

Annex 1: Knowledge gaps and questions

The ecological crises form a threat to human health and wellbeing and exacerbate existing (health) inequalities. Just and equitable transitions that move away from fossil fuel dependency and limit use of primary resources can foster health on a global scale and enhance the delivery of high-quality health-supportive services.

The healthcare sector contributes to 7% of emissions in the Netherlands and is responsible for 13% of the nation's material extraction footprint. For example, surgical instruments or laboratory consumables are often incinerated after a single use. As such, this sector is a major contributor to climate change, biodiversity loss, and water, air and land pollution.

More than 200 grass root initiatives in sustainable health are now members of the Dutch Green Healthcare Alliance. These initiatives, together with pioneers within the green health movement and the Dutch government, created the [Green Deal for Sustainable Healthcare 3.0](#) for the Ministry of Health. This agreement calls for more environmentally sustainable healthcare services and approaches, and requests that the sector – and hospitals in particular – reduce their environmental impact and become maximal circular by 2050.

Transdisciplinary research, which involves non-academic partners and various academic disciplines, is needed to help develop and implement systemic, circular, safe, effective and scalable strategies and solutions that minimize the ecological footprint and negative effects of the sector on global and planetary health.

Relevant knowledge gaps and questions include:

- ***Circularity in procurement and contracting in hospitals***
 - What are the main bottlenecks and opportunities regarding the use of innovative techniques in and forms of procurement, such as true pricing, pre-commercial procurement, innovation-oriented procurement and partnerships?
 - What are the main bottlenecks and success factors of circular collaboration with suppliers and which contract relationships and forms are most suitable?
 - How can better transparency of the production chain of products be incentivised?
 - Can procurement benefit from the CSRD reporting standards for producers (also in relation to our own accounting needs) and if yes, how could these standards be best used/implemented in procurement projects?

- With regards to procurement: what service, product and producer related data can/ should be collected (for instance during procurement projects) by UMCU to monitor the progress towards the circularity goals?
- ***Towards circular laboratories***
 - What is the environmental impact of labs and what are the most important environmental hotspots? How can we prioritise circular interventions?
 - What are challenges and opportunities for developing circular solutions for labs?
 - How does the environmental impact of materials used in the clinic, in clinical labs or in research labs relate to each other?
- ***Circularity from the planetary health perspective***
 - What can we learn from circular material use in hospitals in middle- and low-income countries?
 - How can we cultivate values and morality principles related to material usage to induce behaviour higher up the R-ladder of circularity?
 - Can we assess social injustice aspects that are linked to the production chain of medical products to increase awareness and change of behaviour in the hospital?
 - What health (equity) co-benefits do circular initiatives bring?
 - What are fair knowledge practice (epistemic justice) considerations in circularity activities?