

Editorial

Emerging and Re-emerging Infectious Diseases: Bangladesh Perspective

Infectious diseases have been an ever-present threat to mankind. From the biblical plagues and the Plague of Athens in ancient times, to the Black Death of the Middle Ages, the 1918 “Spanish Flu” pandemic, and more recently, the HIV/AIDS pandemic, infectious diseases have continued to emerge and reemerge in a manner that defies accurate predictions.^{1,2,3}

Several diseases are major public health problem, not only in Bangladesh, but also in different parts of the world. Some have emerged as major problem in recent time. Geographical and economical backgrounds are important for some diseases for their incidence and prevalence.

Some of the emerged diseases are poorly controlled and rapidly spreading as little is known about them in terms of their pathophysiology or management. As Bangladesh is in the tropic and most of the people maintain a poor quality of life with poor educational status, some diseases are going to be more prevalent.

Diseases like leishmaniasis, malaria, dengue, enteric fever etc. have been major public health concern in Bangladesh over the years and are considered important because of large human morbidity and mortality. Plague may reemerge as it happened in Indian subcontinent causing huge financial loss in terms of trade, morbidity and mortality. Leptospirosis remained under diagnosed because of lack of awareness.

New and reemerging microbial threats have continued to challenge the public health and infectious diseases research communities worldwide, newly emerging pathogens, such as the severe acute respiratory syndrome-associated coronavirus (SARS-CoV), henipaviruses (Hendra and Nipah), avian influenza viruses and most recently Swine flu (H1N1) have caused illness and deaths in humans with the threat of evolution into a pandemic. Over the past decade, strains of common microbes such as *Mycobacterium tuberculosis* have continued to develop resistance to the drugs that once were effective against it.¹⁻⁴ Such antimicrobial-resistant microorganisms, which defy conventional therapies and pose a threat to public health, underscore the need for a robust pipeline of new antimicrobial

agents based on innovative therapeutic strategies, new vaccines, and other preventive measures.^{3,4}

Very recently there has been a Chikungunya outbreak in Bangladesh. It poses a big threat and likely to emerge in Bangladesh as a major public health problem. The outbreak of Chikungunya fever has been discovered in Dhaka, Dohar & Nababganj of Dhaka district & also in Shibganj of Chapainababganj. According to IEDCR, 250 samples have been collected, among them the virus has been identified in the body of 46 persons. According to the information of Prothom Alo on 24th November, this is the 3rd outbreak in Bangladesh. The 1st one was in Poba upozilla in Rajshahi district affecting 32 people in 2008. The 2nd outbreak was in Shathiya upazilla of Pabna in 2009.

These emerging and reemerging infectious diseases are superimposed on a substantial baseline of established infectious diseases. Although annual deaths and lost years of healthy life from infectious diseases have decreased over the past decade, the worldwide impact from infectious diseases remains substantial. Overall, infectious diseases remain the second leading cause of death worldwide.⁵

Scientists-overnment and academic, together with their industrial partners and international collaborators-ave made great strides over the past 10 years in understanding many of the pathogenic mechanisms of emerging and reemerging infectious diseases. Many of these discoveries have been translated into novel diagnostics, antiviral and antimicrobial compounds, and vaccines, often with extraordinary speed.

However many challenges remain. Paramount among these is developing a safe and effective HIV vaccine. The evolution of pathogens with resistance to antibacterial and antiviral agents continues to challenge us to better understand the mechanisms of drug resistance and to devise new ways to circumvent the problem. These efforts will pave the way for developing countermeasures against deliberately engineered microbes.

If history is our guide, we can assume that the battle between the intellect and will of the human species and the extraordinary adaptability of microbes will be never-ending. To successfully fight our microbial foes, we must continue to vigorously pursue research on the basic mechanisms that underlie microbial pathogenesis and develop novel strategies to outwit these ingenious opponents.

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