

Nursing for Planetary Health and Well-being

Around the globe, people are recognising the profound impact of our shared environmental crises on human health. The destabilization of Earth's key life support systems, such as air, water, forests and biodiversity, is threatening the health and well-being of humans and all life now and in the future.¹ Human health and well-being is inextricably linked to land and climate, the quality of the air we breathe, the water we drink, the food we eat, and biodiversity. In response, the *Rockefeller Foundation-Lancet Commission on planetary health* introduced planetary health, a solutions-oriented, transdisciplinary field and social movement. Planetary health calls attention to the extensive degradation of Earth's natural systems for human advancement, and focuses on analyzing and addressing the impacts that this degradation has on human health and all life on Earth.^{2,3} The Commission provides evidence that planetary health is driven by not only climate change, but by a number of other ecological drivers, including global pollution of air, land and water, resource scarcity, biodiversity loss and deforestation. As an emerging concept, planetary health is gaining increasing recognition as key to addressing the health harms posed by global environmental change, and is thus critical to integrate into health, education and social systems. It is important for nurses and all health professionals to learn about and use a planetary health lens in their research, education, advocacy, policy, practice and leadership. The nursing profession has a shared responsibility to address the impacts that human disruptions to Earth's systems have on health and well-being, and join others in redesigning human systems to promote a future where all life can flourish.⁴

Earth has its own natural systems that keep the environment and climate in balance. Since 2009, the Stockholm Resiliency Center at Stockholm University has measured a set of Planetary Boundaries, which are the safe limits for human pressure on nine critical processes that together maintain a stable and resilient Earth.⁵ The Planetary Boundaries are interrelated, meaning that if one boundary is crossed the others will be affected. As such, a global focus on climate change alone is insufficient to maintain a stable and resilient Earth. Human caused environmental degradation is exhausting our planetary boundaries and in 2023, six of the nine boundaries had been exceeded.^{5,6} Exceeding these irreversible

boundaries threatens the health of humans and all life, now and for future generations.

The World Health Organization (WHO) estimates that more than 13 million deaths around the world each year are due to avoidable environmental causes.⁵ The underlying drivers that contribute to an array of environmental changes are connected directly to health harms in humans, including death and injury from extreme weather events, nutritional diseases, infectious diseases, declining mental health, exacerbation of non-communicable diseases and threats to reproductive health (Figure 1).⁷ The United Nations reports that between 2015 and 2019, 1.3 billion people were impacted by land degradation, such as deforestation and pollution.⁸ Human-caused land degradation is leading to biodiversity loss and mass extinction of plant and animal species. The World Wildlife Fund reports a 73% decline in wildlife population sizes since 1970, leading to the statement that we are now in a 6th mass extinction, with the current rate of extinction being 1000 times the normal baseline level of extinction.^{9,10} Biodiversity keeps planetary ecosystems in balance and is essential for human health because it provides food, water and medicine, and supports livelihoods.¹¹ In addition, global pollution of land, water and air is causing significant human health and ecosystem degradation, from the impacts of indestructible chemicals, open-air burning of waste, water contamination, heavy metals and plastics, with an additional 9 million premature deaths due to pollution every year.¹² Most recently, the United Nations recognized the ubiquitous nature of plastic pollution as a growing threat to human health. As plastics breakdown into microplastics and nanoplastics they can enter the food chain, be inhaled from the air and ingested in water. Microplastics have been detected in human organs and the placentas of newborn babies, and can harm health: for example, they may alter human genetics and brain development and increase the risk of cardiovascular events.^{13,14}

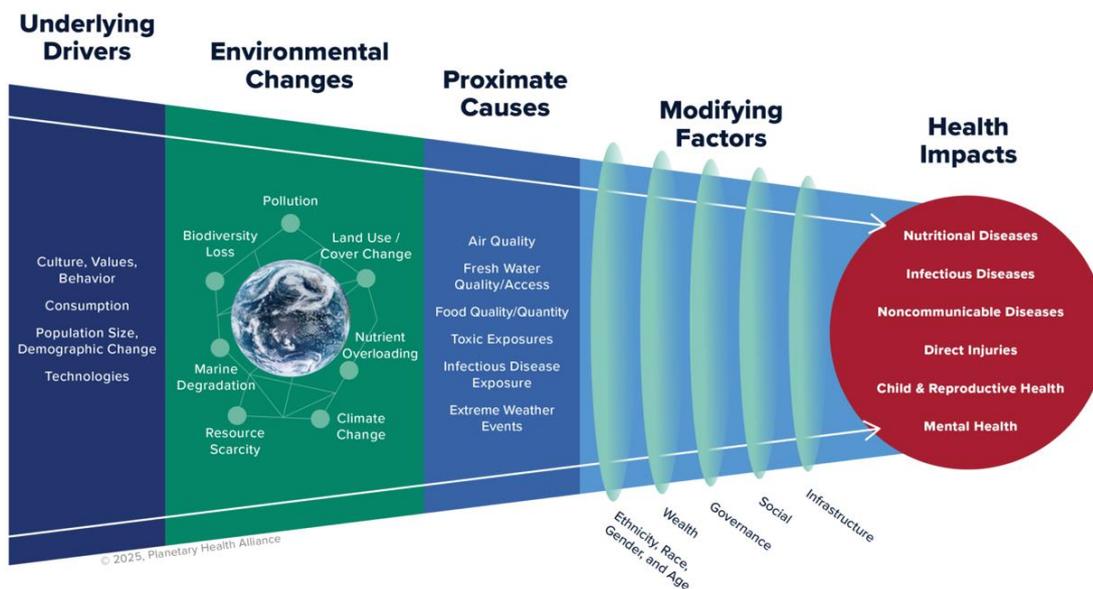


Figure 1: Understanding planetary health pathways.⁷
 Image used with permission of the Planetary Health Alliance

Planetary health also includes One Health, an approach that aims to balance and optimize the health of humans, animals and the environment. Supported by a quadripartite collaboration of international agencies, One Health provides practical approaches for managing health threats, including risks from zoonotic epidemics and pandemics, antimicrobial resistance and food safety, which are all influenced by environmental change.¹⁵

The Health Sector and Planetary Health

Human behaviours are the root cause of harmful disruptions to Earth’s natural systems, therefore, changes in human behavior are necessary to address planetary health. The health sector is at the intersection of human well-being and environmental sustainability and is an important and powerful change agent. Health professionals can also lead by example, amplify the science and advocate for policies that protect the planet and human health.

The health sector has had an increasing presence in climate action and there are a number of important initiatives at all levels, including in global health.

On World Health Day 2022, WHO focused global attention on the urgent actions needed to keep humans and the planet healthy, launching the “Our planet, our health” campaign, and a set of recommended actions to protect our planet and our health.^{16,17} Key actions aimed at the health sector include to:

- Support efforts to reduce health care waste.
- Provide sustainably grown local food and ensure healthy food choices by reducing the presence of carbonated drinks and highly processed and packaged food in health facilities.
- Decarbonize health facilities.
- Identify opportunities to save energy.
- Ensure safe clean water at health facilities.
- Support purchase of environmentally friendly products that are easily recyclable or reusable.
- Advocate for health to be at the centre of climate change policies.

As one of the leaders of the planetary health field, the Planetary Health Alliance (PHA) is another catalyst of the global movement to create a liveable future for humanity and the rest of life on Earth. It has brought together more than 495 universities, non-governmental organizations, research institutes and government entities that are committed to understanding and addressing global environmental change and its health impacts.¹⁸ In 2021, PHA released the *São Paulo Declaration on Planetary Health*, a transdisciplinary proclamation that promotes a shared global vision for a viable future.¹⁹ The Declaration calls for the “Great Transition” – a fundamental shift in how we live on Earth. This shift will “...require rapid and deep structural changes across most dimensions of human activity... [and] rethinking our values and relationship with Nature and to each other.”¹⁹ The Declaration offers a global blueprint and provides specific guidance on necessary changes in the health sector, including to:¹⁹

- Reorient all aspects of health systems toward planetary health, including procurement, energy sources, health care efficiency and waste reduction.
- Commit to achieving nature-positive, carbon neutral health care systems before 2040, while strengthening health care systems’ resilience to global environmental changes. This includes as much reuse, repair and recycling as is safely possible, and committing to producing less waste, use of renewable energies as much as possible, and the procurement of products that are sustainable and good for the planet.
- Place disease prevention, health promotion and health equity at the heart of the transition.
- Incorporate health perspectives and traditions beyond traditional Western methods, including traditional knowledges led by Indigenous Peoples, as well as other integrative health practices.
- Consider social and ecological determinants of health for both individuals and communities, including public and active transportation; access to health care facilities; green spaces to provide social, recreational, and

mental health benefits; air, soil, and water quality; and access to affordable nutritious diets, particularly for lower income communities.

- Advocate for public access to culturally appropriate health services as a human right.

It is important that the health sector itself adopts sustainable practices and strategies, on both the supply and the demand side. For example, the production and transportation of pharmaceuticals and other health care products contributes significantly to health care's greenhouse gas emissions, with total emissions representing over 4% of net global emissions.²⁰ If governments invest in and strengthen public health infrastructures and prioritize primary prevention and health promotion, this footprint would be largely reduced.

Health professionals and health systems also need to adapt to respond effectively to the threats to health and well-being posed by environmental degradation. For example, health systems must be adapted to ensure that health workers can get to work even when communications and transportation systems are disrupted and need to plan for supply chain disruptions that can impact critical care needs. Nurses play a vital role in disaster risk reduction, response and recovery including adequate planning to ensure that health care services can respond to disasters and are equitable and just.²¹

Populations that contribute the least to the degradation of the environment often feel the greatest impact of climate change, pollution and disrupted natural systems. Nurses must prioritize care for those already experiencing negative impacts and should advocate for comprehensive adaptation plans that provide support during extreme weather and promote resilience before and after events.²¹

Planetary Health Knowledge for Nurses

Planetary health knowledge is an important aspect of the nurse's role to ensure individual and population health, and access to safe and high-quality care. It is important for every nurse to be educated to minimize the harm to the health of individuals and communities from threats caused by climate change, loss of biodiversity, pollution, and destruction of wilderness and natural ecosystems. Nurses should be educated and resourced to lead movements and to create and sustain systems change.

Understanding planetary health threats and proposing effective planetary health solutions will require a global transdisciplinary approach. The *Planetary Health*

Education Framework (Figure 2) provides a shared language through its transdisciplinary education guide.²² The framework has five foundational domains of planetary health knowledge, values and practice:

1. Interconnection within nature
2. The Anthropocene and health
3. Equity and social justice
4. Movement building and systems change
5. Systems thinking and complexity

Fluency in the five planetary health domains, providing a shared curriculum and language, will support nurses to co-create the Great Transition. These interconnected domains equip students and practising professionals with a planetary health lens to promote transdisciplinary collaboration on planetary health solutions. The domains are situated within local socio-economic, cultural and environmental contexts, as well as local learning needs and priorities. In addition, they are also impacted by anthropogenic changes at a planetary scale, and global agendas and priorities, such as the United Nations Sustainable Development Goals.

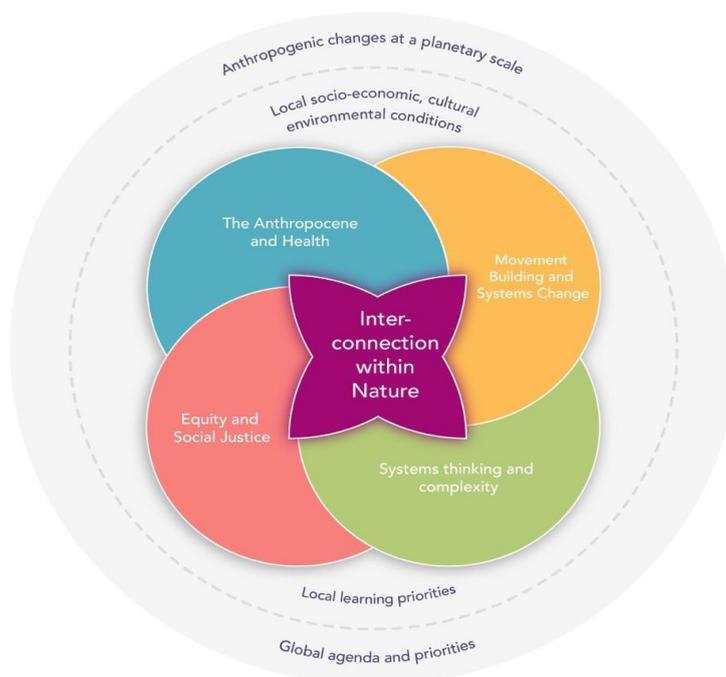


Figure 2: Planetary Health Education Framework²²
Image used with permission of the Planetary Health Alliance

The domains are not sequential or hierarchical. Like the cross-section of a rope, they are intertwined into one whole, which cannot be separated.

Interconnection within nature is the centre of the framework, recognizing that human health and well-being are intertwined with the health of all our ecosystems, both social and environmental. Humans are not separate from nature but rather are nature, and any actions that threaten the health of our environments and Earth's natural systems, adversely impact the health of humans and all life on the planet. Indigenous knowledge systems have long understood this interconnection; therefore, indigenous ethics and values of interrelatedness, environmental stewardship, and responsibility for current and future generations are centred in the planetary health movement and must be centred in nursing practice.

Nurses should understand how the human caused disruptions to Earth's natural systems (the ecological drivers) impact the health of individuals and communities. Nurses understand the concepts of justice, equity and fairness, and a planetary health lens calls for the extension of these ethical commitments to all species and future generations.

Even though planetary health is a transdisciplinary field, it also recognizes the unique contributions that are required by each discipline to advance the Great Transition, and nurses have unique knowledge and skills to contribute. Instead of calling for a separate nursing specialty, planetary health can be the foundation for nursing research, education, advocacy and practice. Nursing for planetary health uses the five domains of the *Planetary Health Education Framework* to inspire nurses and other health professionals to step into the full power of what it means to be a nurse for planetary health in these times.²²

Opportunities for Nursing and Nurses

The urgency of this moment calls all nurses in all nations and all areas of practice to recognize the impacts that disrupting Earth's natural systems have on the health of individuals and communities today. Nurses are the trusted voices that can advance planetary health in health care organizations, communities, and in governing bodies locally and internationally. Nurses must prepare people and communities to reduce environmental impacts and exposures, protect health in the context of disasters, and teach people adaptation strategies to improve health, well-being and resilience.⁴

The International Council of Nurses (ICN) has for many years recognized the connection between the health of the environment and human health.⁴ Nursing values and ethics align nursing practice with the protection of the environment. The *ICN Code of Ethics for Nurses* reinforces this connection. “Nurses collaborate and practice to preserve, sustain and protect the natural environment, and are aware of the health consequences of environmental degradation, e.g. climate change. They advocate for initiatives that reduce environmentally harmful practices to promote health and well-being.”²³ Nursing ethics demand that nurses protect the health and safety of individuals and communities threatened by climate change, biodiversity loss, land degradation, pollution and other threats to the Earth’s natural systems.

Nurses should work in full partnership with experts from other fields and the communities they serve, including learning from indigenous frames for social systems: living well together, being kindhearted and caring, and communicating honestly.²⁴ Nurses are important leaders and supporters for decarbonization efforts in health care organizations. Nursing leadership must collaborate with global organizations to advance planetary health knowledge and practice for nursing and engage in multi-sectoral initiatives to address the triple threat of climate change, biodiversity loss and pollution of air, soil and water.⁴

Nurses are encouraged to develop deep practices in meaningfully engaging the self and others with the environment to advance ecological respect, healing, environmental and planetary health, environmental stewardship and justice. In their daily practice, nurses can seek opportunities to teach patients, communities, and future nurses about the interconnections within nursing and planetary health and narrate how decisions we make today can negatively or positively impact future generations.

Nurses have a vital role in advancing planetary health through education, advocacy, leadership and practice. As trusted professionals and the largest health workforce, they are well positioned to drive change across health systems and communities. By adopting a planetary health lens, embracing transdisciplinary collaboration, and centring equity and indigenous knowledge, nurses can help shape a healthier, more just and sustainable future for all life on Earth. Restoration of planetary health must be an essential value and practice commitment for all health professionals, and nurses are uniquely positioned to be leaders in this transdisciplinary work.

Published May 2025

Authors

Teddie Potter, Director of the Center for Planetary Health and Environmental Justice at the School of Nursing at the University of Minnesota

Erica Burton, Senior Policy Advisor – Nursing and Health Policy, International Council of Nurses

Barbara Astle, Director MSN Program and Professor, School of Nursing, Trinity Western University

Heidi Honegger Rogers, Associate Professor, University of New Mexico College of Nursing

References

- 1 Hancock T, Spady D, Soskolne CL. *Global change and public health: Addressing the ecological determinants of health*. Canadian Public Health Association Discussion Document. Ottawa: Canadian Public Health Association; 2015. Available from: <https://tinyurl.com/4pr9p2s2>
- 2 Whitmee S, Haines A, Beyrer C, Boltz F, Capon A, Ferreira de Souza Dias B, et al. Safeguarding human health in the Anthropocene epoch: report of the Rockefeller Foundation–Lancet Commission on planetary health. *Lancet*. 2015;386(10007):1973–2028.
- 3 Planetary Health Alliance. What is planetary health? [Internet]. Cambridge (MA): Planetary Health Alliance; [date unknown; cited 2025 May 15]. Available from: <https://www.planetaryhealthalliance.org/planetary-health>
- 4 International Council of Nurses. *Nurses, climate change and health* [Internet]. Geneva: ICN; 2024 [cited 2025 May 14]. Available from: https://www.icn.ch/sites/default/files/2024-11/Nurses%20climate%20change%20health%20PS_EN.pdf
- 5 Stockholm Resilience Centre. *Planetary boundaries* [Internet]. Stockholm: Stockholm Resilience Centre; 2023 [cited 2025 May 15]. Available from: <https://www.stockholmresilience.org/research/planetary-boundaries.html>
- 6 Azote for Stockholm Resilience Centre, Stockholm University. *Planetary boundaries 2023* [Internet]. Based on Richardson et al. 2023. Stockholm: Stockholm Resilience Centre; 2023 [cited 2025 May 15]. Available from: <https://www.stockholmresilience.org/research/planetary-boundaries.html>
- 7 Planetary Health Alliance. *Planetary health schematic* [Internet]. Cambridge (MA): Planetary Health Alliance; 2025 [cited 2025 May 15]. Available from: <https://planetaryhealthalliance.org/planetary-health-schematic/>
- 8 United Nations. *15: Life on land* [Internet]. New York: United Nations; [date unknown; cited 2025 May 15]. Available from: <https://www.un.org/sustainabledevelopment/biodiversity/#:~:text=However%2C%20the%20world%20is%20facing,lives%20of%201.3%20billion%20people>
- 9 World Wildlife Fund. *Living Planet Report 2024 – A system in Peril* [Internet]. Gland: WWF; 2024 [cited 2025 May 15]. Available from: <https://wwflpr.awsassets.panda.org/downloads/2024-living-planet-report-a-system-in-peril.pdf>
- 10 World Wildlife Fund. *What is the 6th mass extinction and what can we do about it?* [Internet]. Gland: WWF; 2023 [cited 2025 May 15]. Available from: <https://www.worldwildlife.org/stories/what-is-the-sixth-mass-extinction-and-what-can-we-do-about-it>
- 11 United Nations. *Biodiversity – our strongest natural defense against climate change* [Internet]. New York: United Nations; [date unknown; cited 2025 May 15]. Available from: <https://www.un.org/en/climatechange/science/climate-issues/biodiversity>
- 12 Fuller R, Landrigan P, Balakrishnan K, Bathan G, Bose–O’Reilly S, Brauer M, et al. Pollution and health: a progress update. *Lancet Planet Health*. 2022;6: e535–47.
- 13 United Nations Environment Programme. *Plastic pollution* [Internet]. Nairobi: UNEP; [date unknown; cited 2025 May 15]. Available from: <https://www.unep.org/plastic-pollution>

14 Marfella R, Prattichizzo F, Sardu C, Fulgenzi G, Graciotti L, Spadoni T, et al. Microplastics and nanoplastics in atheromas and cardiovascular events. *N Engl J Med*. 2024;390(10):900–10. doi:10.1056/NEJMoa2309822

15 United Nations Environment Programme. *UNEP One Health* [Internet]. Nairobi: UNEP; [date unknown; cited 2025 May 15]. Available from: <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/unep-one-health>

16 World Health Organization. *World Health Day 2022* [Internet]. Geneva: WHO; 2022 [cited 2025 May 15]. Available from: <https://www.who.int/campaigns/world-health-day/2022>

17 World Health Organization. *Recommended actions to protect our planet, our health* [Internet]. Geneva: WHO; 2022 [cited 2025 May 15]. Available from: <https://www.who.int/campaigns/world-health-day/2022/recommended-actions-to-protect-our-planet-our-health>

18 Planetary Health Alliance. *Our health depends on our environment* [Internet]. Cambridge (MA): Planetary Health Alliance; [date unknown; cited 2025 May 15]. Available from: <https://planetaryhealthalliance.org/>

19 Planetary Health Alliance. *Sao Paulo Declaration on Planetary Health* [Internet]. Cambridge (MA): Planetary Health Alliance; [date unknown; cited 2025 May 15]. Available from: <https://planetaryhealthalliance.org/sao-paulo-declaration>

20 Karliner J, Slotterback S, Boyd R, Ashby B, Steele K, Wang J. Health care's climate footprint: the health sector contribution and opportunities for action. *Eur J Public Health* [Internet]. 2020 Sep 30 [cited 2024 Oct 13];30(Supplement_5). Available from: <https://doi.org/10.1093/eurpub/ckaa165.843>

21 International Council of Nurses. *Nurses and disaster risk reduction, response and recovery: Position statement* [Internet]. Geneva: ICN; 2023 Apr [cited 2025 May 15]. Available from: https://www.icn.ch/sites/default/files/2023-04/PS_E_Nurses_and_disaster_risk_reduction_response_and_recovery.pdf

22 Faerron Guzman C, Potter T, editors. *Planetary health education framework* [Internet]. Cambridge (MA): Planetary Health Alliance; 2021 [cited 2025 May 15]. Available from: <https://www.planetaryhealthalliance.org/education-framework>

23 International Council of Nurses. *The ICN Code of Ethics for Nurses*. Geneva: International Council of Nurses; 2021. p. 18. Available from: https://www.icn.ch/sites/default/files/2023-06/ICN_Code-of-Ethics_EN_Web.pdf

24 Evans-Agnew R, LeClair J, Sheppard D. Just relations and responsibility for planetary health: the global nurse agenda for climate justice. *Nurs Inquiry*. 2023;e12563. doi:10.1111/nin.12563.