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This summary of conceptual frameworks and their potential application to environmental public health practice aims to guide managers and directors wishing to incorporate a health equity lens into their organizational programming, and provides a theoretical basis to different approaches to health equity action. It introduces the major conceptual frameworks that can guide policy and program development, and outlines some tools that can be used to put those concepts to practice.



## Conceptual frameworks to guide equity-integrated EPH

Although more theoretical than practice-oriented, conceptual frameworks can help inform areas for potential intervention and may be used to guide strategic planning processes, high-level policies, and organizational service plans.



**Environmental justice** is a rights-based framework that responds to disproportionate exposure to environmental risks among vulnerable populations or in geographic areas, as well as on equal rights to environmental protection.<sup>1</sup> Although more frequently used in the United States to address race and socioeconomic injustices, the concept can apply to any environmental health equity scenario.

Environmental justice can be operationalized through **high level policy change** that addresses systematic disparities and empowers vulnerable populations<sup>2</sup>, particularly where policies may have unintentionally led to systematic marginalization or where there are barriers to accessing healthy environmental amenities.<sup>3</sup> **Participatory research** approaches that engage local communities can help identify, analyse, and report on environmental health issues.<sup>3</sup>



**Healthy public policy** is a health promotion framework aimed at creating supportive environments that enable all people to make healthy choices. Healthy public policy recognizes that the choices made by individuals, as well as public, private, and commercial entities, are influenced by public policy. The main goal of healthy public policy is to create conditions that support individuals and corporations to make healthier choices, i.e., to make healthy choices easy and damaging choices more difficult.<sup>4-6</sup>

One way to implement healthy public policy is through a **Health in All Policies (HiAP)** approach. Recognizing that all sectors – not just health – influence health status and health-related behaviours, HiAP applies a health lens to all public policy, regardless of the sector or portfolio from which it emerges. HiAP uses a whole-of-government approach to reduce health inequities. Based on the assumption that healthy populations are productive and prosperous, HiAP advocates for intersectoral action between government departments as a key strategy to consider the health impacts of a diverse set of portfolios.



**Healthy places** frameworks consider the natural and built environments in which people live, work, learn, and play as important determinants of health.<sup>9</sup> The Healthy Communities approach emerged during the creation of the Ottawa Charter for Health Promotion in the 1980s. It focuses on the broad determinants of health and incorporates equity within its core values.<sup>10</sup>

The **Healthy Communities** (www.bchealthycommunities.ca) movement is active in BC and has guided actions of local governments and health authorities to support health equity. This approach can be used by healthy built environment teams operating at the health authority level as they encourage more health-supportive environments within their local communities.



**Ecological frameworks** recognize the complexity of health inequities by incorporating a range of environmental factors that influence health into a single model. Ecological frameworks use systems thinking to consider complex interactions between organisms and their environments. The related concept of sustainable development suggests that economic, environmental, and social policies need to be integrated in all development processes.

There are many frameworks that examine how interactions between the health of humans, animals, society, and the built and natural physical environments. **Human ecology,** for example, explores the relationships between humans and their environments, including how social and physical environments influence health.<sup>11</sup> **OneHealth** considers the interactions between human health and animal health.<sup>12</sup> **Ecosystem approaches to health,** or "eco-health", focus on the complex connections between human health, ecosystem sustainability, social determinants, and environmental health.<sup>13</sup> **Ecological public health** promotes consideration of the complex and interconnected biological, social, and cultural aspects of both human and ecosystem health.<sup>14</sup> **Sustainable Development Goals**, which advocate for economic, environmental, and social balance, are being used in healthy community planning.<sup>15</sup>

#### TOOLS TO MOVE FROM CONCEPT TO PRACTICE

Below is a selection of specific tools that may help to operationalize the equity-related concepts discussed above. These can be used alone or in combination.





**Health Impact Assessment (HIA)** is a method used to assess the population health consequences of programs, policies, or other initiatives. It includes equity as a core value to examine the distribution of impacts within a population. HIA incorporates social, economic, environmental, and physical health impacts.<sup>16-18</sup>

In general, HIA is based on five main steps:

- (1) screening of potential positive or negative effects
- (2) scoping of methods to measure health impacts
- (3) appraisal and assessment of impacts
- (4) reporting of HIA findings
- (5) monitoring of actual impacts<sup>17,19,20</sup>

Environmental health practitioners can identify appropriate environmental health indicators, which form an essential component of effective HIA.<sup>21</sup>

When used to support policy development, HIA can contribute to **healthy public policy** or **HiAP** approaches. For example, practitioners can contribute environmental health expertise to social housing strategies and housing developments or identify health-related indicators to measure health impacts of environmental change.

2



**Geographic and spatial analysis** borrows from the fields of geography and community planning to offer methods that can document and analyse health equity considerations such as spatial disparities or access to health-supportive services and environments.

Geographic Information Systems (GIS) analyses, mapping, and other spatial tools can be used to highlight disproportionate distribution of environmental hazards and amenities<sup>22-24</sup>, as well as to identify vulnerable populations.<sup>25</sup> Healthy built environment (HBE) approaches are used by BC health authorities to assess and advocate for healthier spaces and communities (e.g., spatial access to healthy food, green space, or active transportation networks).<sup>26</sup>

Geographic and spatial tools can play a key role in healthy places or **healthy communities** approaches. For example, practitioners can collaborate with local governments and planners to highlight health risks and benefits and promote healthier, more equitable communities.

3

**Participatory approaches** offer a way to democratize research, consultation, or governance processes by directly engaging communities and collaborating to build and use knowledge that can support environmental health equity.



Community-based research, local knowledge, and consideration of local context can be valuable to identifying and responding to health inequities related to the environment.<sup>24,27-30</sup>

Participatory approaches may be particularly useful for **HBE** or **HIA** work. Frontline staff's regular interactions with community members might be leveraged to identify inequities and potential solutions.





**Public health champions** are "charismatic advocate[s] of a belief, practice, program, policy and/or technology".<sup>31</sup> These individual practitioners can drive innovation by supporting the spread of new ideas and the implementation of innovative practices.<sup>31,32</sup>

Public health champions express enthusiasm, are persistent in the face of barriers, and involve the right people to succeed in taking action on new ideas.

**Practitioner champions** can engage management to consider new ideas and help motivate colleagues to take action related to new concepts such as health equity.<sup>31,32</sup> **Executive champions** who push major changes in program and policy direction are valuable facilitators to organizational change related to environmental health equity.<sup>33</sup> These champions can spread awareness of and enthusiasm for the benefits of integrating an equity lens to environmental public health practice.

#### References

- 1. Mohai P, Pellow D, Roberts JT. Environmental justice. Annual Review of Environment and Resources. 2009;34(1):405-30. Available from: http://www.annualreviews.org/doi/abs/10.1146/annurev-environ-082508-094348.
- 2. Brulle RJ, Pellow DN. Environmental justice: human health and environmental inequalities. Annual Review of Public Health. 2006;27(1):103-24. Available from: http://www.annualreviews.org/doi/abs/10.1146/annurev.publhealth.27.021405.102124.
- 3. Masuda JR, Poland B, Baxter J. Reaching for environmental health justice: Canadian experiences for a comprehensive research, policy and advocacy agenda in health promotion. Health Promotion International. 2010;25(4):453-63. Available from: http://heapro.oxfordjournals.org/content/25/4/453.full.pdf.
- 4. Milio N. Promoting Health Through Public Policy. Philadephia: FA Davis; 1981.
- 5. Milio N. Making healthy public policy; developing the science by learning the art: An ecological framework for policy studies. Health Promotion International. 1987;2(3):263-74.
- 6. Milio N. Glossary: Healthy public policy. Journal of Epidemiology & Community Health. 2001;55(9):622-3. Available from: http://jech.bmj.com/content/55/9/622.full.pdf.



- 7. Kickbusch I, Buckett K. Implementing health in all policies: Adelaide 2010. Adelaide: Department of Health, Government of South Australia; 2010.
- 8. Public Health Agency of Canada, WHO Commission on the Social Determinants of Health, Regional Network for Equity in Health in East and Southern Africa. Crossing Sectors: Experiences in Intersectoral Action, Public Policy and Health. Ottawa: Public Health Agency of Canada; 2007.
- 9. Frumkin H. Healthy places: exploring the evidence. American Journal of Public Health. 2003;93(9):1451-6. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447992/pdf/0931451.pdf.
- 10. Organization WH. Health Promotion Glossary. Geneva: World Health Organization; 1998. Available from: http://www.who.int/healthpromotion/about/HPG/en/.
- 11. Parkes M, Panelli R, Weinstein P. Converging paradigms for environmental health theory and practice. Environmental Health Perspectives. 2003;111(5):669-75. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241473/pdf/ehp0111-000669.pdf.
- 12. Centers for Disease Control and Prevention. One Health. Atlanta, GA: Centers for Disease Control and Prevention; 2013 [cited 2016 August 15]; Available from: http://www.cdc.gov/onehealth/index.html.
- 13. Webb JC, Mergler D, Parkes MW, Saint-Charles J, Spiegel J, Waltner-Toews D, et al. Tools for thoughtful action: the role of ecosystem approaches to health in enhancing public health. Canadian Journal of Public Health. 2010;101(6):439-41.
- 14. Lang T, Rayner G. Ecological public health: The 21st century's big idea? An essay by Tim Lang and Geof Rayner. BMJ. 2012;345:e5466-e. Available from: http://www.bmj.com/content/bmj/345/bmj.e5466.full.pdf.
- 15. Canadian Institute of Planners, HB Lanarc. Healthy communities practice guide; n.d. Available from: https://www.cip-icu.ca/Files/Healthy-Communities/CIP-Healthy-Communities-Practice-Guide FINAL lowre.aspx.
- 16. Harris P, Harris-Roxas B. Assessment of human health and wellbeing in project environmental assessment. In: Bhattacharya J, editor. Kolkatta: Wide Publishing; 2010. p. 357-79.
- 17. Harris P, Harris-Roxas B, Harris E, Kemp L. Health Impact Assessment: A Practical Guide: Centre for Health Equity Training, Research and Evaluation (CHETRE); part of the UNSW Research Centre for Primary Health Care and Equity, UNSW; 2007 Nov 12.
- 18. Pope J, Bond A, Morrison-Saunders A, Retief F. Advancing the theory and practice of impact assessment: Setting the research agenda. Environmental Impact Assessment Review. 2013;41(C):1-9. Available from: http://dx.doi.org/10.1016/j.eiar.2013.01.008.
- 19. Hebert KA, Wendel AM, Kennedy SK, Dannenberg AL. Health impact assessment: A comparison of 45 local, national, and international guidelines. Environmental Impact Assessment Review. 2012;34(C):74-82. Available from: http://www.sciencedirect.com/science/article/pii/S0195925512000042.
- 20. National Collaborating Centre for Healthy Public Policy. Introduction to HIA. Montreal: Institut national de sante publique Quebec; 2009. Available from: http://www.ncchpp.ca/133/publications.ccnpps?id\_article=302.
- 21. Jakubowski B, Frumkin H. Environmental metrics for community health improvement. Preventing Chronic Disease. 2010;4:1-10.
- 22. Lyseen AK, Nøhr C, Sørensen EM, Gudes O, Geraghty EM, Shaw NT, et al. A review and framework for categorizing current research and development in health related Geographical Information Systems (GIS) studies. IMIA Yearbook of Medical Informatics. 2014;9(1):110-24. Available from: http://www.schattauer.de/de/magazine/uebersicht/zeitschriften-a-z/imia-yearbook/archive/issue/1973/manuscript/22372/download.html.

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- Equity-Integrated
- 23. Nykiforuk CIJ, Flaman LM. Geographic Information Systems (GIS) for health promotion and public health: A review. Health Promotion Practice. 2011;12(1):63-73. Available from: http://hpp.sagepub.com/content/12/1/63.
- 24. Nykiforuk CIJ, Schopflocher D, Vallianatos H, Spence JC, Raine KD, Plotnikoff RC, et al. Community health and the built environment: examining place in a Canadian chronic disease prevention project. Health Promotion International. 2012;28(2):257-68. Available from: http://heapro.oxfordjournals.org/content/28/2/257.full.pdf.
- 25. Chakraborty J, Maantay JA, Brender JD. Disproportionate proximity to environmental health hazards: Methods, models, and measurement. American Journal of Public Health. 2011;101(S1):S27-S36.
- 26. Provincial Health Services Authority. Healthy built environment linkages: A toolkit for design, planning, health. Vancouver, BC: Provincial Health Services Authority, Population and Public Health; 2014. Available from: http://www.phsa.ca/Documents/ linkagestoolkitrevisedoct16\_2014\_full.pdf.
- 27. Scammell MK, Senier L, Darrah-Okike J, Brown P, Santos S. Tangible evidence, trust and power: Public perceptions of community environmental health studies. Social Science & Science & Application (2009);68(1):143-53. Available from: http://www.sciencedirect.com/science/ article/pii/S0277953608005236.
- 28. Nichols MS, Reynolds RC, Waters E, Gill T, King L, Swinburn BA, et al. Community-based efforts to prevent obesity: Australia-wide survey of projects. Health Promotion Journal of Australia. 2013;24(2):111-7. Available from: http://www.publish.csiro.au/?act=view\_ file&file\_id=HE13001.pdf.
- 29. Corburn J. Bringing local knowledge into environmental decision making: improving urban planning for communities at risk. Journal of Planning Education and Research. 2003;22(4):420-33. Available from: http://jpe.sagepub.com/content/22/4/420.
- 30. Corburn J. Urban planning and health disparities: Implications for research and practice. Planning Practice and Research. 2005;20(2):111-26. Available from: http://www.tandfonline.com/doi/abs/10.1080/02697450500414652.
- 31. National Collaborating Centre for Methods and Tools. Engage in public health champions to garner support for innovations Hamilton, ON: McMaster University; 2010: Available from: http://www.nccmt.ca/resources/search/91.
- 32. National Collaborating Centre for Methods and Tools. Identifying champions to promote innovation: A champion behaviour measure Hamilton, ON: McMaster University; 2005: Available from: http://www.nccmt.ca/resources/search/228.
- 33. Keefe A. Environmental scan of policy levers for equity-integrated environmental public health practice. Vancouver, BC: BC Centre for Disease Control; 2016 Available from:

www.bccdc.ca/health-professionals/professional-resources/health-equity-environmental-health/equity-and-eph-handbook



