

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



Xie, E; de Barros, EF; Abelson, A; Stein, AT; Haines, A (2018)
Challenges and opportunities in planetary health for primary care
providers. *The lancet Planetary health*, 2 (5). e185-e187. ISSN
2542-5196 DOI: [https://doi.org/10.1016/S2542-5196\(18\)30055-X](https://doi.org/10.1016/S2542-5196(18)30055-X)

Downloaded from: <http://researchonline.lshtm.ac.uk/4647603/>

DOI: [10.1016/S2542-5196\(18\)30055-X](https://doi.org/10.1016/S2542-5196(18)30055-X)

Usage Guidelines

Please refer to usage guidelines at <http://researchonline.lshtm.ac.uk/policies.html> or alternatively contact researchonline@lshtm.ac.uk.

Available under license: <http://creativecommons.org/licenses/by-nc-nd/2.5/>

Challenges and opportunities in planetary health for primary care providers



Primary care providers (PCPs) are trusted to provide a person-centred, comprehensive, and integrated response to health challenges. Through preventive health measures, PCPs also have a responsibility to strengthen the resilience of the communities they serve. Many environmental alterations, including climate change, air pollution, biodiversity loss, freshwater depletion, land use change, and exposures to toxic chemicals, threaten the advances in human health experienced in the past decades. PCPs can be instrumental in helping to address some of the causes and consequences of these environmental alterations.¹ Regarding climate change, for example, leadership and action by PCPs can enhance existing efforts to mitigate and adapt to diverse effects, producing many benefits for patients, health-care systems, and planetary health in general.

The health effects of climate change can be categorised as direct (eg, heat stroke), indirect (eg, mental illness after experiencing floods), or mediated through societal systems (eg, population displacement after drought or conflict).^{2,3} Social determinants of health affect the

vulnerability of populations to climate change and their capacity to adapt. Policies that address these determinants and the drivers of climate change span all sectors, including transportation, energy, agriculture, and the economy.¹

PCPs can exert influence through their social capital, to support favourable policies and create health co-benefits, with evidence showing that PCPs could earn more trust from the general public than public health experts or government agencies.^{4,5} Moreover, PCPs are often opinion leaders and advocates for evidence-based interventions, and they are widely distributed and connected to their communities.

Health-related interventions with environmental co-benefits can be provided by PCPs across the spectrum of climate change causes and effects (figure). We divide these actions into four categories that encompass the breadth of practice of PCPs and reflect the diversity of roles that are involved.

Aside from treating illness, PCPs can have a major role in health care, promotion, and prevention. Aside from

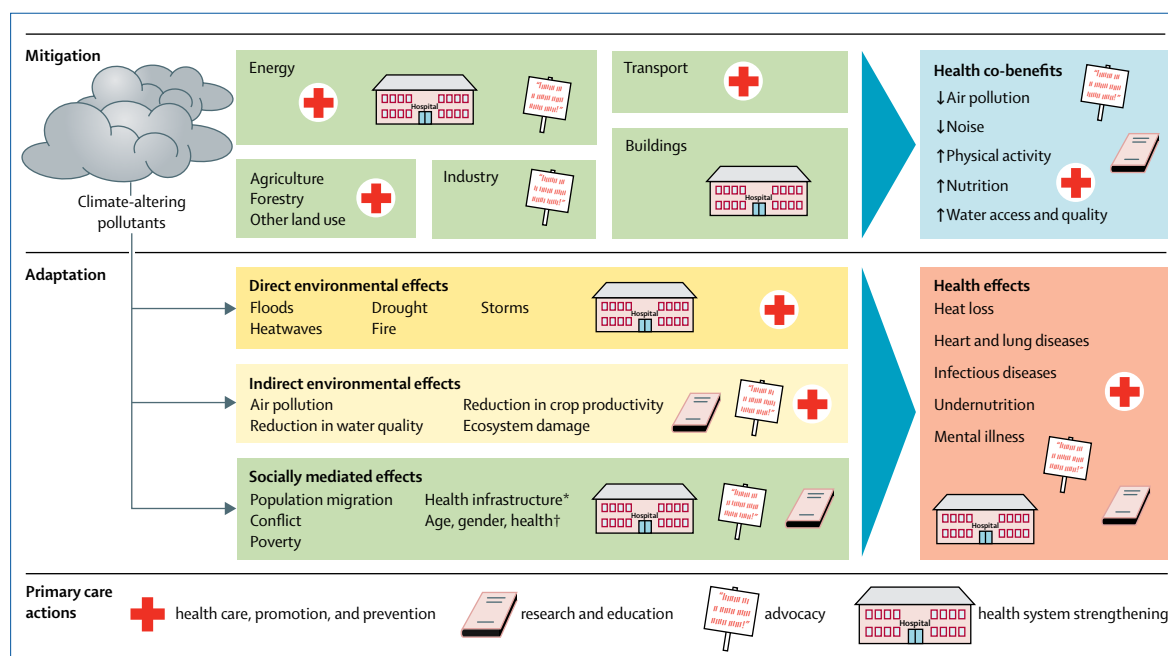


Figure: Framework for primary care actions to create health co-benefits, and mitigate or adapt to the health effects of climate change
 CAPs=climate-altering pollutants. Adapted from several studies.^{2,5,6} *For example, building design, distance from target populations, and access to transport.
 †For example, chronic illness and elderly populations.

direct care for illnesses, PCPs can make recommendations to individuals for changes in behaviour that have environmental co-benefits. For example, they can recommend increasing physical activity by shifting from motorised to active transport, healthier diets with low environmental impact including little or no red meat and high fruit and vegetable intake, and family planning. With established disease, PCPs may adjust therapies to adapt to environmental stress. For instance, anticipatory guidance and modification of medications (ie, modification of the drug course, dosage, or medication itself) is available to elderly patients during heatwaves. Additionally, since PCPs are often the first to encounter disease, they serve an important surveillance function for vector-borne and other infectious diseases, as suggested by a comparison of neighbouring cities in Brazil.⁷ Finally, after climate-related events (eg, floods and storms), PCPs can provide support to reduce physical and mental health effects in affected individuals.⁸

PCPs can also have a role in health system strengthening. They represent a large portion of the worldwide human resource for health care, so they should have an input into the workforce planning for the anticipated worsening of climate-sensitive conditions, such as respiratory illnesses or emerging zoonotic diseases arising from land use and other environmental changes.⁹ Their connection to the communities they serve allows PCPs to involve social and environmental determinants of health, instead of taking a purely biomedical approach, to care or increase preparedness for vulnerable populations, for example elderly and homeless people, people with low income, and coastal or drought-prone populations. Moreover, the resilience of the primary health-care infrastructure can be increased to mitigate the health effects of climate change, for example by reducing emissions of climate-altering pollutants through improved energy efficiency or low-carbon sources of energy.¹⁰

PCPs can help introduce planetary health concepts in education and research using training curricula and professional educational materials.¹⁰ Patients can receive education on public health education directly from PCPs, and the educational material can be developed with primary care input. In some contexts, policy-makers rely on the expert interpretation of PCPs to inform decisions through briefs, deputations, or other means.¹¹ In research and academia, PCPs can recommend research priorities or engage in investigations regarding population health,

such as a recent evaluation of air quality alerts.¹² Climate changes and other environmental changes can be acknowledged as contributory factors to individual clinical cases or to changes in population health (eg, changes relating to extended allergy seasons, or to the effect of heat stress on risk of death in elderly people).

Finally, PCPs can have an important role in advocacy. Health professionals can take part in the social marketing of health information related to environmental change, and advocate for adaptation and mitigation actions.⁴ PCPs can also prompt governing bodies to take actions that affect the climate and the environment by highlighting the associated health benefits.¹ A divestment from fossil fuels and support for well designed carbon taxes, for instance, could improve overall health and reduce income inequality.¹³ At the professional level, organisations such as the World Organisation of Family Doctors are taking leadership in this form of advocacy.¹⁴ At the local level, PCPs can help lead community intersectoral cooperation, join community action groups, or behave as role models, for example by leading waste reduction and recycling or active travel campaigns.

Our framework provides clear parallels between changes in health behaviours (eg, smoking, exercise, nutrition) and climate change adaptation and mitigation strategies. As experts in these health behaviours, PCPs can also serve the community as strong promoters of actions that encourage environmental change. The complex and multi-faceted health effects of environmental change require the unique ability of PCPs to combine their legitimacy as knowledge experts with a close professional relationship to the people they treat. We are confident that PCPs can recognise and potentiate their current position as the foundation for health systems by using evidence to protect planetary health.

**Edward Xie, Enrique Falceto de Barros, Alan Abelsohn, Airton Tetelbom Stein, Andy Haines*

RFE Building, Toronto General Hospital, Toronto, ON M5G 2C4, Canada (EX); World Organization of Family Doctors, Santa Maria do Herval, Rio Grande do Sul, Brazil (EFdB); University of Toronto, Toronto, Canada (AA); Federal University of Health Sciences of Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil (AT); and London School of Hygiene and Tropical Medicine, London, UK (AH) edward.xie@utoronto.ca

We declare no competing interests.

Copyright © 2018 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

- 1 Haines A, McMichael AJ, Smith KR, et al. Public health benefits of strategies to reduce greenhouse-gas emissions: overview and implications for policy makers. *Lancet* 2009; **374**: 2104–14.
- 2 Smith KR, Woodward A, Campbell-Lendrum D, et al. Human health: impacts, adaptation, and co-benefits. In: Field CB, Barros VR, Dokken DJ, et al, eds. *Climate change 2014: impacts, adaptation, and vulnerability. Part A: global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK, and New York, USA: Cambridge University Press, 2014: 709–54.
- 3 Kelley CP, Mohtadi S, Cane MA, Seager R, Kushnir Y. Climate change in the Fertile Crescent and implications of the recent Syrian drought. *Proc Natl Acad Sci USA* 2015; **112**: 3241–46.
- 4 Walker R, Hassall J, Chaplin S, Congues J, Bajayo R, Mason W. Health promotion interventions to address climate change using a primary health care approach: a literature review. *Health Promot J Austr* 2011; **22**: S6–S12.
- 5 Maibach EW, Kreslake JM, Roser-Renouf C, Rosenthal S, Feinberg G, Leiserowitz AA. Do Americans understand that global warming is harmful to human health? Evidence from a national survey. *Ann Glob Health* 2015; **81**: 396–409.
- 6 Roriz-Cruz M, Sprinz E, Rosset I, Goldani L, Teixeira MG. Dengue and primary care: a tale of two cities. *Bull World Health Organ* 2010; **88**: 244–45.
- 7 Nahar N, Blomstedt Y, Wu B, Kandarina I, Trisnantoro L, Kinsman J. Increasing the provision of mental health care for vulnerable, disaster-affected people in Bangladesh. *BMC Public Health* 2014; **14**: 708.
- 8 Blashki G, McMichael T, Karoly D. Climate change and primary health care. *Aust Fam Physician* 2007; **36**: 986–89.
- 9 Nichols A, Richardson J. Climate change, health and sustainability: a brief survey of primary care trusts in the south west of England. *Perspect Public Health* 2011; **131**: 82–84.
- 10 Watts N, Adger WN, Ayeb-Karlsson S, et al. The *Lancet* Countdown: tracking progress on health and climate change. *Lancet* 2017; **389**: 1151–164.
- 11 Chen H, Li Q, Kaufman JS, et al. Effect of air quality alerts on human health: a regression discontinuity analysis in Toronto, Canada. *Lancet Planet Health* 2018; **2**: e19–e26.
- 12 Cuevas S, Haines A. Health benefits of a carbon tax. *Lancet* 2016; **387**: 7–9.
- 13 World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians Europe. Planetary Health & Primary Health Care. 2017. <http://www.woncaeurope.org/sites/default/files/news/RC67 - Statement on Planetary Health.pdf> (accessed Feb 26, 2018).
- 14 Watts N, Adger WN, Agnolucci P, et al. Health and climate change: policy responses to protect public health. *Lancet* 2015; **386**: 1861–914.