



Green bioethics

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Earlier this year, the World Health Organisation (WHO) published a brief report entitled *Summary on environment, climate change and health for WHO representatives and other country staff* with an overview of possible measures to reduce environmental risks. It states that at the global level, environmental pollution and other environmental risks cause 24% of all deaths, which are largely preventable (WHO 2023). The overview refers to actions and policies to address air pollution, water and sanitation, solid waste, chemicals, radiation, and climate change. This publication fits into a long WHO series of statements and recommendations focused on climate change as the single biggest threat to human health. Not only are the effects of changing climate experienced in the everyday life of people who are confronted with extreme weather events such as heatwaves and floodings, but on a more fundamental level climate change is deteriorating the social and environmental determinants of planetary and individual health, jeopardizing the availability of clean air, safe drinking water, sufficient food and secure shelter. Some even fear that climate change will undermine decades of progress in public health (Watts et al. 2019).

What has remained relatively underexposed for a long time is how healthcare itself is contributing to environmental degradation and climate change. The Covid-19 pandemic has highlighted the problem of medical waste. While waste produced at healthcare facilities was already a problem before the pandemic, it increased by three to four times during the emergency resulting from vaccinations, testing and patient care. Recommended public health measures

also resulted in 6 million extra tons of waste. In 2020, for example, 4.5 trillion disposable face masks were discarded by the public (WHO 2022). Recently, there is more attention for the negative impact of healthcare services on global environmental change. Their operations and supply chains contribute to greenhouse gas emissions, air pollution, and water scarcity. It is pointed out that climate change is not the only environmental threat; reduction of carbon emissions is therefore only one, though important policy to reduce environmental degradation. The environmental impact of global healthcare is estimated to account for 1–5% of the total environmental degradation. This impact has steadily increased between 2000 and 2015 due to growing investment in healthcare around the world (Lenzen et al. 2020). In the Netherlands, it is estimated that the healthcare sector contributes 7.3% to the national climate change footprint (Steenmeijer et al. 2022).

Studies of the environmental footprint of healthcare produce a paradoxical outcome. Healthcare is needed to cope with the harmful and disease-producing effects of environmental degradation and climate change. Yet, increased healthcare efforts care themselves contribute to aggravate environmental and climate problems. Multilevel approaches have been implemented, requiring action from international bodies, governments, healthcare authorities, and professional organizations.

It is less clear what is exactly requested at the level of doctor-patient interaction. This level is the focus of the contribution of Cristina Richie to this issue (Richie 2023). She argues that since the duty of health professionals is to do no harm, it is ethically required that they connect delivery of healthcare to efforts to reduce carbon emissions. This should imply the ‘greening’ of informed consent, i.e. sharing of relevant environmental information with patients and offering options for lower-carbon healthcare. Richie previously published *Principles of green bioethics* in which she provided four principles for sustainable healthcare: distributive justice, resource conservation, simplicity, and ethical economics (Richie 2019). In her current article in this journal, Richie argues that treatments should be as green

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as possible. In order to reach this goal, health professionals should discuss with patients medical treatment options including their environmental risks and potential contributions to climate change. This is a reasonable proposal since pharmaceutical and chemical products rather than buildings and transport seem to be the biggest contributors to the environmental footprint of the healthcare sector (Steenmeijer et al. 2022). Making patients aware of the effects of these products on the climate therefore will contribute to more sustainable healthcare.

However, the implementation of this proposal within the context of interactions between health professionals and patients will face practical and ethical challenges. First, it is questionable whether health professionals will actually raise this issue in daily care settings. The majority of professionals is well aware that climate change is happening and is caused by humans. Nonetheless, they feel constrained when discussing and advocating climate change as a human health issue (Kotcher et al. 2021). They prefer other options such as continuing education, communication training, and patient education. Given this background it is doubtful whether health professionals will decarbonize their own practices of patient care. The second challenge relates to professional ethics which declares that the interest of the individual patient has priority over other considerations. The Declaration of Geneva, last revised in 2006 states “The health of my patient will be my first consideration” (WMA 2006). The Universal Declaration on Bioethics and Human Rights, adopted by UNESCO in 2005 points out in Article 3: “The interests and welfare of the individual should have priority over the sole interest of science or society” (UNESCO 2005). Efforts to redefine the roles and responsibilities of physicians in regard to climate change and environmental degradation, such as the Planetary Health Pledge for Health Professionals in the Anthropocene have been severely criticized because they compromise the primary responsibility of the physician who is acting in the best interest of the individual patient (Wiesing 2022).

Given the challenges of green informed consent, other avenues to reduce environmental risks in healthcare are explored as well. For example, health professionals can lobby policymakers and leaders to engage in policy action. They can also inform and educate relevant stakeholders and

the public, for example by producing materials for patients showing the carbon footprint of medical procedures. Finally, as Richie (2023) argues herself, environmental issues and the connection between climate change and health should be inevitable components of medical education programs.

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