

A framework to guide planetary health education



Lancet Planet Health 2021
 Published Online
 April 21, 2021
[https://doi.org/10.1016/S2542-5196\(21\)00110-8](https://doi.org/10.1016/S2542-5196(21)00110-8)

People around the world are increasingly facing the pressing challenges of today's interconnected environmental, social, and health crises. The COVID-19 pandemic has been an important wake-up call reminding us that we need a healthy planet to ensure the health of all people.¹ The emerging field of planetary health is a framework for understanding these interconnections and identifying solutions to the complex challenges confronting our civilization. Building on the unique role and responsibility of education institutions in shaping our futures, embedding planetary health education in curricula is an essential step to achieving the transformative change needed. Planetary health education across all levels and disciplines will equip and enable learners to drive transdisciplinary and mutually reinforcing actions to protect and restore planetary health and achieve the Sustainable Development Goals.²

However, a cohesive framework to guide institutions, educators, and learners does not exist. To address this gap, a taskforce of thought leaders in planetary health and education was convened by the Planetary Health Alliance to create the Planetary Health Education Framework (forthcoming). The taskforce's work took place between December, 2019, and February, 2021.

The taskforce sought to build on the 12 crosscutting principles for planetary health education to create a framework that functions as a common foundational language across disciplines and sectors, as well as geographies, and serves as the cornerstone for diverse education strategies.³ The framework intends to move beyond a prescriptive list of competencies towards recognising the diverse inquiries (ie, the why [affective], the what [representation], the how [strategic]) that shape planetary health education. The framework is an organised yet dynamic interpretation of the breadth of planetary health education. It promotes praxis, participatory teaching methods, and unique learning pathways that respond to environmental and social context, local priorities, technology, and resources available in each learning setting.

The framework facilitates the creation of a diverse spectrum of educational programmes and learning resources in planetary health. We targeted higher education institutions for their unique positioning within societies worldwide, as respected sources of

thought leadership, and as crucial stakeholders in development efforts. The framework is relevant for learners of all levels in higher education.

The Planetary Health Education Framework considers five foundational domains that we believe comprise the essence of planetary health knowledge, values, and practice (figure).

First, interconnection within nature. Fostering compassion for planet Earth through the recognition of the personal, cognitive, social, and emotional aspects of the education process is the central element of the framework. Interconnection within nature is an approach in which the cognitive (the sense of connection), the affective (the caring component), and the behavioural (the commitment to act) are integrated when designing transformative educational strategies.⁴ As part of this domain, combining ways of knowing, such as from Indigenous and western education and practice, will better enable the emergence of co-benefits for individuals, communities, and our planet.⁵ This domain recognises diverse knowledge and spiritual traditions, especially those of Indigenous peoples that teach of the deep interconnectedness within nature.

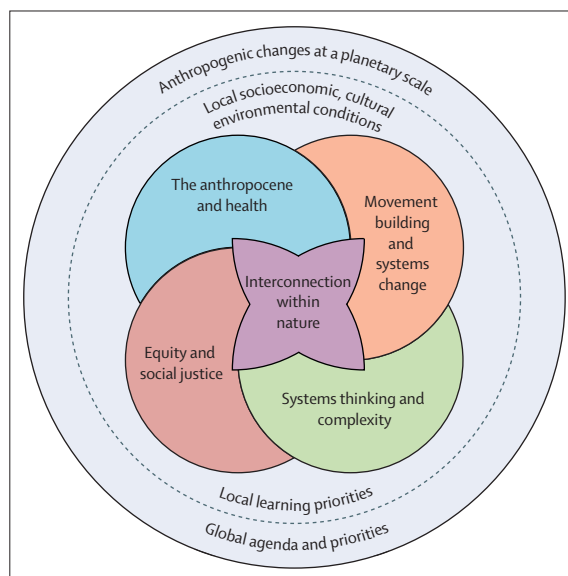


Figure: The planetary health education framework
 At the core of the framework are the five planetary health education domains represented in an intertwined figure, similar to the threads of a rope. Although the model separates each domain, the reality of planetary health demands us to understand the interdependent and interconnected nature of each domain. The division of the domains is artificial and only for didactic purposes.

Second, the anthropocene and health. The anthropocene is characterised by massive disruptions in earth system processes that have resulted from the ballooning of humanity's ecological footprint.⁶ This domain focuses on the understanding of how specific anthropogenic impacts on Earth's natural systems are connected to health outcomes. Understanding the links between the anthropocene and health requires a social and ecological approach to health promotion and disease prevention and control, ranging from individual to population-level determinants of human, animal, and ecosystem health. This domain also focuses on understanding the underlying and mediating factors that enhance or lessen health outcomes (eg, culture, value systems, governance, and technology), which relate to learning in the fourth domain, equity and justice.

Third, systems thinking and complexity. The field of planetary health draws upon approaches to systems thinking that have long been a focus in the field of ecology and describes how various elements interact and coalesce as part of complex systems.⁷ Within planetary health, and for the purposes of the education process, it is essential to characterise the linkages between environmental changes and human health at different geospatial and temporal scales. Doing so requires systems-based understandings that incorporate characteristics of complex adaptive systems (eg, non-linear or circular causal relationships, tipping or leverage points, emerging characteristics, and self-organisation). Within this domain, learners work towards self-awareness to acknowledge their own biases and epistemological groundings.

Fourth, equity and justice. Equity and justice in planetary health are founded on the rights of humans and the rights of nature, giving all human populations and ecosystems, present and future, the opportunity to attain their full vitality. Realising equity and justice requires eliminating systemic disparities so that no population carries disproportionate burdens of environmental and health impacts while others are able to thrive.⁸ Education processes must acknowledge the structural inequities and how historical and political injustices, including settler-colonialism, white supremacy, racism, patriarchy, and capitalism or neoliberalism, have contributed to the disenfranchisement of populations and a degraded environment. Future planetary health practitioners of the field must be able to rebuild the

institutions (eg, laws, health care, and education) that promote and reproduce inequities and shape planetary living conditions.

Fifth, movement building and systems change. Effective movement building is needed to solve the urgent planetary health crisis. Contrary to popular belief, movements do not simply emerge in response to a given moment. Action requires inclusive relationships, thoughtful strategy, effective communication, and transformational partnerships.⁹ This domain addresses these elements so learners and future professionals can build effective movements to support systems change and the great transition to a just future. Mentorship, solidarity, and the development of concrete skill sets help to reduce apathy, increase engagement, and create much-needed momentum for change.

Institutions, educators, and learners that incorporate this framework will need to shift away from a business as usual, siloed approach to education. For institutions to adapt planetary health as a guiding framework for an institution-wide approach, contextualisation, transdisciplinarity (including epistemological diversity), solution-oriented, action-based, and transformative approaches to education will need to be intentionally designed through strategic, logistical, and resource lenses. This transformation of education will foster local and global communities in working towards wellbeing, justice, and a thriving environment for all.

CAFG declares consulting fees from the Planetary Health Alliance. CH declares consulting fees from the *Lancet* Countdown on Health and Climate Change and from CODA Change and board positions or steering committee for Global Climate and Health Alliance, the WHO-Civil Society Working Group on Climate Change and Health, the Planetary Health Alliance, the Canadian Association of Physicians for the Environment, and the Canadian Medical Association. EB declares being the chair of the WONCA Working Party on the Environment and was a grant recipient from WONCA Air Health Train-the-Trainer. JP declares being recipient of the Chanchlani Award for Global Health Research. MZ declares consulting work with the Organization for Noetic Ecology NPO and Wildlands Studies; and pro-bono advisor or associate to Sea Change Trust (South Africa), Masiyembo Association (South Africa), The Connective (Australia), and Earthfire Institute (USA). NE declares a previous role as a data analysis consultant at HowGood starting March 17, 2021. Brunel University London has supported provision on OM's time in-kind for this project and preparation of this manuscript. TP declares budget for travel to Planetary Health events, but funds were not used during the writing of this paper. All other authors declare no competing interests.

Copyright © 2021 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

*Carlos A Faerron Guzmán, A Alonso Aguirre, Barbara Astle, Enrique Barros, Brett Bayles, Moses Chimbari, Naglaa El-Abadi, Jessica Evert, Finola Hackett, Courtney Howard, Jonathan Jennings, Amy Krzyzek, Jessica LeClair, Filip Maric, Olwenn Martin, Odipo Osano, Jonathan Patz, Teddie Potter, Nicole Redvers,

Noortje Trienekens, Sarah Walpole, Lynda Wilson,
Chenchen Xu, Matthew Zylstra
cfaerron@cisgcr.org

Planetary Health Alliance, Boston, MA 02115, USA (CAFG); Environmental Science and Policy, George Mason University Fairfax, VA, USA (AAA); Nursing, Trinity Western University, Langley, BC, Canada (BA); Atenção Primária à Saúde, Universidade de Caxias do Sul, World Organization of Family Doctors, Caxias do Sul, Brazil (EB); Global Public Health and School of Health and Natural Sciences, Dominican University of California, San Rafael, CA, USA (BB); School of Nursing and Public Health, University of KwaZulu-Natal, City of Johannesburg, Gauteng, South Africa (MC); Nutrition Epidemiology and Data Science, Tufts University, Boston, MA, USA (NE-A); Child Family Health International, University of California San Francisco, Oakland, CA, USA (JE); Cumming School of Medicine, University of Calgary, Calgary, AB, Canada (FH); School of Medicine, University of Calgary, Dahdaleh Institute for Global Health Research, Calgary, AB, Canada (CH); Health In Harmony, Portland, OR, USA (JJ, NT); Partnership Health Center, Missoula, MT, USA (AK); School of Nursing, University of Wisconsin-Madison, Madison, WI, USA (JL); Health and Care Sciences, UiT The Arctic University of Norway, Tromsø, Norway (FM); Global Challenges, Brunel University London, Uxbridge, UK (OM); School of Environmental Studies, University of Eldoret, Eldoret, Kenya (OO); Population Health Science, University of Wisconsin-Madison, Madison, WI, USA (JP); School of Nursing, University of Minnesota, Minneapolis, MN, USA (TP); School of Medicine and Health Sciences, University of North Dakota, Grand Forks, ND, USA (NR); Newcastle University, Newcastle Hospitals, Newcastle upon Tyne, UK (SW); School of Nursing, University of

Alabama at Birmingham, Birmingham, AL, USA (LW); School of Medicine, University of Ottawa, Ottawa, ON, Canada (CX); Organisation for Noetic Ecology, Wittekrift, South Africa (MZ)

- 1 Plowright RK, Reaser JK, Locke H, et al. Land use-induced spillover: a call to action to safeguard environmental, animal, and human health. *Lancet Planet Health* 2021; **5**: e237–45.
- 2 United Nations. Transforming our world: the 2030 agenda for sustainable development. Aug 26, 2015. <https://www.un.org/development/desa/dspd/2015/08/transforming-our-world-the-2030-agenda-for-sustainable-development/> (accessed March 11, 2021).
- 3 Stone S, Myers S, Golden C. Cross-cutting principles for planetary health education. *Lancet Planet Health* 2018; **2**: e192–93.
- 4 Zylstra M, Knight A, Esler K, Le Grange L. Connectedness as a core conservation concern: an interdisciplinary review of theory and a call for practice. *Springer Sci Rev* 2014; **2**: 119–43.
- 5 Redvers N, Poelina A, Schultz C, et al. Indigenous natural or first law in planetary health. *Challenges* 2020; **11**: 29.
- 6 Whitmee S, Haines A, Beyrer C et al. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. *Lancet* 2015; **386**: 1973–2028.
- 7 Odum EP. The new ecology. *BioScience* 1964; **14**: 14–16.
- 8 Prescott S, Logan A, Albrecht G, et al. The Canmore Declaration: statement of principles for planetary health. *Challenges* 2018; **9**: 31.
- 9 Ganz M. Leading change: leadership, organization, and social movements. In: Nohria N, Khurana R (eds). *Handbook of leadership theory and practice*. Cambridge: Harvard Business School Press, 2010: 509–50.