

Physicians, Climate Change and Human Health

The theme of the World Health Organisation (WHO) initiated 2008 *World Health Day*, held on 7 April 2008, was *Protecting Health from Climate Change*.¹ Communities and organisations around the world hosted activities to establish greater public awareness of the health consequences of the climate changes that we are experiencing. WHO has specifically put a great effort into increasing awareness of the effects of global warming and other climate related factors that impact on human health. We, as physicians, also have an important and potentially major role to play in this exercise.

In her World Health Day 2008 address, “The impact of climate change on human health”,² WHO Director-General, Dr. Margaret Chan, said, “The core concern is succinctly stated: climate change endangers health in fundamental ways. The warming of the planet will be gradual, but the effects of extreme weather events – more storms, floods, droughts and heatwaves - will be abrupt and acutely felt..... affecting some of the most fundamental determinants of health: air, water, food, shelter, and freedom from disease”. She also pointed out that while climate change is a global phenomenon, its consequences will not be evenly distributed. Certain populations are more susceptible than others e.g. children, the elderly and the infirm, and more so in developing countries. She drew attention to the fact that, “last year marked the turning point in the debate of climate change. The scientific evidence continues to mount that the climate is changing and human activities are the principal cause”.^{2,3}

The Secretary-General of the United Nations, Ban Ki-moon, in his World Health Day 2008 address,³ stated that “We need to give voice to this often overlooked reality, ensuring that protecting human health is anchored at the heart of the global climate change agenda.” He also pointed out that the impact will be most severe in poor countries e.g. by the year 2020, up to a quarter of a billion Africans will experience increased water stress and up to 50% drop in crop yields. Climate-related infectious diseases take their heaviest tolls on the most vulnerable, the children, the elderly and the infirm. We must do more to prepare for these challenges because climate change is real. It is accelerating and threatens all of us. Climate change will erode the foundations of health.

WHO has identified five major health consequences of climate changes:^{3,4} (i) The agricultural sector is extremely sensitive to climate variability. Rising temperatures and more frequent droughts and floods can compromise food security.⁵ (ii) More frequent extreme weather events mean more potential deaths and injuries caused by storms and floods. The most recent Cyclone Nargis in Myanmar,^{5,6} with over a hundred thousand deaths, is a typical example for this. Our own experience in Oman with Cyclone Gonu⁷ last year was evidence enough with scores of deaths from flooding wadis and thousands of citizens suffering from a lack of clean fresh water, albeit only temporarily because of prompt government action.⁸ (iii) Water is essential for hygiene, but in excess it will increase the burden of diarrhoeal diseases which are spread through contaminated water and food. These diseases are responsible for 1.8 million deaths each year and are the second leading infectious cause of childhood mortality.² (iv) Heatwaves increase morbidity and mortality mainly in the elderly with cardiovascular or respiratory disease. (v) Changing temperatures and patterns of rainfall are expected to alter the geographic distribution of insect vectors that spread infectious diseases such as malaria and dengue fever. In short, climate change can exacerbate problems that are already huge, largely concentrated in the developing world and already difficult to combat.

What can we, as *physicians*, do and what role can we play? As *clinicians*, we owe it to our patients to explain to them the dangers of extremes of temperatures and exposure. Estimates suggest that in 2003, during the European summer heat wave, approximately 70,000 more people died than would have been otherwise expected. It has been demonstrated that weather is associated with changes in birth rates and sperm counts, and with outbreaks

of pneumonia, influenza and bronchitis.⁹ Decreased humidity in some countries in winter leads to drying of nasal mucosa and respiratory passages with increased respiratory infections. As *family and community physicians*, we owe it to the community and the public, to explain the dangers of climate change and to explain that most of the climate change is the result of human activities.^{3,10-12} Global warming is not only made worse by greenhouse gases from industry, but all of us contribute to it by our daily habits. We also contribute to the change in climate by indiscriminate industrial logging and by cutting trees for fuel as in some communities. As *educator physicians*, we owe it to our students to explain the impact of changing climate on human health. Climate change brings new challenges to the control of infectious diseases. Seasonal changes in the availability of fresh water, regional drops in food production, and rising sea levels have the potential to force population displacement and increase the risks of civil conflict. As *physician administrators*, we owe to our community to ensure proper disposal of all wastes that may impact on the environment. We have to point out the need for clean air and unpolluted water. We also have to point out dangers of epidemics related to climate change such as the cholera outbreak in Bangladesh closely linked to flooding and unsafe water. Changing air and water temperatures and precipitation can also lead to increased infectious diseases among plants and animals through vector-borne and rodents, as well as to outbreaks of disease in coral reefs and trees overgrown with fungus.¹³ As *physician researchers*, the possibilities of contributing are only limited by our imagination. Physician researchers can contribute effectively to understanding the root causes as well as the effects of global warming and changing climate on individual patients and on the community.

As travellers in this space ship called Earth, we need to be very prudent as to how we use the resources vital to our health such as air, clean water and our atmosphere. We as physicians can play a relatively major role in reducing the negative impact of climate on human health and also have an impact on root causes.

Physicians and researchers in Oman and beyond need to review their resources and evaluate the possible ways that we can contribute. Let us all join in the spirit of this year's World Health Day and make a difference in human health. SQUMJ will help by publishing news of the efforts and results.



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