



Vol. 10 | No. 4 (2024)

Article 7

Special Edition: Planetary Health and Well-Being in Nursing Education | Édition spéciale : Santé et bien-être mondial dans la formation en sciences infirmières

The Triple Planetary Health Crisis: Nursing Leadership in Championing the Integration of Planetary Health in Canadian Nursing Education

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Planetary health refers “to the state of the Earth system in terms of its ability to maintain stability, resilience, and life-support functions” (Caesar et al., 2024, p. 4). Over the past decade, planetary health has emerged as a scientific field of practice and global movement, as the world has experienced frequent catastrophic floods, droughts, wildfires, heat domes, and extreme heat waves that have directly impacted the health and well-being of humans and the planet (Myers & Frumkin, 2020; Planetary Health Alliance, n.d.-a). In 2009, the Lancet Health Commission declared that in the 21st century, climate change is the greatest threat to health (Costello et al., 2009). The Stockholm Resilience Centre (2023), since 2003, has been monitoring the critical threshold of nine planetary boundary (PB) processes (climate change, biosphere integrity, land-system change, freshwater change, stratospheric ozone depletion, novel entities, biogeochemical flows, ocean acidification, and atmospheric aerosol loading) that regulate the health of our planet. If the PB processes exceed safe operating levels, it will place the ecosystem and humans at risk for irreversible changes (Richardson et al., 2023). In 2023, six of the nine PB processes exceeded safe levels, and in 2024, there is evidence that other PB processes are on the verge of being breached (Caesar et al., 2024). As a result, these ongoing anthropogenic changes are impacting the quality and quantity of our food sources, the suitability of the water we drink, the quality of the air we breathe, our exposure to infectious diseases, and the habitability of our living conditions (Planetary Health Alliance, n.d.-a; Steffen et al., 2015). The United Nations Climate Change (2022) called the “three main interlinked issues that humanity currently faces: climate change, pollution, and biodiversity loss” a triple planetary crisis (para. 1). The 2024 Lancet Countdown report revealed the health threats of climate change have reached record-breaking levels (Lancet Countdown: Tracking Progress on Health and Climate Change, 2024, para. 1).

Canadian nursing educators have become increasingly responsive to integrating planetary health concepts into Canadian nursing curricula to address the urgency of the planetary crisis (Astle, 2021; Hanley & Jakubec, 2019; Kalogirou et al., 2020; Vandenberg, 2023). In 2022, the Canadian Association of Schools of Nursing (CASN) updated its National Nursing Education Framework to include planetary health. In addition, the Canadian Nurses Association (CNA), in partnership with the Canadian Association of Nurses for the Environment (CANE), developed a position statement on planetary health, calling for its integration into education, practice, advocacy, policy, and research (CNA & CANE, 2024). While these recent initiatives espouse the importance of integrating planetary health in undergraduate and graduate nursing education, there is a gap in the Canadian literature in describing how to integrate it into already full nursing curricula. As well, although the field of planetary health has been evolving, there is a lack of understanding of what planetary health means, and this may be one barrier that nurse educators face when integrating planetary health into the nursing curricula (Bonnamy et al., 2024; LeClair & Potter, 2022). This paper describes pivotal developments over the past decade in the emerging solutions-oriented, transdisciplinary field and social movement of planetary health, alongside developments in Canadian nursing education. It focuses on how a nurse educator championed and provided leadership for, with emphasis on the facilitators and barriers, the successful integration of planetary health content in a baccalaureate and graduate nursing program.

Timeline of Key Milestones in the Planetary Health Movement Alongside Developments in Canadian Nursing Education

In 2015, three significant and far-reaching milestones occurred: the United Nations Sustainable Development Goals (SDGs) were introduced; the landmark Paris Agreement was adopted with commitment from 196 parties at the United Nations Climate Change Conference to

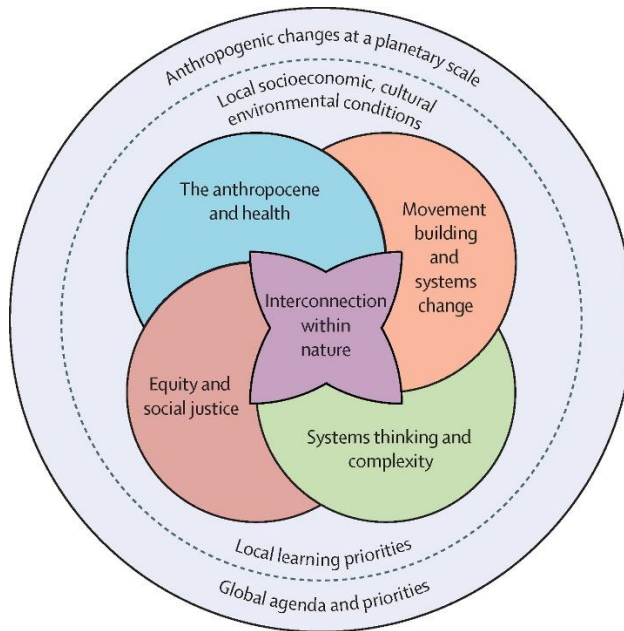
collectively address the migration, adaptation, and finance of greenhouse emissions impacting climate change (United Nations Climate Change, n.d., 2020); and the Rockefeller-Lancet Commission on Planetary Health report was published (Whitmee et al., 2015). Whitmee and colleagues (2015) defined planetary health as “the achievement of the highest attainable standard of health, well-being, and equity worldwide through judicious attention to human systems—political, economic, and social—that shape the future of humanity and the Earth’s natural systems that define the safe environmental limits within which humanity flourish” (p. 1974). This report led to the basis for the movement and field of planetary health. In 2016, the Planetary Health Alliance (PHA, n.d.-a) was founded based upon the recommendations from the Rockefeller-Lancet Commission on Planetary Health. The PHA is a consortium of over 450 universities, research institutes, nongovernmental organizations, and government entities from more than 75 countries that is dedicated to addressing and understanding global environmental impacts on human health and the planet. In 2018, the PHA developed a set of cross-cutting principles as a curriculum development guide for educators: (a) a planetary health lens, (b) urgency and scale, (c) policy, (d) organizing and movement building, (e) communication, (f) systems thinking and transdisciplinary collaborations, (g) inequality and inequity, (h) bias, (i) governance, (j) unintended consequences, (k) global citizenship and cultural identity, and (l) historical and current global values (Stone et al., 2018).

Accompanying these global advances in planetary health, in Canada in 2018, for the first time, the term *planetary health* was embedded in a chapter on global health in a Canadian fundamentals nursing textbook (Astle et al., 2018), and in 2024 it was added to the chapter title (Astle et al., 2024). In 2020, a group of Canadian nurse scholars wrote a call to action to address the field of planetary health to support policy (Astle et al., 2020), with an emphasis on the “critical role that Indigenous peoples carry in our responsibility to protect the sacred nature of water, which carries life’s potential, we will also protect the life of Mother Earth” (para. 3; see also Redvers, 2018) as it relates to the interconnectedness of planetary health.

In 2021, at PHA’s annual meeting in São Paulo, Brazil, the São Paulo Declaration on Planetary Health was co-created with various involved parties, calling on the global/planetary community to create a path for a more resilient and equitable post-pandemic world (Myers et al, 2021; PHA, n.d.-b). The most recent definition of *planetary health* from the PHA (n.d.b) is as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth” (para. 1). As well, from 2019 to 2021, an international group of transdisciplinary scholars, including nurses, collaborated on finding a shared language to educate others, involving the planetary health field and the social movement, to address the nine PB processes. There was agreement in the group that a transdisciplinary education approach that included Indigenous and Traditional Knowledges was essential. This collaboration resulted in the development of the Planetary Health Education Framework (PHEF), which provided a blueprint for all disciplines and professions to integrate planetary content in their curricula. The PHEF consisted of five foundational, interconnected domains focused on transdisciplinary collaboration and aligning with the SDGs (Faerron Guzmán & Potter, 2021; Faerron Guzmán et al., 2021). The five domains are (a) interconnection with nature, (b) the Anthropocene and health, (c) equity and social justice, (d) systems thinking and complexity, and (e) movement building and systems change (see Figure 1).

Figure 1

The Planetary Health Education Framework



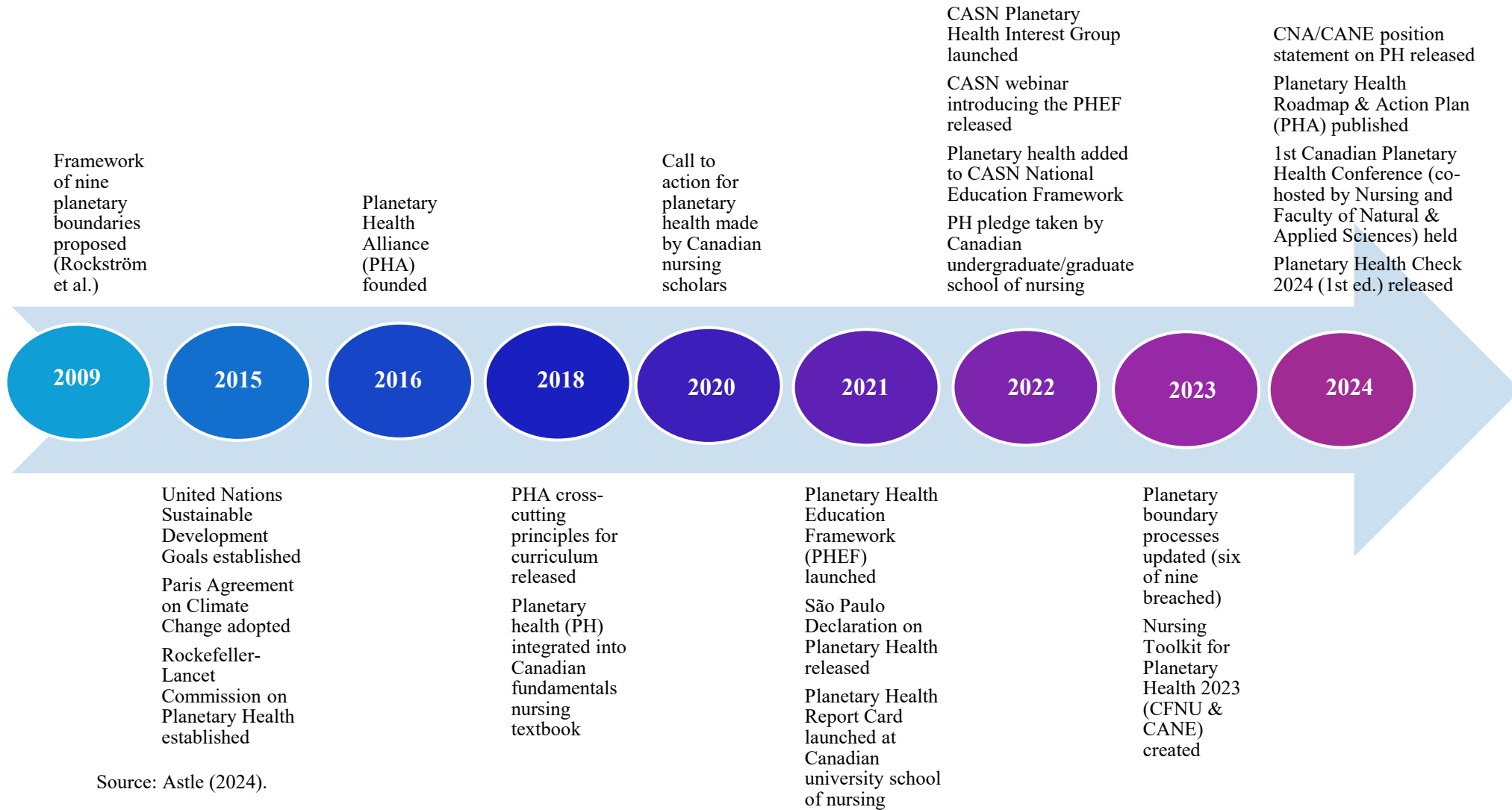
Source: Faerron Guzmán et al. (2021, p. e253). Used under Creative Commons licence CC BY-NC-ND 4.0.

The PHEF did not explicitly describe its application for implementation into curricula, as the overall thinking was that the specific learning contexts would best determine how the PHEF would be operationalized (Faerron Guzmán & Potter, 2021). Efforts are ongoing within nursing (Astle, 2021; Potter, 2021; Vandenberg, 2023) and other disciplines to operationalize the PHEF (Redvers et al., 2023). In 2024, two pivotal documents were released: the *Planetary Health Roadmap and Action Plan* (PHA, 2024), which aimed to work in partnership with other disciplines to support the health and well-being of humans and the planet in mainstreaming planetary health; and the first edition of the *Planetary Health Check* (Caesar et al., 2024), which aimed to improve the ongoing assessments of the planetary boundaries.

During and following the development of the PHEF and other global documents, Canadian nurse educators were acknowledging the importance and urgency of addressing the ongoing anthropogenic challenges to our planet and human health, calling for action to be taken in planetary health (Astle, 2021), climate change and health (Kalogirou et al., 2020), and ecoliteracy (Morin et al., 2022). In 2021 the PHEF was implemented, for the first time, in a Canadian baccalaureate nursing program. In 2022 CASN hosted a webinar about the PHEF, the term *planetary health* was added to the CASN National Nursing Education Framework, and the CASN Planetary Health Interest Group was launched. Other education developments were also taking place. In 2022 the Planetary Health Report Card was initiated in one Canadian nursing program; in 2023 a Nursing Toolkit for Planetary Health (Canadian Federation of Nurses Unions & CANE) was developed; in 2024, as noted, the CNA and CANE jointly published a position statement on planetary health; and in 2024, the School of Nursing and the Faculty of Natural and Applied Sciences at Trinity Western University co-hosted a Canadian conference on planetary health (Astle, 2024) (see Figure 2).

Figure 2

Milestones Timeline: Planetary Health Movement Alongside Developments in Canadian Nursing Education



Concurrently, outside Canada, nursing scholars are also acknowledging the importance of planetary health as a core element for nursing practice (Kurth, 2017; Kurth & Potter, 2022; LeClair et al., 2022; Potter, 2021) and the importance of embedding planetary health in nursing education (Bonnamy et al., 2024; Lokmic-Tomkins et al., 2023; Martin et al., 2024; Potter, 2021; Ross & Speirs, 2024; Tutticci et al., 2024; Ward et al., 2024).

The Process for Integration of Planetary Health in Nursing Curricula: A Case Example

It can be challenging to introduce new content into already full nursing curricula. A case example is used to offer insights on facilitators of and barriers to the successful integration of planetary health in a nursing curriculum in a Canadian university. This case example describes, retrospectively, a nurse educator who championed the gradual integration of planetary health education into an established mandatory course in a Canadian university's nursing baccalaureate and graduate program. Facilitators of and barriers to integrating planetary health concepts are described, followed by implications for moving forward in understanding how planetary health content is to be operationalized using various planetary health frameworks to integrate planetary health concepts into curricula.

Background

In 2015 CASN updated its National Nursing Education Framework to, for the first time, include the term *global health*, which addressed the essential components of “knowledge of social justice, population health, environment and global health issues” (p. 10). Concurrently, a Canadian university's nursing curriculum committee (Trinity Western University in British Columbia) was in the process of updating and revising its undergraduate curriculum. As previously stated, adding new concepts into a packed curriculum is challenging. In the case example, various elements were favourable to introducing global health and then eventually planetary health into the nursing program. The timing worked well to envision where and how global health might be integrated into the revised curriculum. In addition, the idea of a global health course fit well into the university's overall undergraduate student learning outcomes (SLOs), which focused on students developing practical and intellectual skills for life and service. One of the SLOs specifically pertained to social responsibility and global engagement, focusing on aspects of engaged citizens at the local, national, and international levels. At the institutional university level, all undergraduate students are required to take a course that aligns with this specific SLO. The School of Nursing (SON) and the dean were critically exploring how to better prepare students to participate in global health experiences within and outside the country. Concern was increasing in nursing and medical disciplines about reciprocity (Cherniak et al., 2017) and the length of global placements (Houweling et al., 2018). The financial costs to participate in global experiences were also prohibitive for many students, so there was a readiness to provide opportunities for all students to learn about global health and level this knowledge with local and national experiences in their next community course. This aligned well with the vision of equitable opportunities for all nursing students. Consequently, the undergraduate global health course became part of the health promotion cluster. In Year 1, students were introduced to various global health, equity, and social justice concepts. In Year 2, they had the global health course, followed in Year 3 with their community course, which fostered an appropriate levelling of content. In addition, this global health course became a mandatory requirement for all nursing students, but enrolment was also open to university students in other disciplines, pending approval from the course instructor. A nurse educator in the SON with long-standing expertise in global health was charged with taking the lead in championing the development of a global health course.

In summary, the key facilitators of integrating global health into the nursing curriculum came from timing related to changes in the CASN National Nursing Education Framework and the university's institutional mandate, SON departmental-level concerns, a readiness to make space in the nursing curricula for the global health course, and acknowledgement that there was an expert nurse educator in the department who could champion and assume leadership in developing and teaching of an undergraduate mandatory global health course. During this time, there was increased interest from nursing students in the master of nursing program for such a course. Consequently, the undergraduate global health course became the foundation of and segway to developing a directed study in global health. Key facilitators of this graduate-level global health course were a faculty member who possessed the expertise to develop and teach this course, approval by the dean (SON), and space in the graduate curricula to offer the course.

Simultaneously, the transdisciplinary field and social movement of planetary health was emerging, which was beginning to draw the attention of Canadian nursing scholars (PHA, n.d.-a). SONs recognized that the profession has a major role in working with other disciplines to address the many catastrophic global disruptions impacting the health and well-being of humans and the planet. In 2022 the addition of the concept of planetary health (which includes the triple threat of climate change, pollution, and biodiversity) to the National Nursing Education Framework further supported the acknowledgement of the importance of integrating it into Canadian nursing curricula. As a result, a mandatory undergraduate and graduate global health course already in place in the nursing program facilitated a logical integration of planetary health in the curricula.

Facilitators of and Barriers to Integration of Planetary Health

The case example illuminates the facilitators of and barriers to integration of planetary health in nursing curricula. The initial facilitators of the development of the mandatory undergraduate and graduate global health course also facilitated the integration of planetary health into the nursing curricula. The planetary health concepts, while previously not emphasized in the curricula, fit well with the global health and community course content and are essential knowledge for nursing students to possess in caring for their patients. The nurse educator who took the lead in the integration of planetary health was knowledgeable about the PHEF and began applying and actualizing it in the curricula (see Table 1). Conversely, barriers and potential challenges to the integration of planetary health in a nursing curriculum included a packed curricula, lack of understanding of planetary health content, lack of departmental support, lack of faculty with expertise in teaching planetary health, and lack of resources (see Table 1). Although these barriers were not experienced in this case example, it is important to acknowledge that adding new content to full nursing curricula is an ongoing concern for many nursing programs, and these are potential barriers and challenges for nurse educators.

Table 1*Process for Integration of Planetary Health in Nursing Curricula*

Facilitators	Barriers or challenges
• Timing: mandate from national nursing education association for integration of planetary health/global health in nursing education (at all levels: undergraduate, masters, and doctoral) • Institutional support at the university level • Departmental support from the head (dean/director) of the SON • Readiness to reimagine how to ensure that all students are adequately prepared for global experiences • Space: curriculum revisions that allowed for imagining where planetary/global health content would fit • Expertise in planetary/global health (faculty who possess expert knowledge in the planetary/global health content and knowledge of where to access teaching materials) • Planetary Health Education Framework (PHEF): knowledge of the PHEF is essential for applying and operationalizing the five domains as the framework for a planetary/global health course	• Full curriculum: challenge to assess where to add new planetary health content • Lack of understanding of planetary health content: is an emerging field, so there is a need for more nurse educators with substantive knowledge and skills in planetary health • Lack of departmental support from the head (dean/director) for the SON • Lack of expertise in planetary health (faculty who do not possess expert knowledge in the planetary health content) • Lack of awareness of resources and where to access them

Implications

It is important for nurse educators to assess the facilitators of and barriers to undertaking the integration of planetary health concepts into nursing curricula. The next critical step is further professional development for nurse educators to equip them with a solid understanding of what planetary health is and how to specifically apply and operationalize the various planetary health frameworks into their curricula for their context. Currently, there are nurse educators in North America (Honegger Rogers et al., 2024) who are taking the lead in operationalizing examples from the actualization of the PHEF. In addition, a cadre of resources, such as modules, and courses on various planetary health topics are increasingly being developed (PHA, n.d.-a). Such resources will support nurse educators to broaden their expertise to lead and operationalize the integration of planetary health into nursing education.

Conclusion: Moving Forward

The emerging scientific field of planetary health is transdisciplinary, solutions-oriented, and a social movement, so it is essential that the nursing profession work alongside other disciplines and collectively address the planetary health crisis. With the recent addition of the concept of planetary health in the CASN National Nursing Education Framework (2022), the time is now for visionary leaders, in nursing education, to champion and transform the nursing curricula. It is essential that nursing students have planetary health knowledge so that they are well prepared to address the ongoing structural and sustained human disruptions to our planet that affect the health and well-being of humans and the planet. In conclusion, it is imperative that nurse educators understand the facilitators of and barriers to integrating planetary health into a full curriculum so that they can lead the transformation of their nursing curricula.

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