



Public health in the 21st century

Public health in the Anthropocene

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Watch an introduction to the Anthropocene, titled “Welcome to the Anthropocene”:
<https://vimeo.com/39048998>

Dr. Trevor Hancock is an internationally recognized public health physician. He was one of the creators of the global Healthy Cities and Communities movement, and he cofounded both the Canadian Association of Physicians for the Environment and the Canadian Coalition for Green Health Care. He’s a senior editor for the Canadian Journal of Public Health, on the editorial board of Cities & Health and a columnist for a daily newspaper in Victoria, BC. The Canadian Public Health Association recently recognized his outstanding contributions in the broad field of public health with the RD Defries Award.

Public health seeks to understand and address the broad determinants of health; in recent years, much of the discourse has focused on the social determinants. Ultimately, though, the most fundamental determinants of our health are not social, but ecological.

In May 2015, the Canadian Public Health Association released both the Discussion Paper *Global Change and Public Health: Addressing the Ecological Determinants of Health* (www.cpha.ca/discussion-paper-ecological-determinants-health) and the *Report in Brief* (www.cpha.ca/sites/default/files/assets/policy/edh-brief.pdf). These described air, water, food, materials, fuels, protection from solar ultraviolet rays, a stable climate and other ecosystem “goods and services” as the “ecological determinants of health.”

For the past 11 000 years, we have enjoyed a relatively stable and warm climate, and it is during this period — the Holocene — that human civilization has evolved. But the Holocene is ending and we are entering the Anthropocene — so called because humans have become a force to rival nature; we will show up in the geological record as a distinct stratum. (An online video titled “Welcome to the Anthropocene” offers a short and powerful introduction to the Anthropocene [<https://vimeo.com/39048998>].)

We are changing the Earth’s natural systems, on which we depend, at a scale and with a rapidity that threatens their stability. This has happened very swiftly, especially since about 1950, and is a phenomenon dubbed “The Great Acceleration.” I was born in 1948. In my lifetime, the world’s population has nearly tripled, the global real gross domestic product has increased 11-fold, primary energy use and large dams have both increased more than 5-fold, the number of vehicles has increased more than 7-fold and fertilizer consumption has increased by a factor of 14.

The environmental impacts are equally dramatic; atmospheric carbon dioxide levels have increased 26% in my lifetime and methane levels 60%, while ocean acidity has increased 18% and fish capture has more than quadrupled. Our ecological footprint exceeded the planet’s biocapacity in about 1970, and we have triggered a sixth Great Extinction. Second only to all-out

nuclear war, these changes are the most important threat to the health of the population we face in the 21st century, globally and in Canada.

Our Canadian Public Health Association report, focusing on the role of public health — and a similar report that followed, from the Rockefeller Foundation–*Lancet* Commission on Planetary Health — sought to identify the health implications of the Anthropocene for this and future generations, and to suggest what we should do in response to these threats to human civilization.

We began by pointing to the obvious links between the ecological and the social determinants; changes in our social and economic conditions, in the name of development and progress, are driving these ecological changes, which in turn feed back negatively on our socioeconomic situation.

Thus, public health must question the very idea of economic growth as the focus of development and governance, and instead call for a form of development that puts the maximization of human development at the centre, while being socially just and ecologically sustainable. Health protection means questioning — and indeed challenging — public policies and corporate actions that contribute to ecological harm. In particular, this means challenging the fossil fuel industry, which some have likened to the tobacco industry in terms of both its health impact and its tactics.

There are many practical actions that public health must take, beginning with educating public health and other health professionals about ecological determinants, and studying and reporting on these determinants and their health impacts. We also need to support existing efforts to ensure the often environmentally unfriendly health care system, which comprises 11% of our economy, becomes “green.”

But we also have to help people find hope by working with them, and with communities, organizations, the private sector and governments, to create an alternative, more sustainable, healthy and just way of life. This is not unlike the challenge public health faced in the 19th-century’s industrial cities, but now on a global scale. It is perhaps the greatest challenge public health has ever faced, and one I will explore further in my seventh and final column.