The book of infectious diseases—a living document

Planet Earth continues to be pillaged by its dominant species. Man’s incursions into forests have resulted in denudation of massive tracts of land, and the displaced inhabitants—vectors carrying exotic infectious agents—have begun to wander deeper into man’s territory.

In 1993, in South-Western United States, the Sin Nombre virus (the first Hantavirus) normally a pathogen of mice, developed its first taste for Homo sapiens. In 1997, the avian influenza H5N1 virus, jumped species to man. In 2002, a virus of civet cats in the Guangdong Province in Southern China transformed itself into the lethal SARS virus. In 2009, two swine strains, one human strain, and one bird strain of influenza all combined themselves into a new deadly strain—the H1N1 Swine Flu virus. And only last year, the MERS-CoV became a new player in the changeable game of infectious disease.

Almost as soon as the world comes stumblingly to terms with one new epidemic, another unleashes itself. Lessons were clearly not learnt after the Ebola epidemic in 1976 which was followed by another major outbreak in Zaire in 1995.

This year, confronted with a death-count that exceeds the combined tally of all previous Ebola epidemics, the WHO has finally declared the Ebola outbreak in West Africa as an “extraordinary event” and admitted that it is indeed a “public health risk to other countries.”

As a human pathogen, the Ebola virus is four decades old. True to form, the little-affected developed nations—the countries with the resources to tackle emerging infections—have taken no great interest in the matter. Forty precious years have ticked by. The CDC admits: “We do not know how to treat Ebola or vaccinate against it—and it will be a long time before we do.” As with the other major infectious killers that ravage the developing world, the profit margin for a drug against Ebola is slender. The Zaire Ebola virus though, is special—it is the most deadly Ebola virus known, with fatality of around 90 per cent. By the time the victim is aware of the infection (the incubation period of the disease can be up to three weeks) he or she may have infected dozens of others. With over 7 million air flights crisscrossing the globe every year with half a billion-odd passengers, the earth has truly been reduced to a global village. This of course has immense implications for any new epidemic that is unleashed upon an immunologically unprepared population.

And that’s not to say the older scourges have been done and dusted with. Every second, somewhere in the world, a person contracts tuberculosis. Every minute a person dies of it. Each year, nine million individuals become ‘fresh cases’ of TB, and nearly two million persons succumb to it. Each year, unlikely diseases like rabies kill at least 55,000 individuals. Hard to believe, but even today, someone, somewhere dies of rabies every ten minutes or so.

The decline in the incidence of rabies in the developed world has unfortunately not been mirrored in developing countries, and impoverished countries account for nearly half of all deaths from rabies. For instance, in India, for the better part of the last decade, there has been no perceptible decline in its incidence: India alone accounts for over a third of all rabies deaths and about 20,000 cases of rabies a year, and these figures are almost certainly gross underestimates. This comes as no surprise. In earlier studies, as many as a third of the lay Indian public in India were polled as being unaware of the existence of rabies but recent studies (including the one published in this issue) show that, in urban areas at least, the awareness appears to be much higher. Despite the fact that human rabies is uniformly fatal unless the exposed individual is vaccinated before the onset of illness, most rabies continue to be treated with age old remedies and fewer than two-thirds of dog-bite victims receive the vaccine. Fewer people yet are aware of the facilities available under the National Programme for the Prevention and Control of Rabies.
In respect of infectious disease, there is much work to be done. Countries will need to come together and take ownership of their common home. The book on infectious disease is by no means closed*: it continues to be a living document, and grows bulkier by the day.

* "It is time to close the book on infectious diseases, and declare the war against pestilence won" is a quote popularly—if rather erroneously—ascribed to the United States Surgeon-General, Dr. William H. Stewart. "The war against infectious diseases has been won", the US Surgeon-General was also quoted as saying, by the *Time Magazine* in 1966.

References


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