



Expediting the Preparation Against the Next Pandemic: Disease X

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To the Editor,

Nothing may cause such global concern as the spread of an infectious disease, and the World Health Organisation (WHO) has added a new illness in February 2018 that is most likely to spread globally, named Disease X. It is caused by an unknown infectious pathogen that is not currently recognized but has the potential to create an epidemic or pandemic. So, it is critically necessary to create vaccines and medications to prevent emerging diseases that were shortlisted by the WHO to prevent "Disease X".

What is Disease X

Disease X is supposed to be caused by a "Pathogen X" and it may refer to any pathogen, such as bacteria, fungi, viruses, parasites, or prions, among others.¹ It is the cryptic name of an illness caused by an important, undiscovered microbial threat as well as a well-known pathogen like SARS and Ebola. The WHO added Disease X to a shortlist of illness in 2017 which would be a serious international epidemic for humans and many

experts believe that Ebola outbreak and COVID-19 pandemic was the example of Disease X²⁻⁴. A variety of pathogens found in animals which would be responsible for further occurrences in human and the WHO has given critical priority to develop the drugs and vaccines for these diseases.

What will be the Disease X?

There are several diseases to spread like epidemics, especially those for which no cure has yet been discovered or insufficient medical treatments. The WHO shortlisted a hypothetical, unidentified pathogen as a Blueprint Priority Disease in February 2018 as Disease X including Crimean-Congo hemorrhagic fever (CCHF), Ebola virus disease and Marburg virus disease, Lassa fever, Middle East respiratory syndrome coronavirus (MERS-CoV) and severe acute respiratory syndrome (SARS), Nipah and henipaviral diseases, Rift Valley fever (RVF) and Zika virus (ZIKV).⁵ Moreover, this is not a complete list and R&D department of WHO are working on it and more diseases may be added according to priority.

Table 1: The Reason for Shortlisted These Diseases by WHO as Disease X

Disease Name	1 st Reported	Spread (Countries)	Affected	Deaths	Year	Fatality Rates	Ref.
CCHF	1967	>30	>3500	>700	1945-2005	>30%	6
Ebola	1976	Several Countries	28,646	11,323	2014-15	>50%	7
Marburg	1967	>128	>600	>413	1967-2023	23-88%	8

Disease Name	1 st Reported	Spread (Countries)	Affected	Deaths	Year	Fatality Rates	Ref.
Lassa	1969	Worldwide	100k-300k	5000	Each year	10%	9
MERS-CoV	2012	27	2260	803	2012-18	>35%	10
SARS-CoV-1	2002	26	8098	774	2002-03	10%	11
SARS-CoV-2	2019	Worldwide	699620241	6956560	2019-23	1.0%	12
NiV & HeNiV	1990	5	>345	127	1998-2021	>40%	13, 14
RVF	1930s	Mauritania	47	23	2022	49%	15
ZIKV	1947	>70	>575677	>84	1947-2018	0.01%	16

Why WHO shortlisted these Diseases

These diseases were recommended by the WHO based on their incidence of deaths, epidemic and pandemic transmission, and fatality rate. Furthermore, most of the diseases in this list have no medications and the WHO has prioritized the development of medications and vaccinations to spread these illnesses in order to prevent the Disease X.

What should We Know and Study about Disease X

"Disease X" was added to a list of diseases by the WHO in 2017 that need more research in the upcoming years. It's not a specific illness but rather an indicator that a pathogen linked to alterations in lifestyle and environment is probably going to surface, with the potential to start a pandemic. We have seen the Ebola, SARS, and MERS pandemics that were not on the human list.

So, it is important to think broadly about the outbreak of diseases. Disease X could turn out to be anything, but it will probably be a respiratory virus with a "moderate fatality rate" that's unlikely to have a vaccine. People don't need to panic about this disease, but it's important to know that it's possible for new infectious diseases to crop up. Basically, Disease X could turn out to be an issue, or it couldn't—it's really hard to say at this point.

What We should Do in Future

These "unknown pathogenic" agents are those that researchers believe could cause widespread disease and loss of life in the future, just as COVID-19 first appeared. People should not worry about Disease X; it is mostly the work of researchers and scientists. Most people now see the possibility of another epidemic, but there is nothing they can do about it. Government representatives and politicians must remain committed to averting the next

pandemic to lessen the devastation caused by Disease X. The biologist requires continuing biological study and financing.

Additionally, a health strategy has been put forth that offers a comprehensive method of addressing the fundamental problems that led to the spread of disease X. These problems include bridging institutional gaps, prioritizing risk areas and pathogens, and highlighting alleged risk factors for events that involve newly and re-emerging infectious disease pathogens in the future.

The global health crisis caused by the shortlisted pathogen epidemic is not the first, and it certainly won't be the last. As a result, we must start getting ready for the next epidemic right away.

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Conflict of Interests

None

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