



Infectious Diseases that are Currently Emerging

Zhian Ramzi*

Department of Epidemiology, University of California, USA

Editorial

Infectious diseases that are newly diagnosed in a community or that have existed but are rapidly expanding in incidence or geographic range are known as emerging infectious diseases (EID). Simply put, new infections may emerge as a result of changes or evolution in existing organisms, known infections spreading to new geographic areas or populations, previously unknown infections emerging in areas undergoing ecological transformation, or old infections resurfacing as a result of antimicrobial resistance in known agents or breakdowns in public health measures [1, 2]. According to the 10th International Conference on EID [3], emerging diseases account for at least 15% of all human illnesses. The synergistic connection between developing diseases and other infectious and non-infectious ailments is a major source of concern. Many developing diseases are zoonotic or synoptic, meaning that the organism is incubated in an animal receptacle and then spreads to humans at random. EID can also be transmitted by food, vectors, or the air. Regardless, the infectious agent must be introduced into a vulnerable population and have the ability to travel from human to human and cause disease for an EID to be established [4].

Infectious diseases, unlike other human diseases, can be unpredictable, with the potential for worldwide outbreaks. Despite the fact that they are contagious, they have the ability to confer protection against re-infection. Many can be prevented with immunizations, and some can even be eradicated. Nature and human behaviour are inextricably linked [5]. The issue of EID is their influence on humans: pandemics, epidemics, and risks to human health and global stability [5, 6]. It is well known that new illnesses will emerge in the future. Despite advancements in the development of countermeasures, diagnostics, treatments, and vaccinations, greater worldwide interdependence and global travel have added to the difficulties in detecting and containing these diseases. The human immunodeficiency virus (HIV)/AIDS, severe respiratory syndrome, and pandemics, such as the 2009 H1N1 influenza, are all examples of modern-day emergent illnesses. The societal and economic consequences of these diseases were enormous, not to mention the impact on the quality of life of affected people and their families. It's crucial to know the many types of infectious diseases. Newly emerging species, established species that may periodically resurface, and securely endemic species are some of the types [5, 6].

Factors contributing to emergence of outbreaks

Between 1940 and 2004, a total of 335 EID incidents were discovered. The bulk (60.3 percent) came from wild animal reservoirs, with around 1 in 5 disease vectors, such as ticks and mosquitoes, transmitting disease from animal reservoir hosts to humans. 18 Fast forward to 2008 and beyond, when the severe fever with thrombocytopenia virus and the Middle East respiratory syndrome coronavirus were discovered, as well as rare Zika, yellow fever, and Ebola outbreaks. The importance of demographic change, worldwide travel and trade, and possible climate change as drivers are highlighted in these EID [2, 7]. The following are examples of interconnected biological, social, and environmental drivers:

Adaptation and change in bacteria (eg, genetic drift and shift in

influenza A)

- Infection susceptibility
- Increased human population density
- Poverty and social inequality (e.g., tuberculosis)
- Environmental stress from farmland expansion
- Globalization of the food market and manufacturing
- Environmental contamination
- Climate change
- New opportunities for emerging infections
- Growth in the population
- Infectious disease outbreaks have been reported in health-care settings.
- Population ageing
- Changing and increasing vector habitats as a result of international travel (warmer temperatures may allow mosquitoes and diseases they transmit, to expand to new regions).
- Resistant to drugs (contributes to re-emergence of bacteria, viruses, and other microorganisms that change over time)
- Intentional biological assaults Public health breakdown

Influenza, a causal virus that changes its genetic material, is a contemporary illustration of how these factors influence new diseases. When these alterations become noticeable, the human immune system is put to the test, and pandemics may result. When humans live near agricultural animals such as chickens, ducks, and pigs, which are natural hosts of the virus, the likelihood of genetic alterations and human infection increases. Infection with avian H5N1 influenza (bird flu) is limited to direct contact with infected birds. Unlike the H1N1 influenza virus, which was transmitted from pigs to humans, this virus does not have the ability to spread between humans. Because of human activities, particularly air travel, this virus had a global impact in 2009 [4].

HIV is another viral disease that has been linked to human behaviour. Humans were first infected with HIV through close contact with chimps, maybe through bush meat hunting, in remote parts of Africa, according to one theory. Air travel facilitated the spread of the

*Corresponding author: Zhian Ramzi, Department of Epidemiology, University of California, USA, E-mail: akamm@yahoo.com

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virus from rural to international areas. Before the new disease was diagnosed, human behaviours such as intravenous drug use, sexual transmission, and blood product transfer occurred, resulting in fast spread.

Consider the tropical disease chikungunya in light of climate change (discussed previously). This virus is spread by a mosquito that was once only found in tropical areas near the Indian Ocean. An epidemic of this disease killed more than 200 people in a village in Italy in 2007. As a result, outbreaks have occurred on every continent since then.

The shifting demography of the population warrants additional discussion as health care providers within health care systems. Aging increases the patient's vulnerability by increasing the likelihood of infection and subsequent hospitalisation. The author highlights the new fungus species *Candida auris*, which is linked to increased mortality in patients with underlying comorbidities and is producing outbreaks in health care facilities [2].

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Conflict of Interest

None

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