

# EDITORIALS

## Climate change and human survival

The IPCC report shows the need for “radical and transformative change”

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Next week the Intergovernmental Panel on Climate Change (IPCC) will publish its report on the impacts of global warming. Building on its recent update of the physical science of global warming,<sup>1</sup> the IPCC’s new report should leave the world in no doubt about the scale and immediacy of the threat to human survival, health, and wellbeing.

The IPCC has already concluded that it is “virtually certain that human influence has warmed the global climate system” and that it is “extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010” is anthropogenic.<sup>1</sup> Its new report outlines the future threats of further global warming: increased scarcity of food and fresh water; extreme weather events; rise in sea level; loss of biodiversity; areas becoming uninhabitable; and mass human migration, conflict and violence. Leaked drafts talk of hundreds of millions displaced in a little over 80 years. This month, the American Association for the Advancement of Science (AAAS) added its voice: “the well being of people of all nations [is] at risk.”<sup>2</sup> Such comments reaffirm the conclusions of the *Lancet*/UCL Commission: that climate change is “the greatest threat to human health of the 21st century.”<sup>3</sup>

The changes seen so far—massive arctic ice loss and extreme weather events, for example—have resulted from an estimated average temperature rise of 0.89°C since 1901. Further changes will depend on how much we continue to heat the planet. The release of just another 275 gigatonnes of carbon dioxide would probably commit us to a temperature rise of at least 2°C—an amount that could be emitted in less than eight years.<sup>4</sup>

“Business as usual” will increase carbon dioxide concentrations from the current level of 400 parts per million (ppm), which is a 40% increase from 280 ppm 150 years ago, to 936 ppm by 2100, with a 50:50 chance that this will deliver global mean temperature rises of more than 4°C. It is now widely understood that such a rise is “incompatible with an organised global community.”<sup>5</sup>

The IPCC warns of “tipping points” in the earth’s system, which, if crossed, could lead to a catastrophic collapse of interlinked human and natural systems. The AAAS concludes that there is

now a “real chance of abrupt, unpredictable and potentially irreversible changes with highly damaging impacts on people around the globe.”<sup>2</sup>

And this week a report from the World Meteorological Office (WMO) confirmed that extreme weather events are accelerating. WMO secretary general Michel Jarraud said, “There is no standstill in global warming . . . The laws of physics are non-negotiable.”<sup>6</sup>

This is an emergency. Immediate and transformative action is needed at every level: individual, local, and national; personal, political, and financial. Countries must set aside differences and work together as a global community for the common good, and in a way that is equitable and sensitive to particular challenges of the poorest countries and most vulnerable communities.

What we all do matters, not least in how it influences others. Those who profess to care for the health of people perhaps have the greatest responsibility to act. And there are signs of action being taken. Within the health system, organisations and health facilities are reducing their carbon footprint. Barts Health NHS Trust has, for example, reduced its energy bill by 43% since 2009. The president of the World Bank, Jim Yong Kim, himself a public health physician, has called for divestment from fossil fuels and investment in green energy.<sup>7</sup> We should all respond.

Such action not only limits the threats of climate change, but could offer a health dividend, including potentially large financial savings for health systems. More active forms of transport and the consumption of less red meat will cut death and illness from cardiovascular disease, obesity, diabetes, and cancer. Less air pollution will cut the global burden of asthma, chronic obstructive pulmonary disease, cancer, and heart disease.<sup>3</sup> The IPCC has incorporated this new understanding into its latest report on impacts, and we can expect to see this message flowing into the World Health Organization’s plans for action, to be discussed at its climate conference in August.

So what can health professionals do? Firstly, we should push our own organisations (universities, hospitals, primary care providers, medical societies, drug and device companies) to

divest from fossil fuel industries completely and as quickly as possible, reinvest in renewable energy sources, and move to “renewable” energy suppliers. Secondly, we should each use whatever influence we have to change the minds and behaviour of others who are in positions of influence.

Thirdly, we need to build an alliance of medical and other health professionals to speak clearly to the public, the media, governments, and intergovernmental bodies to provide a strong and unified message—that climate change is real and is the result of human activity; that it is already affecting people around the world and is the greatest current threat to human health and survival; and that there are many positive and practical things we can do systematically and at scale to avert its worst effects.<sup>8</sup>

If we are to avoid catastrophic climate change and bequeath a sustainable planet worth living on, we must push, as individuals and as a profession, for a transformed, sustainable, and fair world.

For more information on what health professionals can do in support of the IPCC’s report and to learn more about the implications of the report for human health, visit: [www.climateandhealthalliance.org/resources/ipcc-resources](http://www.climateandhealthalliance.org/resources/ipcc-resources).

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- 1 Intergovernmental Panel on Climate Change. Working Group I contribution to the IPCC fifth assessment report climate change 2013: the physical science basis summary for policymakers. 2013. [www.ipcc.ch/report/ar5/wg1/#.UJ6rNI3vTo](http://www.ipcc.ch/report/ar5/wg1/#.UJ6rNI3vTo).
- 2 American Association for the Advancement of Science. What we know: the reality, risks, and response to climate change. 2014. <http://whatweknow.aaas.org/>.
- 3 UCL Institute for Global Health. UCL-Lancet Commission on managing the health effects of climate change. 2014. [www.ucl.ac.uk/igh/research/projects/all-projects/lancet-1](http://www.ucl.ac.uk/igh/research/projects/all-projects/lancet-1).
- 4 Meinshausen M, Meinshausen N, Hare W, Raper SCB, Frieler K, Knutti R, et al. Greenhouse-gas emission targets for limiting global warming to 2°C. *Nature* 2009;458:1158-62.
- 5 Anderson K, Bows A. Beyond “dangerous” climate change: emission scenarios for a new world. *Phil Trans R Soc A* 2011;369:20-44.
- 6 World Meteorological Office. WMO annual climate statement highlights extreme events. 2014. [www.wmo.int/pages/mediacentre/press\\_releases/pr\\_985\\_en.html](http://www.wmo.int/pages/mediacentre/press_releases/pr_985_en.html).
- 7 The World Bank. World Bank group president Jim Yong Kim remarks at Davos press conference. 2014. [www.worldbank.org/en/news/speech/2014/01/23/world-bank-group-president-jim-yong-kim-remarks-at-davos-press-conference](http://www.worldbank.org/en/news/speech/2014/01/23/world-bank-group-president-jim-yong-kim-remarks-at-davos-press-conference).
- 8 The Global Climate and Health Alliance. [www.climateandhealthalliance.org/](http://www.climateandhealthalliance.org/).

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