



# Challenging Aspects of Evaluating and Vaccinating in Emerging Infectious Diseases Based on the COVID-19 Outbreak

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## ABOUT THE STUDY

Emerging infectious diseases are infections that have recently emerged in the population, that have a rapidly increasing incidence or geographic range, or that may increase shortly. Emerging infectious diseases can occur from the following causes:

- Previously undiscovered or unknown infections.
- Known pathogens that have spread to new geographic locations or new populations.
- A previously known active ingredient whose role in a particular disease remains unrecognized.
- Re-emergence of pathogens whose onset frequency has decreased significantly in the past, but whose onset frequency has recurred. This class of illness is called a recurrent infection.

Emerging infectious diseases are diseases with increasing prevalence in new, newly recognized, or new areas like antimicrobial resistance, recurrent disease usually falls into this category. These illnesses have been officially recognized over the last two decades, but historical perspectives indicate that the phenomenon is likely to persist. Factors such as demographic changes, land-use changes, increasing speed and frequency of intercontinental transport, and other predominantly social trends have accelerated their emergence recently. The continued emergence of infectious diseases poses significant challenges to public health and basic research and will continue to raise them.

Many factors are involved in the emergence of new infections and the recurrence of "old" infections. Results from natural processes, such as the evolution of pathogens over time, but many are the result of human behavior and practices. Consider how the interaction between population and our environment changed, especially in the last century. Factors contributing to these changes are population growth, rural-to-city migration, international air travel, poverty, war, and devastating ecological changes due to economic development and land use. For a rising sickness to emerge as hooked up at the least occasions need to occur:

- The infectious agent must be brought right into a prone population.
- The agent has to have the cap potential to unfold conveniently from character-to-character and motive sickness. The contamination additionally has a view to maintain itself inside the population, this is increasingly human beings maintain to emerge as infected.

The mode of transmission of emerging infectious diseases are some diseases that are transmitted primarily by direct contact or through indirect contact directly or through indirect contact. Direct contact occurs when infected by contact with a reservoir, such as by touching an infected person, eating infected meat, or being bitten by an infected animal or insect. Direct contact transmission also includes inhaling the infectious agent into droplets released by sneezing or coughing and contracting the infectious agent through close sexual contact. Some diseases transmitted primarily through direct contact with the reservoir are ringworm, AIDS, trichinella, influenza, rabies, and malaria. Indirect contact occurs when the pathogen can withstand the environment outside the host for a long period before it infects others.

The continued discovery of new antivirals and vaccines is important for human health around the world, especially as new viruses such as the new coronavirus and the new influenza virus can emerge rapidly. It provides solutions for measuring viral neutralization, antiviral compound effects, antiviral immune responses, and studying cytokine storms associated with COVID19.

Vaccination has been considered one of the most fortune public health interventions. Our modern era of vaccination began in 1796 when Edward Jenner, a general practitioner in the United Kingdom, conducted his first scientific study of smallpox prevention. Since then, vaccination has reduced illness, disability, and death from various infectious diseases around the world. Despite this success, there is still a great need for new vaccines that can prevent and reduce the effects of both endemic and emerging infectious diseases. This is especially difficult for EIDs, as current tools cannot accurately predict the identity of

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the pathogen that causes the disease and the time and place of the next outbreak. In the past, vaccine development has been a long, risky, and costly effort. Planning vaccination against EID is a special challenge. The potential market for vaccines against these diseases is limited and testing of such vaccines is difficult. Several bottlenecks have been identified in the development of vaccines against EID.

The World Health Organization's International Health Regulations Emergency Committee subsequently reported the outbreak of COVID-19 as SARS-CoV spreads at an alarming rate both inside and outside China, causing serious disappointments and panic among the national, regional, and

international masses have declared a global emergency. Political community news media and social media hype and Specific molecular tests for SARS-CoV-2 have been developed, and a series of studies and the development of COVID-19 have rapidly defined epidemiological, virological, and clinical features from person to person in communities, homes, hospitals, and Evidence of infection was provided. These led to the development of numerous WHO guidelines and recommendations related to case definitions, case reporting, diagnosis, management, prevention, and management policy documents.