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Document heading: Review Article

## Climate Change and Health

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Received: 15-09-2018 / Revised: 20-10-2018 / Accepted: 20-11-2018

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### Abstract

Climate change is a major problem caused by the increase in human activity leading to several direct and indirect impact on health. This article provides an overview of the current and projected climate change risks and impacts to mental health and provides recommendations for priority actions to address the mental health consequences of climate change.

**Keywords:** Climate change, health, Adaptation.

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### Introduction

Climate change is a major problem caused by the increase in human activity leading to several direct and indirect impact on health. An increase in carbon dioxide and other gases like methane, ozone, nitrous oxide, in the atmosphere is expected to increase the average global temperature by 1.5 degree to 4.5 degree Celsius.

These climate change will have wide ranging harmful effect including increase in heat-related mortality, dehydration, spread of infectious disease, malnutrition, and damage to public health infrastructure. Thus we should take appropriate measure to check climate change.

### Causes and Risk Factors

#### How Climate Change Affects Health

Climate change can affect human health directly (e.g. impacts on thermal stress, death/injury in floods and storms) and indirectly through changes in the ranges of disease vectors (e.g. mosquitoes) water born pathogens, water and air quality, food availability and quality. Global climate change is, therefore a newer challenge to on-going efforts to protect human health.

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### Vulnerable Population

- All populations will be affected by climate change, but some are more vulnerable than others. People living in small islands and other coastal regions megacities and mountainous and polar regions are particularly vulnerable.
- Children - in particular, those living in poor countries - are among the most vulnerable to the resulting health risks and will be exposed longer to the health consequences. The health effects are also expected to be more severe for elderly people and people with infirmities or pre-existing medical conditions.
- Areas with weak health infrastructure- mostly in developing countries-will be the least able to cope without assistance to prepare and respond.

### Impact of Climate Change on Health

Climate change affects the social and environmental determinants of health -clean air, safe drinking water, sufficient food and secure shelter. Between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress[1,2].

### Factors predisposing to health due to climate change include

- Extreme heat
- natural disasters and variable
- measuring the health effects
- rising sea level
- retracting glaciers
- food insecurity
- vector-borne disease
- other health effects

### Natural disasters and variable rainfall patterns

- ❖ Globally, the number of reported weather-related natural disasters has more than tripled since the 1960s. Every year, these disasters result in over 60,000 deaths, mainly in developing countries.
- ❖ Rising sea levels and increasingly extreme weather events will destroy homes, medical facilities and other essential services. People may be forced to move, which in turn heightens the risk of a range of health effects, from mental disorders to communicable disease.
- ❖ Increasingly variable rainfall patterns are likely to affect the supply of fresh water. A lack of safe water can compromise hygiene and increase the risk of diarrhoeal disease, which kills over 5,00,000 children aged under 5 years, every year.
- ❖ Floods contaminate fresh water supplies, heighten the risk of water-borne disease, and create breeding grounds for disease-carrying insects such as mosquitos and cause drowning and physical injuries, damage homes and disrupt the supply of medical health services.
- ❖ The increase in the prevalence of malnutrition and under-nutrition's, which currently cause 3.1 million deaths every year.
- ❖ Water scarcity already affects four of every 10 people. A lack of water and poor water quality can compromise hygiene and health.

### How Prepared are Our Health Care System?

While policy-makers and planners are turning a blind eye to climate risk indicators in city/ industrial planning, it is pertinent to note that even the health care system and institutions seem to be at a disadvantage when it comes to their ability to deal with the climate induce disaster. examples of Shrinagar flood of 2013 Chennai floods 2015 or the Mumbai rains of 2017 come to mind. one thing common in all these image is that the rains and floods left the hospital and health system in tatters resulting in loss of lives and higher risk to infection.

### How Should the Health Care System Be

Here are some useful tips for doctors and hospital administration to think and act up to keep their system prepared:

#### Natural Disaster

Flood Andcyclones engage in mapping vulnerable region and training first responders from the

community; a strong community support will help provide relief faster and better in an event of a disaster.

#### Infectious Disease

Engagein regular monitoring of spread of infectious disease and develop early warning system .conduct expanded surveillance activities in collaboration with communities. Develop better coordination between various specialization of medicine e.g. family practice , internal medicine, paediatric, geriatrics, and psychiatric etc.

#### Direct Impact

The weather has a direct impact on our health. if the overall climate becomes become warmer, there will be an increase in health problem. it is an anticipated that there will be an increase in the number of death due to greater frequency and severity of heat wave and other extreme weather events. an extreme rise in temperature will affect people living in the urban areas more than those in rural areas.

#### Indirect Impact

Indirectly, changes in weather pattern, can lead to ecological disturbances, changes in food production level, increase in the distribution of malaria, and other vector born diseases. Fluctuation in the climate especially in the temperature, precipitation and humidity can influence biological organisms and processes linked to the spread of infectious disease.

#### Disease Spread Due to Climate Change

- Renal stones
- Valley fever
- West Nile virus
- Malaria
- Dengue
- Typhoid
- Chikungunya
- Lyme disease
- Other tick-borne disease

#### Measure To Overcome Impact of Climate on Health Legislative Or Regulatory Measures

Integrated assessment of environmental economic and health impact of climate change. Need to set up coordinated funding to assess to implement appropriate adaptation. Need to develop a long term approach to reducing the risk of climate change.

#### Public Education and Communication

Increase awareness of links between climate change and health. Increased awareness of adaptation

education programme. Upgrade current education and communication programme.

### Surveillance and Monitoring

Monitoring of climate parameter, environmental changes, health impact, population changes.

### Health Intervention

Improve medical access for remote communities and vulnerable groups ex. elderly, obese and disable. Improve education and awareness of health. Understanding of the risk for the emergence of new, unfamiliar disease and health impact. better treatment facilities with provision for emergency service.

### Who Work Plan on Climate Change and Health

- ❖ Advocacy - To raise awareness that climate change is a fundamental threat to human health.
- ❖ Partnership - To coordinate with partner agencies within the UN system, an ensure that health is properly represented in the climate change agenda
- ❖ **Science and evidence** - to coordinate reviews of the scientific evidence on the links between climate change and health, and develop a global research agenda.
- ❖ Health System Strengthening - to assist countries to assess their health vulnerabilities and build capacity to reduce health vulnerability to climate change.

### Research Need

- Exploring the impact of extreme precipitation events about disease.
- Improving understanding of extreme weather events.
- Assessing the ability of health care system to respond to extreme weather event.
- Improving understanding of how to anticipate and address water quality and availability.
- Evaluating and improving the effectiveness of health alert warning system and other health system.
- Evaluating and developing new funding and reassurance strategies and policies[3-8].

### Conclusion

**Source of Support: Nil**

**Conflict of Interest: Nil**

Climate change presents a major and growing challenge to the arctic and the world as a whole. While the concerns this generates are important now, their implications are of even greater importance for future generations that will inherit the legacy of the current actions or inaction. Strong near-term action to reduce emissions is required in order to alter the future path of human- induced warming. Action is also needed to begin to adapt to the warming that is already occurring and will continue. The findings of this first arctic climate impact assessment provide a scientific basis upon which decision makers can consider, craft, and implement appropriate actions to respond to this important and far-reaching challenge.

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