

UNDERSTANDING CLIMATE CHANGE IN NURSING PRACTICE: AN EDUCATIONAL  
TOOL FOR NURSES

By:

RALUCA RADU (*MSN, RN*)

THE UNIVERSITY OF BRITISH COLUMBIA

Vancouver

January/2020

© Raluca Radu, 2020

## **Abstract**

Humanity today faces one of the most complex issues of its time: climate change. This natural phenomenon has been shown to have significant impacts on people's health. As a trusted profession, nursing has the capacity and expertise to position itself in a way that advocates for health promotion and disease prevention practices in a changing climate. Nurses are encouraged to embrace the interconnectedness between the environment and human health at the core of their practice. Through an extensive review of the literature, I have developed a lesson plan that nurse educators can use to teach climate change topics in both clinical and university settings. Several resources from the planetary health field were used to guide my development of the lesson plan. Its overall intent is to introduce learners to key aspects of climate change and their impact on human health, alongside emphasizing where nursing fits within this field.

***Keywords:*** climate change, nursing, planetary health, health effects, human health, environment.

**Lesson Plan for Educators:**  
***“Understanding Climate Change in Nursing Practice”***

**Workshop/ Class Description:**

This workshop/class introduces learners to the concept of climate change as it relates to nursing practice. Learners are offered an overview of the science behind climate change followed by a discussion regarding the global and local effects seen today and expected for the future. A substantial component of the workshop/class is related to the analysis of the health effects caused by climate change. The overarching goal of the workshop/class is to inform nurses where their role is situated and how they can enact feasible solutions in various practice settings.

(\*Please note I used the terms ‘workshop/class’ for the following reason: if this lesson is taught within a clinical setting it is best for it to be referred to as a ‘workshop’; if it is taught within an educational institution it is best to be referred to as a ‘class’; therefore, I have left it up to each educator to select the term appropriate to their teaching contexts\*)

**Level:**

This workshop/class is intended for either upper or lower-level undergraduate nursing learners, graduate nursing learners, as well as practicing nurses of all designations.

**Mode of content delivery:**

In person

**Lesson Leader:** (to be filled out by educator)

**Learning Objectives:**

Upon completion of this workshop/class learners will be able to:

1. Identify key concepts related to climate change and how it directly impacts human health through a nursing-specific lens.
2. Examine the global and local effects caused by climate change, with a particular emphasis on a Canadian context.
3. Critically analyze the multitude of health effects caused and amplified by climate change, with a specific focus on: Non-communicable Diseases (NCDs), Infectious Diseases (IDs), Mental Health, Nutrition, and Displacement.
4. Establish an understanding of how a nurse’s role intersects with climate change and health impacts in all levels of practice.
5. Identify strategies that can be applied in nursing practice aimed at health promotion and disease prevention in a changing climate.

## **Learner Expectations:**

To gain the most out of attending this workshop/class learners are strongly encouraged to actively participate throughout the entire duration of the lesson, be it via large or small group activities. Learners are also welcomed to share any insights they have on the topic of climate change, whether they are gained from past experiences or from the assigned pre-work. The selected preparatory work is meant to enhance the overall group discussion and exploration of key climate change and health topics.

(NB Learners from educational institutions are required to submit their answers to the guided questions assigned in the preparatory work prior to class in order to earn credit ~5% or as per educator's discretion. With respect to practicing nurses, questions are to be used as guides for reflection and for in-class participation. Kindly tailor the required preparatory work accordingly based on your group of participants, and where appropriate [i.e. with post-secondary students], ensure they provide APA references for their answers)

---

## **Required Preparatory Work for Learners:**

- I. **Watch** “Anthropocene: The Human Epoch” (1 hr 27 min duration)
  - Available at the Cineplex Store (\$4.99 rental), iTunes Store (\$2.99 rental), or Crave TV (subscription needed)
  - Further information about documentary can be found at:  
<https://theanthropocene.org/film/>

## **Guiding Questions:**

1. Reflect on the image in the film with the largest landfill in the world situated in Nairobi, Kenya, commonly referred to as the ‘Dandora Landfill’. Consider what kind of health problems may arise for those individuals who work in the landfill? What about for the individuals who live in proximity to this landfill?
  2. What are some of the risks associated with logging of the beautiful temperate rainforests situated on Vancouver Island? (Consider one that may impact the surrounding environment and one that may impact human health)
- 
- II. Take the following **Quiz** to test how much you know about climate solutions. Make note of your top two results and be prepared to discuss them in class ☺

[https://www.cnn.com/interactive/2019/04/specials/climate-change-solutions-quiz/?fbclid=IwAR2kx0x8J\\_dlSYr3ECh8yEegQGj39f9OVsfK9mbf94NjpMEWkJD\\_xWPuEU](https://www.cnn.com/interactive/2019/04/specials/climate-change-solutions-quiz/?fbclid=IwAR2kx0x8J_dlSYr3ECh8yEegQGj39f9OVsfK9mbf94NjpMEWkJD_xWPuEU)

### III. **Readings:**

1. *Call-to-action on climate change and health: From Canada's health professionals to Canada's federal political parties* (Available at: <https://cape.ca/wp-content/uploads/2019/01/2019-Call-to-Action-Feb-5-2019-FINAL.pdf> )

#### Guiding Question:

- Given the nature of the above call-to-action being released prior to the Canadian Federal Election of 2019, identify a policy that may have been implemented since then as a result of this document. If you do not come across any policy, what are your thoughts surrounding the level of political activity and action with respect to climate change in Canada and/or in your own province?
2. *Why lost ice means lost hope for an Inuit Village* (Available at: <https://www.nytimes.com/interactive/2017/11/25/climate/arctic-climate-change.html> )

#### Guiding Question:

- The Inuit Peoples' deepened spiritual connection with their environment has been and continues to be threatened by the dramatic changes in climate that have taken place over these past few decades. What are the most immediate implications concerning these individuals' health and how do they affect their daily lives?

#### **Supplemental/Recommended Readings for Learners:**

Canadian Nurses Association [CNA]. (2017). *Climate change and health*. Retrieved from: <https://www.cna-aiic.ca/-/media/cna/page-content/pdf-en/climate-change-and-health-position-statement.pdf?la=en&hash=5E757EEDA69508F4EEBF797902D6F843E4407EA4>

Healthcare Without Harm. (2019). *Health care climate footprint report*. Retrieved from: <https://noharm-uscanada.org/ClimateFootprintReport>

International Council of Nurses [ICN]. (2018). *Nurses, climate change and health*. Retrieved from: [https://www.icn.ch/sites/default/files/inline-files/PS\\_E\\_Nurses\\_climate%20change\\_health.pdf](https://www.icn.ch/sites/default/files/inline-files/PS_E_Nurses_climate%20change_health.pdf)

Martin, W. & Vold, L. (2019). Climate change and health: It's time for nurses to act. Retrieved from: [https://nursesunions.ca/wp-content/uploads/2019/05/CFNU\\_climatechange-web.pdf](https://nursesunions.ca/wp-content/uploads/2019/05/CFNU_climatechange-web.pdf)

McMichael, A. J. (2013). Globalization, climate change, and human health. *The New England Journal of Medicine*, 368(14), p. 1335-1343. doi: 10.1056/NEJMr1109341

Ogden, N. H. & Gachon, P. (2019). Climate change and infectious diseases: What can we expect? *Canada Communicable Disease Report* 45(4), p. 76-80. <https://doi.org/10.14745/ccdr.v45i04a01>

Wiley, E. (2019). The unseen impacts of climate change on mental health. *BC Medical Journal* 61(4), p. 180, 188. Retrieved from: <https://www.bcmj.org/cohp/unseen-impacts-climate-change-mental-health>

### **Agenda for Workshop/Class:**

**(3.5 hours lecture time; 35 minutes total time allocated to breaks)**

#### **1) *Introductory remarks (~1 hour)***

- Overview of workshop/class (~10 min)
- Introduction of educator and of learners (**NB** if you have more than 15 students in your class, please get students to introduce themselves to one another and to share one fun thing with each other – in the form of an ‘Ice Breaker’ activity depending on your preferences) (~10 min)
- Show TedxTalk presentation by Dr. Courtney Howard, ‘Healthy People, Healthy Planet’ (~16 min) → <https://www.youtube.com/watch?v=FgIYakIWOK4>  
→ **Guiding questions to consider for TedxTalk:** What was the first thing that stood out to you during her presentation? Did anything surprise you? Are there any examples from your practice/personal life that you feel you can relate to?
- Discussion of above video and of preparatory work (~25 min) (**NB** please refer to guiding questions in preparatory work for facilitation of discussion)

---

#### **Break (10 min)**

---

#### **2) *Lecture with integrated Question & Answers (~1 hour)*** (Designing a set of PowerPoint slides is recommended; please refer to the resources attached below for guidance on developing your own presentation)

#### **Topics to be covered in class:**

- **Climate Change:** Simplified overview of science behind it (Greenhouse Gases; difference between weather & climate; global warming vs. climate change; explaining Anthropocene as the new era of human-induced climate change → this piece can be tied into the documentary that was watched at home)

#### **Resources:**

- Refer to Module 1: <https://nextgenu.org/course/view.php?id=237#section-2>
- <https://cape.ca/wp-content/uploads/2019/04/Module-1-FACTSHEET-TO-UPLOAD.pdf>
- **Global vs Local effects** (consider variation across Canadian provinces – context/demographics)

**Resources:**

- <https://planetaryhealthalliance.org/education>
- **Global:** <https://cape.ca/wp-content/uploads/2019/04/Module-2-Factsheet-ready-to-upload-FINAL.pdf>
- **Local:** <https://cape.ca/wp-content/uploads/2019/04/Module-3-Factsheet-NEW-1.pdf>

- **Health Effects** (overview, specific examples especially ones that include groups that are most vulnerable – i.e. children, elderly, low-income individuals)

**Resources:**

- <https://globalhealthcenter.umn.edu/education/climatehealth>
- Refer to Module 2: <https://nextgenu.org/course/view.php?id=237#section-5>
- <https://www.canada.ca/en/health-canada/services/climate-change-health.html>

- **Indigenous Considerations**

**Resources:**

- First Nations Health Authority [FNHA]. (n.d.). *#itstartswithme: Creating a climate for change*. Retrieved from: <http://www.fnha.ca/Documents/FNHA-Creating-a-Climate-For-Change-Cultural-Humility-Resource-Booklet.pdf>
- <https://indigenouspeoplesatlasofcanada.ca/article/climate-climate-change/>
- <https://www.aadnc-aandc.gc.ca/eng/1100100034249/1100100034253>

- **Relevance to Nursing:**

- Values: equity, social justice, human rights through which all nurses practice
- Code of Ethics & Standards of Practice (i.e. moral obligation for nurses to act)
- Relationship between Social Determinants of Health & Climate Change

**Resources:**

- <https://climateactionnetwork.ca/issues/impacts-and-adaptation/learning-centre/global-impacts/social-impacts/>
- <https://files.visura.co/users/12837/b1fa9baced04231eb7d121710c601efe.pdf>
- <https://cape.ca/wp-content/uploads/2019/04/Module-6-Factsheet-FINAL.pdf>
- Webinar by Dr. Elizabeth Schenk on ‘*Environmental Stewardship in Healthcare – A Nursing Perspective*’:  
<https://play.library.utoronto.ca/9ikCAnBqZIFT>
- <https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health.html>

---

**Break (20 min)**

---

**3) Interactive exercise: Case studies (~1 hour)**

- The overall goal of this activity is to demonstrate through case-studies group work, the interconnectedness between health – environment – nursing practice
- Depending on your class size, please divide students up in groups. Here are potential case scenarios that you can offer your students. Although the resource below was used in teaching Medical students about climate change and health scenarios, these

- can be easily adapted to fit Nursing practice and a Canadian context (i.e. consider forest fires in BC in 2018, flooding in Ontario in 2019, increasing heatwaves in Quebec and Ontario that cost the lives of many elderly individuals, etc.)
- Please follow link below and access the resource files that refer to ‘Simulation Exercises’ and ‘Clinical Group Exercises’ for more detailed reference:  
<https://networks.sustainablehealthcare.org.uk/networks/sustainable-healthcare-education/simulation-exercises-teaching-clinical-skills-and>

---

**Break (5 min)**

---

**4) Wrap-up (~30 min)**

- Discuss recommendations for nursing practice (i.e. ‘What can you do?’)  
**Resources:**
  - Canadian Nurses Association [CNA]. (2008). *The role of nurses in addressing climate change*. Retrieved from: [https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/climate\\_change\\_2008\\_e.pdf?la=en](https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/climate_change_2008_e.pdf?la=en)
  - <https://cape.ca/wp-content/uploads/2019/04/Module-8-FACTSHEET-READY-TO-UPLOAD.pdf>
  - [https://greenhealthcare.ca/wp-content/uploads/2015/05/Green-Teams-GTA\\_November\\_2016\\_proof3.pdf](https://greenhealthcare.ca/wp-content/uploads/2015/05/Green-Teams-GTA_November_2016_proof3.pdf)
- Open floor to any additional Q + A



## Rubric for grading learner responses to guiding questions

(NB adapted from Nursing 520: Administrative Leadership in Nursing course syllabus with permission from Dr. Maura MacPhee)

### CRITICAL THINKING RUBRIC

| Criteria/Quality                                                            | Emerging                                                                                                   | Developing                                                                                                                       | Proficient                                                                                                             |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Identifies and describes key concepts</b>                                | Fails to identify all key concepts                                                                         | Identifies key concepts, though some concepts are superficially <b>described</b>                                                 | Clearly identifies key concepts and <b>explains</b> their importance.                                                  |
| <b>Links together key concepts</b>                                          | Fails to identify key linkages among concepts                                                              | <b>Explores</b> some important linkages among concepts                                                                           | <b>Recognizes</b> integral relationships among concepts                                                                |
| <b>Communicates own perspective</b><br><b>Recognizes other perspectives</b> | -Fails to provide a rationale for own position on an issue<br>-Considers only one/own position on an issue | -Presents own position with a <b>rationale</b><br>-Fails to consider other perspectives on the issue                             | -Presents own position with <b>rich, evidence-based rationale</b><br>-Considers <b>other perspectives</b> on the issue |
| <b>Analyzes/weights the evidence</b>                                        | -No evidence of evaluation of the evidence<br>-Does not distinguish between fact and opinion               | -Demonstrates adequate skill in <b>selecting appropriate sources</b> of evidence<br>-Discerns fact from opinion                  | - <b>Examines</b> the evidence for accuracy and relevance<br>-Selects evidence that has the most impact                |
| <b>Grammar, spelling, APA</b>                                               | -Fails to proof read<br>-Content is poorly organized<br>-Sources are incorrectly cited                     | -Content is organized<br>-Some <b>choppiness</b> or unclear transitions between ideas/paragraphs<br>-Sources are correctly cited | -Transitions between ideas/paragraphs <b>enhance readability</b> (no choppiness)                                       |

## References

Albeck-Ripka, L. (2017). *Why lost ice means lost hope for an Inuit village*. Retrieved from:

<https://www.nytimes.com/interactive/2017/11/25/climate/arctic-climate-change.html>

Canadian Association of Physicians for the Environment [CAPE]. (April 2019). *Climate change toolkit for health professionals*. Perrotta, Kim (editor). Retrieved from:

<https://cape.ca/campaigns/climate-health-policy/climate-change-toolkit-for-health-professionals/>

Canadian Association of Physicians for the Environment [CAPE], Canadian Medical Association [CMA], Canadian Public Health Association [CPHA], Canadian Nurses Association [CNA], & Urban Public Health Network. (2019). *Call to action on climate change and health: From Canada's health professionals to Canada's federal political parties*.

Retrieved from: <https://cape.ca/wp-content/uploads/2019/03/Press-Release-CC-Call-to-Action-Feb-5-updated-March-2019.pdf>

Canadian Geographic: Indigenous Peoples Atlas of Canada. (2020). *Climate Change*.

Retrieved from:

<https://indigenouspeoplesatlasofcanada.ca/article/climate-climate-change/>

Canadian Nurses Association [CNA]. (2008). The role of nurses in addressing climate change.

Retrieved from: [https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/climate\\_change\\_2008\\_e.pdf?la=en](https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/climate_change_2008_e.pdf?la=en)

Canadian Nurses Association [CNA]. (2017). Climate change and health. Retrieved from:

<https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/climate-change-and-health-position-statement.pdf?la=en&hash=5E757EEDA69508F4EEBF797902D6F843E4407EA4>

Center for Global Health & Social Responsibility. (2020). *Climate change and health: An interprofessional response*. Retrieved from:

<https://globalhealthcenter.umn.edu/education/climatehealth>

Climate Action Network. (2018). *Social impacts*. Retrieved from:

<https://climateactionnetwork.ca/issues/impacts-and-adaptation/learning-centre/global-impacts/social-impacts/>

First Nations Health Authority [FNHA]. (n.d.). *#itstartswithme: Creating a climate for change*.

Retrieved from: <http://www.fnha.ca/Documents/FNHA-Creating-a-Climate-For-Change-Cultural-Humility-Resource-Booklet.pdf>

Government of Canada. (2019). *Climate change and health: Health effects*. Retrieved from:

<https://www.canada.ca/en/health-canada/services/climate-change-health.html>

Government of Canada. (2019). *Social determinants of health and health inequalities*.

Retrieved from: <https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health.html>

Healthcare Without Harm. (2019). Health care climate footprint report. Retrieved from:

<https://noharm-uscanada.org/ClimateFootprintReport>

Indigenous and Northern Affairs Canada. (2019). *Climate change in Indigenous and Northern communities*. Retrieved from: <https://indigenouspeoplesatlasofcanada.ca/article/climate-climate-change/>

International Council of Nurses [ICN]. (2018). Nurses, climate change and health. Retrieved

from: [https://www.icn.ch/sites/default/files/inline-files/PS\\_E\\_Nurses\\_climate%20change\\_health.pdf](https://www.icn.ch/sites/default/files/inline-files/PS_E_Nurses_climate%20change_health.pdf)

Kann, D., Houp, W., Jones, J., & O'Key, S. (2019). *The most effective ways to curb climate*

*change might surprise you.* Retrieved from:

[https://www.cnn.com/interactive/2019/04/specials/climate-change-solutions-quiz/?fbclid=IwAR2kx0x8J\\_dISYr3ECh8yEegQGj39f9OVsfK9mbf94NJpMEWkJD\\_xWPuEU](https://www.cnn.com/interactive/2019/04/specials/climate-change-solutions-quiz/?fbclid=IwAR2kx0x8J_dISYr3ECh8yEegQGj39f9OVsfK9mbf94NJpMEWkJD_xWPuEU)

Martin, W. & Vold, L. (2019). *Climate change and health: It's time for nurses to act.* Retrieved from: [https://nursesunions.ca/wp-content/uploads/2019/05/CFNU\\_climatechange-web.pdf](https://nursesunions.ca/wp-content/uploads/2019/05/CFNU_climatechange-web.pdf)

McMichael, A. J. (2013). Globalization, climate change, and human health. *The New England Journal of Medicine* 368(14), p.1335-43. doi: 10.1056/NEJMra1109341

nextGenU.org. (2019). *Climate change and health: Course home page.* Retrieved from: <https://nextgenu.org/course/view.php?id=237#section-2>

Ogden, N. H. & Gachon, P. (2019). Climate change and infectious diseases: What can we expect? *Canada Communicable Disease Report* 45(4), p. 76-80.  
<https://doi.org/10.14745/ccdr.v45i04a01>

Planetary Health Alliance [PHA]. (2019). *Planetary health education.* Retrieved from: <https://www.planetaryhealthalliance.org/education>

Schenk, E. (2019). *Environmental stewardship in healthcare: A nursing perspective* [Webinar slides]. Retrieved from: <https://play.library.utoronto.ca/9ikCAnBqZIFT>

TEDx Talks (producer), Howard, C. (speaker). (2018). *Healthy planet, healthy people.* Retrieved from: <https://www.youtube.com/watch?v=FgIYaklWOK4>

The Anthropocene Project. (2018). *Anthropocene: The human epoch (The Documentary).* Retrieved from: <https://theanthropocene.org/film/>

The Centre for Sustainable Healthcare [CSH]. (2018). *Simulation exercises teaching clinical*

*skills and knowledge of the health effects of climate change*. Retrieved from:  
<https://networks.sustainablehealthcare.org.uk/networks/sustainable-healthcare-education/simulation-exercises-teaching-clinical-skills-and>

Waddington, K. (2016). Starting a green team: The catalyst to climate change resiliency. *Green Teams and Beyond* (November). Retrieved from: [https://greenhealthcare.ca/wp-content/uploads/2015/05/Green-Teams-GTA\\_November\\_2016\\_proof3.pdf](https://greenhealthcare.ca/wp-content/uploads/2015/05/Green-Teams-GTA_November_2016_proof3.pdf)

Wiley, E. (2019). The unseen impacts of climate change on mental health. *BC Medical Journal* 61(4), p. 180, 188. Retrieved from: <https://www.bcmj.org/cohp/unseen-impacts-climate-change-mental-health>

World Health Organization [WHO]. (2015). *Climate change and health: Training modules*. Retrieved from:  
<https://files.visura.co/users/12837/b1fa9baced04231eb7d121710c601efe.pdf>