

# Establishing a community development project with planetary health principles: a public health approach to learning and teaching

## Abstract

Planetary Health provides a model to clearly integrate sustainability and mitigate climate change as the ultimate determinant of health. Planetary Health is focused on the interconnectedness of the health of humans, non-humans and the physical environment, and relates closely to nurses' social mandate, to enhance health status. In this paper, we report on a community development project underpinned with the Community Health Assessment Sustainable Education model and Planetary Health 12-principles. A partnership developed between a community-led team working in environmental health, an educational institution and student nurse learners. Using the Planetary Health 12 education principles as a framing device, we show that the Community Health Assessment Sustainable Education model provides a basis for promoting all areas of the Planetary Health principles through incorporation in nursing education. Planetary Health in nursing education will be of particular interest to nurse educators tasked with integrating sustainability into nursing curricula and to nursing students who find themselves taken from their primary practice comfort zones and sent to the community to save the world as sustainable practitioners.

**Keywords:** planetary health, sustainability, community development, student nurses, education, CHASE model

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## Introduction

During the past decade or so, nurse educators have explored sustainability as an underlying tenant of nursing practice. Sustainability is expected of nursing<sup>1</sup> and therefore nursing education. The mandate for nursing education is clear<sup>2</sup> paramount<sup>3</sup>, or a "crucial footstep"<sup>4</sup>. But in a recent study of nursing students, Anåker et al.,<sup>5</sup> described a 'mismatched discourse' where nursing students described a gloomy future and recognized a common societal obligation in which nurses are important actors, yet they saw sustainability as difficult to apply to nursing as they were not adequately prepared.<sup>6</sup> We resonate and empathize with Anåker's<sup>5</sup> student nurses, in our experience and course evaluation in which our student nurses also articulated they too are not adequately prepared to practice as sustainable practitioners. The debate around sustainability to form an expected component of nursing education is not new.<sup>7,8</sup> Asaduzzaman et al.,<sup>4</sup> noted there is a wealth of literature on this subject, but a substantial barrier still exists between sustainability and nursing practice. The threat is clear, sustainability as a concept is both too broad and ill defined.

In this paper we provide an illustrated example of our student nurses' involvement of engaging in sustainable nursing practice, underpinned by the principles and knowledge of public health.<sup>9</sup> Public health nurses value and understand the connection between health, environment and populations. Understanding community health requires dedicated time and personnel to profile and assess a community's demographics and assets and identify health needs, create a detailed plan of action and implement agreed solutions with the aim of enhancing outcomes.<sup>10</sup> Communities in general don't have this resource,<sup>11</sup> while this is an ideal opportunity for student nurses to engage in community development and partner with a community under the direction of a Registered Nurse (RN) academic. Involving student nurses as a component of the Bachelor of Nursing (BN) curriculum supports the philosophy nurses are at the heart of community development and public health. They are appropriately placed to uncover inequities and

work in collaboration with vulnerable communities while sharing a commitment to community development which we demonstrate is intricately linked to Planetary Health. We further engage with Stone et al.'s<sup>12</sup> Planetary Health education principles as we elaborate on our understanding and contribution.

## Community development

Community development is a component of the BN curriculum at the School of Nursing, Otago Polytechnic, Dunedin, New Zealand. This curriculum prepares student nurses to be aware of the importance of the role of nurses (and fulfil nursing's social mandate) in reducing health inequalities and in addressing issues and interventions that should be addressed at national, regional, and local levels by funders and providers.<sup>13</sup>

Community development is a practice-based profession and an academic discipline that promotes participative democracy, sustainable development, rights, economic opportunity, equality and social justice, through the organization, education and empowerment of people within their communities, whether these be of locality, identity or interest, in urban and rural settings.<sup>14</sup>

The overall focus of community development is to enhance and bring together community stakeholders, residents, individuals, collective groups, and organizations, who are committed to improving the health and wellbeing of people or their environment related to their community. This requires a multi-disciplinary approach including practitioners from health, education, environmental, and community sustainability.<sup>13</sup> This wealth of knowledge and the collaborative efforts of numerous practitioners are a powerful source for collective action to improve health. This means sustainability, or Planetary Health is not about a few extra competencies for nurses but a change in perspective. It is worth pausing for a moment to ask why nursing? In this paper we provide a solution to this question, using a model of community development framed by a set of Planetary Health principles<sup>12</sup> of how

to embed sustainability into nursing education and told in a way that forefronts our experience.

### Project development

All students of the final year of the BN program at our educational institution work in teams of eleven students to participate in a community development project as a component of a Primary Health Care clinical placement. This placement equates to 120 clinical hours for each learner, facilitated by an RN academic and sustainability practitioner.

### Identifying the community

The Otago Peninsula Biodiversity Group (OPBG), Dunedin, New Zealand was the community/organization engaged with. This organization indicated their interest in providing us (including the cohort of students) with an opportunity to work in partnership with them to identify potential health issues related to their organization. This community development project was facilitated by the RN and together with the student nurses a collaborative relationship with the OPBG stakeholders was established.

### CHASE Model guiding the community project

The CHASE model<sup>10</sup> in Figure 1 guided the community development project. The CHASE model is a ‘model in action’ created to direct nurses as they engage with community development. The CHASE Model comprises pre-engagement, pre-orientation, and orientation stages and eleven phases. The pre-engagement and pre-orientation stages require the RN academic to establish a partnership with potential community stakeholders. Student nurses are introduced to the community project and the identified community or organization at the orientation stage. Students then work through phases one to seven during their clinical placement allocated hours with the aim to profile, assess the community, identify health issues, and develop a health promotion resource which is implemented in the community to improve the identified health issues and reduce health disparities, while fulfilling nurses’ social mandate. Prior to commencing the project Category B ethical approval was applied for by the RN and was granted from the School of Nursing Ethics Committee at the educational institution. The aim of this ethical approval grants the student nurses with the opportunity to have open conversations and email dialogue with the community stakeholders.

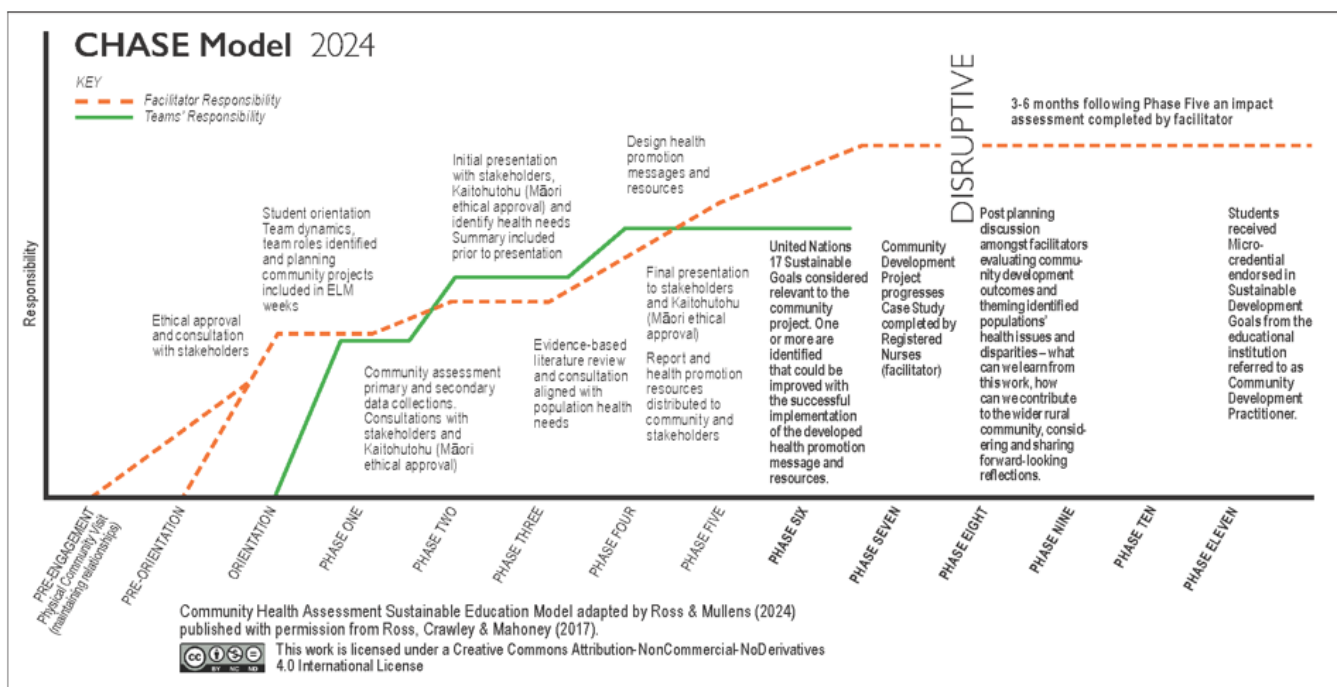


Figure 1 The CHASE Model 2024.<sup>10</sup>

Source: Authors

### Getting to know the community

In July 2023, under the direction of the RN the student nurses commenced the community development project with the OPBG, Dunedin, New Zealand. Initially, a collaborative relationship between community stakeholders and the RN academic was established in the pre-engagement and pre-orientation stages (Figure 1).

### Assessing the community

The identified community, the OPBG was profiled and assessed (phases one and two of CHASE, Figure 1) with the aim of identifying

health-related issues. To achieve this the student nurses considered the socio-political, demographic, cultural, sustainable, economic, and environmental aspects related to the OPBG community.<sup>10</sup>

### The community

Otago Peninsula Biodiversity Group was established by residents of the Otago Peninsula with a vision of protecting the Peninsula's biodiversity, by facilitating the removal of introduced predators (animals) to the Otago Peninsula. The OPBG comprises seven employed staff and over 100 volunteers who participate in various

activities to work towards a predator-free Peninsula. OPBG has a close relationship with the residents and facilitates workshops to engage the community to reach the goal and become a predator-free Peninsula by 2030. Residents have a shared passion with the OPBG staff for wildlife, scenery and protecting the environmental heritage.<sup>15</sup> Both primary and secondary data was gathered from the identified community stakeholders, the data was analyzed using a SWOT analysis to discover potential health issues related to an identified population group associated with OPBG.

### Identifying health issues and population group

The identified health issue was associated with the seven paid employees, related to as the identified population group. These employees highlighted self-doubt and pressure resulting in stress, anxiety and lack of motivation to meet the predator-free (possum) Peninsula goal of possum eradication by 2030.

Table 1 provides the links between the components of the CHASE model as it relates to the OPBG community development project.

**Table 1** The CHASE Model as it relates to this project

CHASE Model	Relation to this Project
Community	Otago Peninsula Biodiversity Group, Dunedin, New Zealand including the staff and volunteers.
Health	The health of the Otago Peninsula Biodiversity Group employed staff became the identified health need.
Assessment	A collection of primary and secondary data was assessed and analysed related to the Otago Peninsula Biodiversity Group employed staff.
Sustainable	The Otago Peninsular Biodiversity Groups employed staff was the subject of sustainability as they went about their work with a common commitment to eradicate and become a predator-free Peninsular by 2030 was increasing their anxiety and stress levels.
Education	Active engagement with the Otago Peninsula Biodiversity Group employed staff, leading to innovative systems-thinking to identify and improve health through the creation of a health promotion message and resources.

### Outcomes

As the project progressed, the student nurses planned, developed and implemented health promotion resources to improve the health of the employed OPBG staff and influence change at the local level. The data analysis from the OPBG community development project and Stone et al.,’s<sup>12</sup> 12 cross-cutting principles of Planetary Health, Stone et al.,<sup>12</sup> (Table 2) act as a framing device for this analysis which is and presented below.

**Table 2** Stone’s et al., 12 cross-cutting principles for Planetary Health education<sup>12</sup>

Planetary Health Lens
Historical and current global values
Global citizenship and cultural identity
Inequality and inequity
Urgency and scale
Governance
Bias

Systems thinking and transdisciplinary collaborations
Organizing and movement building
Communication
Policy
Unintended consequences

**Planetary health lens** - means developing an understanding of the complex relationships between the environment and human health. At the commencement of this community project, the students raised their concerns of the relevance of community development to nursing or health. Initially, they were overwhelmed and not so positive, going into the clinical placement with the extent of the project and the significant work that had to be completed within a group, let alone having a project that was not as straightforward nor directly linked to an identified health issue. However, as the weeks passed, their concerns were completely changed to a positive and engaged perspective on the developing project.

The student nurses identified the connection between the complex relationships between the environment and human health as we analyzed the data, which highlighted OPBG environmental biodiversity goals and the mental health issues associated with stress and anxiety identified amongst the paid employees from OPBG.

**Historical and current global values** - As the community development project developed, the student nurses expressed they had a better understanding of the environmental context in which they were engaging and realized the importance of understanding the historical past to solve problems presented to them in the present an example of this came from the data collection that the OPBG has been formed by keen Peninsula residents with a vision of protecting the Peninsula’s biodiversity, lifestyle and economic values by facilitating the removal of introduced predators (possum).

Otago Peninsula Biodiversity Group’s mission was to become a predator-free Peninsula to conserve the local biodiversity.<sup>16</sup> The local action plan aimed to actively enhance both the residents of the Peninsula community’s understanding of biodiversity, informing and motivating the engagement of residents to equally share responsibility and benefit from conserving the local biodiversity.

**Global citizenship and cultural identity** - a person who acknowledges they see themselves as a member of international communities whose values and beliefs align with their own cultural positioning within local and global communities.<sup>12</sup> In New Zealand, this positioning usually starts with one’s own relationships and historical background (whakapapa, expressed through a mihi) and is reciprocated by community members. From a nursing perspective, cultural identity and cultural respect are represented in the nurses’ Code of Conduct, which assists in guiding our practice regarding a person’s cultural values and beliefs.<sup>17</sup>

**Inequality and inequity**- Engaging with the principles of Planetary Health offered the student nurses an insight into thinking critically about the wider aspects of health, vulnerable groups, health disparities and inequities in society.

This community project was facilitated by the RN from the institution providing the student nurses with the opportunity to clarify any questions and deepen their understanding of the OPBG organization with community stakeholders.

The CHASE model assisted the student nurse learners to address the disparities for Māori (indigenous people of New Zealand) and present their findings from the community assessment and needs

analysis and ensure cultural considerations have been discussed with the Indigenous Panel (local education advisors on matters pertaining to Māori). This ensured we approached constructing primary and secondary data with an emphasis on being culturally sensitive and maintaining a focus on the Māori population of OPBG to address and alleviate any inequities, demonstrating cultural sensitivity and understanding of Māori cultural protocol, values, and beliefs.

**Urgency and scale** - Planetary Health is focused on environmental change, its effects on human health, and the urgency with which the global population must respond. The OPBG paid employees have a shared passion for wildlife, scenery, and protecting heritage. One of the main projects that the group was undertaking was possum eradication to reach its vision of a predator-free Peninsula by 2030. Building on the community assessment, the student nurses identified the health issue amongst these seven paid employees, highlighting self-doubt and pressure about meeting their possum-free Peninsula goal within the timeframe. Further, it was identified how the paid employees of OPBG achieve the end goal of possum eradication by 2030 sustainably and increase capacity to build resilience? The CHASE model (phases one and two) helped guide the student nurses to collect primary and secondary data and assess the context and come up with potential solutions that met the identified health needs and phases three and four).

**Governance** – governance is not a simplistic concept. Governance is a dynamic and ever-changing concept related to both external and internal factors of an organization or community. The dynamics of the governance structures of the OPBG organization to their upcoming deadline of eradicating possums from the Peninsula by 2030 coupled with the paid employees' desire to protect the biodiversity of the Peninsula. It was identified from the data that this goal was causing the employees stress, anxiety, and a decrease in motivation.

**Bias** - awareness of the political, social, and economic dynamics that were driving OPBG's aim and the effects this was having on the seven paid employees in contrast to the financial and local communities' goals. This led the student nurses to dig deeper into understanding the Planetary Health principal *systems thinking and transdisciplinary collaborations* with an organization consisting of both paid employees (staff) and volunteers working in a complicated environment and delicately poised cultural relationships. Peering into this complex system, the student nurses were able to make the link between the pressure on employed staff increasing their stress and consequently limiting their motivation, which was having a further effect on their mental health, limiting their ability to make a difference these required capabilities as system-thinkers. *Systems-thinking* is a powerful tool for understanding and addressing complex problems. Problems need to be identified, clarified with community stakeholders, goals developed with a plan of action, implemented and outcomes evaluated (CHASE phases five and nine).

**Organizing and movement building** the CHASE model required the student nurses to:

1. Develop an understanding of the OPBG organization, informing them of any issues that could be managed. Addressing the perceived weaknesses of the organization through strategic planning and change management could allow for improved health outcomes, and result in a more effective and efficient achievement of their goal
2. Experience creating a team of nurse learners working on Planetary Health while providing with an opportunity to be successful in the combined work.

**Communication** - an essential skill in nursing demonstrated in this community development project as student nurses communicated with numerous community stakeholders. The students became aware of stakeholders' different goals, cultures and timelines and the challenges and complexities of communicating, listening and working as a team. The community development project reinforced the significance of open dialogue and honest feedback in fostering a positive group dynamic. It also offered the students the importance of balancing personal relationships with leadership responsibilities, realizing that sometimes difficult conversations are necessary for the greater good of the team.

The students undertook an evidence-based literature review considering national and international literature, strategies and policies and produced evidence-based resources specifically focused on supporting the mental health (identified health need) of the employed staff of OPBG. This included designing a health promotion message (CHASE phase four) guided by the principles of the Ottawa Charter<sup>18</sup> to improve the identified health needs of the OPBG goal and their employed staff. To communicate the message of health promotion, the students collectively designed a bumper car sticker to act as a badge of honor and bond between OPBG members and the wider local community residents; to show one another they are not alone in them striving to protect the Peninsula. This health promotion resource illustrates the phrase '*Peninsula Protector*' which is a short and punchy way of conveying the message using alliteration which may give it the ability to be memorable in people's minds. The students selected a shield design to represent this idea of 'protection'.<sup>19</sup> Within the shield symbol is a hand-drawn outline of the Otago Peninsula to physically represent the community highlighted in Figure 2. This concept is a nice visual expression of the '*Peninsula Protector*' message. The background color blue was chosen as the most suitable color to display a message of sustainability and links closely with the environmental themes of the biodiversity group.<sup>20</sup>



Figure 2 Bumper Sticker.

Source: Morrissey et al.,<sup>21</sup>

This resource, although small, has the potential to be large in impact, provoking thought and raising awareness while reaching local and wider communities. The overall aim was to bridge the gap between staff and volunteers and establish a better sense of togetherness and gratitude for the collective participation required to achieve the OPBG's goal which was distributed within the community.

**Policy** - Planetary Health is intrinsically policy oriented and context-specific. This means that student nurses need to be aware of the policy frameworks in play, and how to use this policy to achieve change. Through the CHASE model the students explored how to translate the community project findings into policy through developing a written report describing all phases of CHASE to the community.<sup>21</sup>

**Unintended consequences** - the students considered any unexpected surprises the organization could encounter, they thought ahead in doing so they were able to think critically and be objective.

By the end of the project, the students recognized the connection between environmental stewardship and health (Figure 3).



**Figure 3** Otago Peninsular is the connection between the health of the planet, humans and animals.

Source: Morrissey et al.,<sup>21</sup>

## Discussion

CHASE is a model we encourage student nurses to engage with to propel their community development project, in this case focusing on the OPBG, Otago, Dunedin, New Zealand. Facilitated by the RN student nurses completed a community development project in their final year of their BN degree program. The students worked in a team of eleven student nurses to gather insights from this community organization that they were assigned to work with. As the community development project progressed, we were able to demonstrate that community development is intricately linked to Stone et al.,<sup>12</sup> 12 cross cutting Planetary Health principles. Using these Planetary Health principles, a connection between human and planet health (biodiversity) was made. The team engaged with Planetary Health as a potential framework to clearly integrate environmental sustainability while looking for a form of recognition for both the staff and volunteers to act as a motivator for them to continue their journey despite the challenges of becoming a predator free peninsula by 2030. These factors included the increased difficulty in reaching the last 20 percent of possum eradication, the stress of the change of strategy, goal and management, and the pressure the significant external funding and timeline had on employees' motivation and stress. Overall, utilizing 'peninsula protector bumper stickers as a health promotion message and resource for OBPG is a strategic and impactful approach. By serving as an active reminder of community support and aligning values, these stickers can motivate staff and volunteers during the end-stage eradication period, fostering a sense of togetherness and resilience to achieve their environmental mission. The team of student nurses developed strong bonds between each other, critical in strengthening relationships and understanding other perspectives. This encouraged them to work collaboratively and

support one another through the process of understanding not only the project but also how, as a group of third-year student nurses can develop a health promotional message to improve the identified health issues.

## Conclusion

The most valuable contribution this community development project has presented is that health is even broader than what the student nurses could imagine. The students indicated that it was hard to visualize at the beginning of the community development project the connection between health and biodiversity. However, this project has offered the student nurses an opportunity to identify the health needs of a population group. As nurses working within the specialty of public health, they can provide a resource to effectively improve the identified health need. The student nurses became aware that what they created could make a real difference and enhance the health needs of the OPBG's employed staff and continue with their goal to become a predator-free Peninsula by 2030. The student nurses were able to understand and make connections between caring for the earth (biodiversity) and the health of the humans (OPBG employees). This is an example for the nursing profession as to how we can increase our visibility of nurse-led engagement in Planetary Health. Planetary Health is focused on the interconnectedness of what was developed to improve the health of humans, other species, and the physical environment, which can be described in terms that can readily be integrated into pedagogy or nursing curriculum. Planetary Health principles provide a framework to clearly integrate environmental sustainability.

The student nurses engaged in a community development project using the CHASE model<sup>10</sup> and Stone et al.'s Planetary Health principles.<sup>12</sup> Engaging with these models assisted in making the connection between human and Planetary Health. Nurses of the future need to be prepared to contribute to the Planet Health movement a new territory for the nursing discipline supported through undergraduate education. Within this paper we have demonstrated that student nurses under the facilitation of a RN can create sustainable futures when they engage with the CHASE model related to a community development placement and embrace Planetary Health principles while relating that into their future professional practice.

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## Ethical approval and consent to participate

The study was conducted and approved by the School of Nursing Ethics Committee of Otago Polytechnic Educational Institution (03, December 2021).

## Conflicts of interest

The authors declare that there is no conflict of interest.

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