

News and Views

Presentation on Impact of Climate on Public Health: Emerging/ Re-emerging Infectious Diseases in Bangladesh

Dr. Kazi Selim Anwar, Engr. Ahmed Arif Rashid

A presentation on public health titled 'Impact of Climate on Public Health: Emerging/Re-emerging Infectious Diseases in Bangladesh' was presented at a national seminar on World Meteorological Day on 23 March 2023, with the theme 'The Future of Weather, Climate & Water Across Generations' by Dr. Kazi Selim Anwar, Head, Medical Research Unit (MRU), Ad-din Women's Medical College.

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It goes without saying how climate change impacts human health eminently by disrupting eco systems and societal systems. Disruption to eco systems brings about allergies, food & water borne diseases, asthma etc. while malnutrition, work capacity conflict and mental health illness are caused by the disruption to societal systems, by and large give rise to sickness, injuries, deaths from extreme events and storm surges.

When the host and agent are in an unbalanced state, we had been around epidemic to pandemic catastrophe.

Glimpse on Climate Change Global Warming: Where do we stand!

According to American Public Health Association (APHA) climate change affects human health by worsening air quality, spreading vector-borne diseases, devastating lower SES communities. Drought, flood, storm, and thunderstorm are manifestations of extreme weather events. To fight against these environmental disasters, strong climate change adaptation strategies and interventions to safeguard public health is profoundly needed.

In this presentation, the American Public Health Association's (APHA) provided illustrations were used to show how climate change affects health through air quality, extreme weather and vector borne diseases.

Most emerging infectious diseases of our country is associated with few/some types of climate/weather issues, particularly with its spatiotemporal variations. Since no full-fledged epidemiological research on EID exists in Bangladesh involving meteorological variables, so far, it is imperative that public health experts be tie up in a team with BMD meteorologists to shape up this crucial task prudently towards predicting EID based on Weather forecasts/ epidemic control activities. We have enough data base on dengue, COVID-19, Hand Foot Mouth (HFMD) Disease.

Details of this poster has been delineated below in two sections:

*The Journal of Ad-din Women's Medical College; Vol. 11 (1), Jan 2023; p 64-66
<https://doi.org/10.3329/jawmc.v11i1.70473>*

EMERGING & RE-EMERGING INFECTIOUS DISEASES

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The emerging viruses of the 21st century

PARIS, June 10, 2022 (BSS/APP) - The recent explosion of monkeypox cases

Climate & Public Health/ Re/Emerging Infectious Dis (EID)

>2500 years ago, Hippocrates termed 'Epidemics' to describe diseases propagation through populatn, in a seasonal fashion,^{1,2}

His thesis: 'Air-Water-Place' proved environment & seasonal influence → Direct physicians/public health scientists towards our community-health but focusing sun, soil, elevation, geography, climate.¹⁻³

Bangladesh Health National Adaptation Plan (HNAP)
(Pending approval)
Ministry of Health and Family Welfare, WHO Country Office, Bangladesh

National Strategy for Water Supply and Sanitation
December, 2014
Local Government Division, Ministry of Local Government, Rural Development and Cooperatives, Government of the People's Republic of Bangladesh

VULNERABILITY & ADAPTATION ASSESSMENTS (V&A)

Assessment of Health Vulnerability Reduction to Climate Change in Bangladesh
Final Report
June, 2014
WHO Country Office for Bangladesh

EFFECT OF GLOBAL WARMING IN BANGLADESH: Status quo

Impact of Climate change on Agriculture in Bangladesh
Byomkesh Talukdar, Fri Sep 28, 2007

World Health Organization, DFID, Department for International Development

Bangladesh

Climate change, health & WASH

The current climate impacts on human health in Bangladesh are unprecedented. The country is ranked globally as one of the most vulnerable countries to climate variability and change. The following case study describes activities undertaken in Bangladesh from 2013-2018 to implement the United Kingdom's Department for International Development (DFID)-funded project on "Building adaptation to climate change in health in least developed countries (LDCs) through resilient water sanitation and hygiene (WASH)", the aim of which was to assist countries to respond to the health risks as a consequence of climate variability and change, through improved and more resilient health and WASH adaptation.

EMERGING & RE-EMERGING INFECTIOUS DISEASES

Combating Severe Dengue in Children in Ad-Din Hospital Utilizing WHO 2009 Classification: Insight on a Rapid Appraisal of Pocket Outbreak in Urban Dhaka, Bangladesh

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Dr. Kishor Kumar Paul, Parasit. Titus Christy, Elizabeth Baggio, et al. 2018. Risk Factors for the presence of dengue vector mosquitoes and determinants of their persistence in urban areas in Dhaka, Bangladesh. PLoS ONE 13(9): e0209073-14

How Weather → Climate associates with Pub Health EID

★ What Our Study Yields in Bangladesh

Here are some climate dependent EIDs

Dengue (DEN),¹⁴ (Mosquitoes: *Aedes aegypti / albopictus*)

Chikungunya,⁶ (Mosquitoes: *Aedes aegypti / albopictus*)

HFMD (Hand, Foot, Mouth Dis.),¹⁴ Virus EV-71, Coxsackie A16

COVID-19,⁹ Coronavirus' SARS-CoV-2

These EIDs associated with climatic (ambient air, drinking H₂O, toxiccontaminated food), with weather components (T°, humidity, wind velocity, Zrainfall) causing EID.¹⁴

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RESEARCH ARTICLE

REVISED Emerging Hand Foot Mouth Disease in Bangladeshi Children- First Report of Rapid Appraisal on Pocket Outbreak: Clinico-epidemiological Perspective Implicating Public Health Emergency [version 3; peer review: 2 approved]

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Bottomline:

Most Emerging Infectious Diseases our country is associated with few/some types of climate/weather issues → particularly with its spatiotemporal variations

Since no full fledged **epidemiological** research on **EID** exists in Bangladesh involving **meteorological** variables, so far, it is imperative that **public health experts** be tie up in a team with **BMD meteorologists** to shape up this crucial task prudently towards predicting EID based on Weather forecasts/ epidemic control activities.

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