Climate Change impacts on Human Health

An American researcher recently reviewed the available scientific evidence of the effect of climate on diseases affecting humans. He notes that the potential for outbreaks of certain diseases will be increased with climate change. Nevertheless, he suggests that, by changing our sensitivity and even adaptive capacity, the impacts of climate mediated diseases could be mitigated.

Diseases such as H5N1 "bird flu" or foot and mouth disease are currently causing concern in many countries, including parts of Asia, Africa and Europe. Overall, transmissible diseases represent a serious risk to human health, contributing to about one third of all deaths occurring globally. In addition, climate change is believed to cause about 150,000 deaths every year worldwide, and by modifying ecosystems, it can create a health risk for humans.

In this context, an American researcher has recently reviewed the literature in order to explore the link between climate change and human health. He notes that disease is one example of the interaction between natural and human systems, which involve the environment, an agent (e.g. pathogen), a host (e.g. human) and a vector (e.g. insect, air). For example, increased humidity of an area is likely to increase the mosquito population and thereby the incidence of human disease.

The predicted climate change is likely to increase precipitation and temperatures and their variability, which in turn can be expected to increase the number of diseases. The authors note that there is a wide range of climate-mediated diseases or deaths, of which the most important are:

1. Heat wave related deaths: there are numerous examples of the dramatic effects of the 2003 summer heat waves in Europe when about 15,000 people died in France. The impacts of heat waves are exacerbated in urban areas.

2. Air pollution related diseases: climate change is predicted to increase the number and frequency of days with high-ozone and high particulate matter concentrations in the air. These particles are well-known for causing respiratory problems and premature deaths.

3. Aeroallergen-related diseases: the author highlights that the increased use of pesticides implies an increased concentration of pollens into the air, which can cause allergies.

4. Fungi and mold-related diseases: the disturbance of soil linked to climate change is predicted to increase the frequency of the respiratory diseases related to inhalation of fungal spores.

5. Water- and food-borne diseases: Scientists have shown that precipitation and temperature under predicted climate change increases the incidence of diseases such as cholera and cases of salmonella.

6. Influenza: there are numerous scientific hypotheses to explain the role of climate in the seasonality of influenza, but none have yet been shown to explain outbreaks from year to year.

7. Rodent-borne diseases: in a warmer and wetter climate, rodent populations are shown to develop more rapidly and thereby are more likely to transmit diseases to human beings.

8. Insect-transmitted diseases: under a changing climate, insect populations can shift and thus transmission of diseases is modified.

Overall, the researcher highlights that warmer and more extreme climate shifts are likely to alter disease patterns and can affect human health in several ways. Because disease has both natural and social components (e.g. human practice modifies the environment), the author suggests that it is possible to mitigate the impacts of diseases by changing our sensitivity and adaptive capacity.

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