

Climate change: One of the greatest threats to public health in the 21st century



The impact of climate change on human health and well-being has already been observed. Direct effects such as those related to heat, cold, floods, storms and solar ultraviolet radiation have been documented.^[1] Some vector-, food- and water-borne diseases and other infectious diseases influenced by ecosystems are likely to increase in incidence. Respiratory health is affected by near-surface ozone exposures, episodes of acute air pollution, and aero-allergens. Indirect health impacts also exist. For example, changes in agricultural production, and loss of crop yield and the nutritional value of food have detrimental effects on nutrition. Increasing ambient temperatures can lead to loss of work capacity and occupational health concerns. The impact on mental health, mass migration, conflict and violence associated with changes in climate should not be underestimated.

South Africa (SA) may be considered as one of the countries facing the greatest challenges regarding climate change and health from threats of rising sea levels to drought and flooding. Current projections suggest a higher rise in temperature in SA than the global average.^[2-4] This may lead to direct effects, including increased headaches, nausea, exhaustion, heat stroke and even mortality. In addition, atmospheric changes in air pollution may also be affected, which aggravate existing conditions of asthma and allergic rhinitis. Changes in health-support needs and services may be required, e.g. reduced availability and quality of water, and food security risks decreasing an individual's ability to cope with existing and emerging diseases. The increasing occurrence of extreme weather events, together with loss of property and family support, may cause anxiety, depression and stress. Such events may also cause damage to traffic infrastructure, leading to an increase in the incidence and severity of road traffic accidents, currently among the top five causes of premature death in the SA.

The deterioration of environmental conditions may lead to population displacement and immigration into SA from neighbouring southern African countries, resulting in increased pressure on services and local environmental conditions. Violence and interpersonal crime, already a major cause of morbidity and mortality in SA, may increase. Occupational climate health-related risks are a serious concern. The mining and farming sectors are particularly susceptible to the threat of warmer temperatures, leading to heat exhaustion, inability to work, and loss of productivity.

This month's CME aims to highlight some of the impacts of climate change on human health in SA. A collaborative review article^[6] gives an overview of the Fifth Assessment Report of Working Group II on Human health: Impacts, adaptation and co-benefits^[1] and considers the issues pertinent to SA. The complex HIV/AIDS disease burden and its vulnerability to a changing climate are outlined by Prof. Akin Abayomi and Maureen Cowan.^[7] In light of these expected health impacts, Dr Rebecca Garland^[8] discusses the steps taken by SA to

address the threats and risks of a changing climate on public health. Her article emphasises the need for action by all key stakeholders, including government agencies, healthcare professionals, researchers and community members to address effectively the challenges posed by climate change on public health. An article by Devin Bowles and Prof. Colin Butler^[9] considers the so-called 'tertiary' health effects of climate change, which are socially, politically and economically mediated. Examples include increased under-nutrition, migration, conflict and health system strain. Prof. Tord Kjellstrom and colleagues^[10] describe climate conditions in the workplace as occupational health hazards threatened by climate change.



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