network for Evidence-Based Medicine (EbM).

The objectives of the interactive 90-minute workshop were reviewing the current status of integration and developing first steps towards implementation of planetary health in guidelines. This report presents the results of the workshop.

## Methods

Approximately 25 participants with interest in guideline development attended this session. Their professional backgrounds included epidemiology, clinical medicine, guideline development, health system administration and health insurances. The workshop was structured into introductory round and thematic discussion.

**Table 1**  
Ranking of planetary health dimensions for implementation in guidelines.

| Priority Ranking | Planetary Health Dimension (n = number of votes)     |
|------------------|--|
| 1                | Environmental impacts (n = 18)                       |
| 2–3              | Prevention & Cobenefits (n = 15)                     |
|                  | Choosing wisely (n = 15)                             |
| 4                | Adaptation (n = 11)                                  |
| 5                | Patient-centered care (n = 6)                        |
| 6                | Etiology & epidemiology (n = 5)                      |
| 7–8              | Low environmental impact interventions (n = 2)       |
|                  | Performance measures and quality indicators (n = 2)  |
| 9                | Measures to improve health system resilience (n = 0) |

First, participants completed a ranking task of important planetary health dimensions that should be implemented in clinical guidelines, based on a proposal by Herrmann et al. [2] (Table 1).

After that, four questions related to implementation and methodology were discussed in a world café methodology. The discourse on each question was overseen by a moderator who also documented the results. Randomly assigned small groups of 5–8 participants discussed a question for 20 minutes, then groups were mixed, and the process was repeated. Thus, each participant discussed two questions and groups were able to build upon the notes of the first round during the second round. Results were presented in a final plenary session.

## Results

### Ranking of planetary health dimensions for implementation in guidelines:

The dimension of *measures to improve health-system resilience* was added by request of a participant. Each participant was able to vote for three items that should be prioritized for inclusion in guidelines (results: Table 1).

### Why should the highest prioritized planetary health dimensions be implemented first?

Reporting of *environmental impacts* allows to compare diagnostics and treatment options. Illustrating the ecological footprint for standard procedures of disease specific treatments with tangible examples could help gauge the ecological effect of the recommendations and sensitize guideline authors and the audience. Unfortunately, evidence on the footprint of various medical interventions is widely missing. Prototypical is the comparison of CO<sub>2</sub>-emissions between different volatile anesthetics or types of inhalers, which are very similar in their clinical application, but differ tremendously in their CO<sub>2</sub>-emissions (cf. [6]). This differences can be comprehensively illustrated by the different distances cars can travel with equivalent CO<sub>2</sub>-emissions.

The integration of *prevention & co-benefits* can promote health and support climate change mitigation. *Prevention* aims to mitigate incidence and progression of disease and can therefore reduce the resource intensive use of health care. Co-benefits arise, when recommendations have benefits for climate and for health, especially regarding lifestyle interventions. Exemplarily, promoting active mobility by foot or plant based-diets can be integrated in the therapy section of guidelines (for details on co-benefits see Howard et al. [7]).

The dimension of *choosing wisely* has the potential to significantly reduce the health services carbon footprint [8]. This

approach is also relevant in health economics: Optimizing resource-consumption by reducing underuse, misuse and overuse can reduce costs and enable more efficient treatment models. The cost-benefit balance assesses not only individual health but also long-term societal perspectives. In consequence, advocacy for appropriate medical care is a form of climate change mitigation. This can involve the promotion of prevention, the reduction of unnecessary medical interventions and the consideration of environmental impacts in the choice of therapies.

All three dimensions appeared to be well suited for timely integration into guidelines to the working group. The dimensions of *prevention* and *choosing wisely* are already considered to some extent in existing guidelines, but emphasis on these dimensions varies depending on the guideline focus. Therefore, guideline-authors are in part already familiar with their concept. The Attendees expect the above-mentioned aspects to have the highest impact in attaining a more sustainable way of delivering medicine.

#### *How can guideline authors be sensitized for the integration of planetary health?*

Participants reflected on how to sensitize guideline authors effectively. They stated that guideline developing bodies should place the integration of planetary health on their agenda because sensitization needs to take place in the “natural environment” of guideline developers.

This was seen as critical as the main focus in guideline development has traditionally been to pursue highest standards in evidence evaluation and promoting adherence in the audience.

The important, also normative, role of guideline development frameworks and statutes of guideline programs was stressed. Methodological approaches such as GRADE (Grading of Recommendations, Assessment, Development and Evaluation [4]) or the AWMF-rule book (Association of the Scientific Medical Societies in Germany) were seen as central to build capacity, sensitize and educate guideline developers. The existing frameworks should now be compared and evaluated for planetary health integration. For instance, the WICID approach (WHO-INTEGRATE COVID-19 [9]) already considers environmental impacts and resource implications. Frameworks should include a mandatory discussion on the integration of planetary health dimensions while planning the guideline.

An “opt-out” mechanism for planetary health aspects in guidelines was proposed to foster acceptance and reduce workload in guideline projects. This way, guideline committees would have to consider planetary health dimensions and reflect on their integration but could also decide against it after thorough consideration.

Assumed obstacles to sensitization of guideline authors was their missing knowledge. Even if there was a surge in planetary health publications, one could not assume that all guideline authors are knowledgeable about planetary health. Conferences on guideline methodology or kick-off meetings for guideline projects were seen as good opportunities to introduce planetary health and best-practice examples. To sensitize and motivate guideline developers, workshop attendees felt the need to network and offer peer support to increase the pool of multipliers for planetary health.

#### *What are methodological challenges in implementing the highest prioritized planetary health dimensions and which solutions can be found?*

The lack of comprehensive climate-related evidence for many disease-specific interventions was identified as one main challenge. Also, insufficient expertise in finding, evaluating and presenting this data was pinpointed.

Attendees reckoned that the best available evidence is currently limited to observational studies. Furthermore, they believed that the focus on CO<sub>2</sub>-Emissions alone is insufficient. To understand the wider ecological effects, life-cycle assessments were proposed as one possible solution.

Consequently, footprint-reporting for pharmaceutical and health care supply industries should be stimulated by legislators. Funding regulations for clinical trials should also include other ecologically relevant (so-called “green”) outcomes in addition to CO<sub>2</sub>-equivalents. Retrieval and appraisal of climate-related evidence should be supervised by experts in the field of ecology and life-cycle assessment.

As another difficulty was seen acceptance of and adherence to recommendations on prevention since prevention is insufficiently financed within the German health system. It is unclear if prevention measures, reported in guidelines, should only be directed at individuals or if guidelines should include advice for prevention on primordial level too. Incorporating these public health recommendations, e.g. improving access to a plant based nutrition, represents a health-co-benefit on meso- or macro-level of engagement for planetary health (cf. [7]).

#### *How can planetary health dimensions be implemented in guidelines?*

Specific steps were suggested to implement a planetary health-perspective in guidelines:

First, dimensions like *etiology & epidemiology* could easily be integrated in the background text since no explicit methodology has to be applied. Climatic impacts on any specific disease could illustrate the link between the climate crisis and its effects on health.

Second, layout and writing of the recommendations could highlight *low environmental impact interventions* for better recognition. This includes explanations on healthy nutrition and physical activity. Clear step-by-step criteria could be introduced on when to use carbon-intensive or polluting diagnostics and therapies in comparison to more climate-friendly approaches (e.g. x-ray versus MRI). If an equally safe and effective intervention or pharmaceutical treatment has a lower ecological impact, the guideline layout should allow easy identification. In addition, patient information and decision aids could also include planetary health dimensions.

Third, an entire guideline could be developed exclusively addressing a specific planetary health topic as has been done with the German guideline for prescribing climate-friendly inhalers [6]. Another approach might be to routinely integrate a standard paragraph on planetary health in every guideline relating the guideline topic to the climate crisis.

It was emphasized that support tools like frameworks and corresponding checklists are needed to help guideline developers to effectively integrate planetary health dimensions. Existing methodologies that already incorporate some planetary health objectives should be concretized (cf. WICID [9]). These frameworks should give guidance on prioritization of planetary health dimensions and endpoints, grading of recommendations on climate-related factors and advocate for interdisciplinary guideline group composition.

At national level, guideline developing bodies could persistently advocate for the inclusion of planetary health in guidelines as the German AWMF plans to do. Internationally, a joint statement of experts could be drawn up to advocate for the inclusion of the planetary health-perspective in guidelines, similar to NICE. Collaboration between international experts to develop an appropriate methodology and framework could highlight the importance of integrating planetary health considerations in guidelines.

## Discussion

The goal of this workshop was to work with guideline developers to identify barriers to the implementation of a planetary health-perspective in guidelines and to gather ideas for refining the corresponding guideline methodology.

Implementing planetary health into guidelines will require adjustments to the steps of guideline development, as well as training in planetary health for guideline authors. It is critical to promote awareness of the importance and benefits of integrating planetary health into clinical guidelines using conferences, workshops and publications.

There is a need to build on existing methodologies and frameworks to effectively integrate planetary health into guidelines. The development of tools like a checklist and the promotion of international cooperation can facilitate this process.

Regardless of there having been a wide variety of professional backgrounds in the workshop, the small number of attendees might limit our findings as they likely do not adequately represent the full spectrum of guideline developers and health professionals. Nevertheless this early stage of expanding the guideline methodology, our multidisciplinary workshop might have increased the participants awareness for the planetary health agenda. Our work provides valuable insights into the current challenges and potentials of integrating planetary health into clinical guidelines.

## Conclusion

The concept of planetary health in guidelines is still in its infancy but the interest in this topic is growing. Integrating planetary health into guidelines can be an important element in achieving higher levels of environmental sustainability in clinical medicine. First possible steps towards implementation were highlighted in the workshop. Clearly, working in interdisciplinary teams across guideline topics would be helpful to coherently integrate the planetary health-perspective. The results of international guideline programs and methodological groups should be publicly discussed to create synergies and facilitate rapid adoption. Including planetary health in guidelines could also generally be an important next step in the development of guideline methodologies.

## Conflict of interest

All authors declare that there is no conflict of interest.

## CRediT author statement

Benedikt Lenzer: Conceptualization, Methodology, Formal analysis, Resources, Data Curation, Writing – Original Draft, Project administration planning and execution. Jeannine Schübel: Conceptualization, Methodology, Formal analysis, Resources, Data Curation, Writing – review & editing. Alina Herrmann: Conceptualization, Methodology, Formal analysis, Resources, Data Curation, Writing – review & Editing. Stefanie Bühn: Conceptualization, Methodology, Formal analysis, Resources, Data Curation, Writing – review & Editing. Cathleen Muche-Borowski: Conceptualization, Methodology, Formal analysis, Resources, Data Curation, Writing – review & Editing.

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