

## COVID-19 Pandemic: Where Does it Stand In the Pantheon of Deadly Infectious Diseases?

By: **Brian Chanda Chiluba**   
Editor-in-Chief, JPRM  
Lecturer and Researcher, the University of Zambia, Zambia.  
UJMT-Fogarty Global Health Fellow-2020/2021  
University of North Carolina, Chapel Hill,  
United States of America.  
[brian.chiluba@unza.zm](mailto:brian.chiluba@unza.zm)  
[brian.chiluba@med.unc.edu](mailto:brian.chiluba@med.unc.edu)

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Using my useful and new role (as Editor-in-Chief of the Journal of Preventive and Rehabilitative Medicine-JPRM), I wrote my first editorial comment in the previous JPRM publication titled "*Zambia: Editorial Comment - COVID-19 -Epidemiological Thought on Why Politics and Religion are Compromising the Fight*" [1]. In this editorial I labored to emphasize why politicians should take the public health regulations for COVID-19 more seriously than they have been doing. After providing depth explanation to the failures of especially politicians and religious leaders in adhering to the stringent COVID-19 guidelines, I am allowed to return to my critical thoughts without any restrictions and hesitations. In my thoughts I am prompted by the thinking that even though COVID-19 has no direct impact on me other than causing mild trepidation, it gets me thinking about how this pandemic will affect communities and if there is any useful role that I as the Editor-in-Chief of the JPRM can and should perform.

Before I lose myself, I will ask the readers to bear with me. This writing may not be devoid of mistakes, half-thoughts, even contradictory statements (this maybe so because there is still emerging data to understand COVID-19 comprehensively). The point of this writing, though, like many other editorials is to merely provide

alternative perspectives on what is unfolding and to do so while 'early' in the throes of an unfolding pandemic. but this doesn't mean that we should set aside our critical gaze in the logic of science. Again, to be clear, about this writing, I am not trying to exaggerate anything about the pandemic. Rather, this is just a presentation for rational thought.

A large portion of science readers seem to fully embrace the logic of science, while rejecting the logic of science on the other hand (like on vaccines), and to do that is logically inconsistent (this is just for perspective setting). Away from that, the question that should propel me into a focused discussion is "*Where Does COVID-19 Stand In The Pantheon of Deadly Infectious Disease Pandemics?*". This question is key, because the answers will be of value in our understanding of the current pandemic and the current and future developments of it.

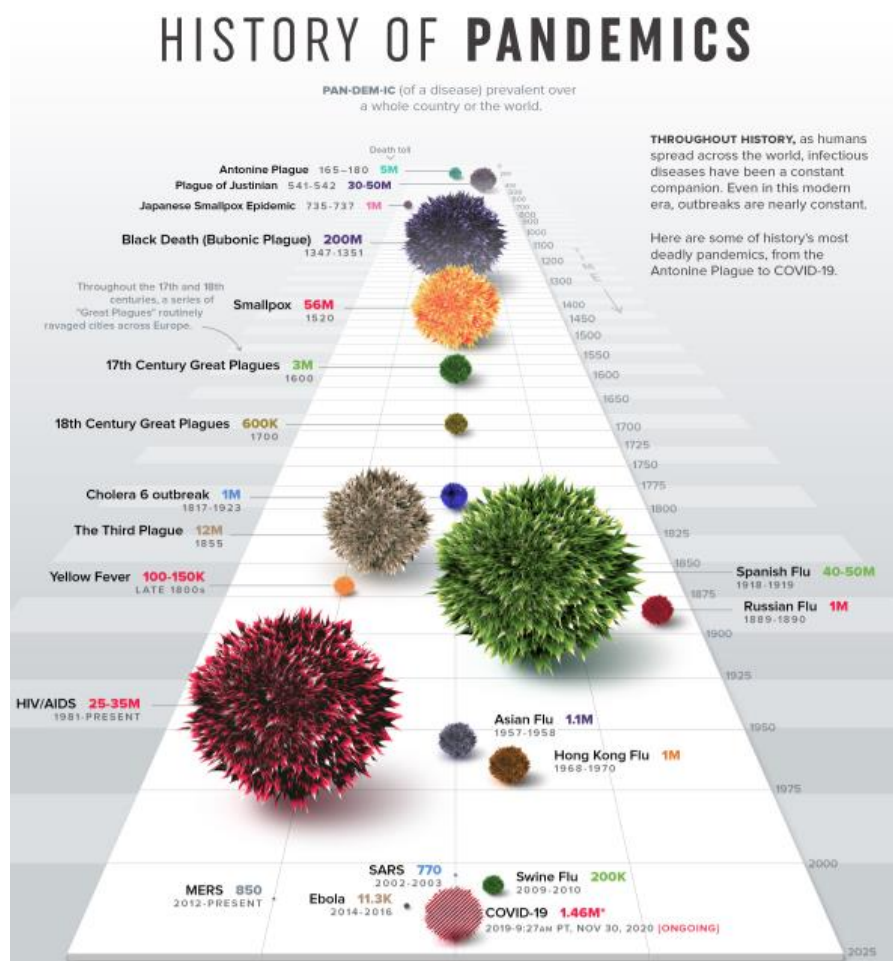
I should start by stating that, although COVID-19 has already caused a significant amount of devastation, we appear to be in the 'early' stages of responding to this pandemic. COVID-19 has established itself as the deadliest, fastest-moving pandemic since 1918 (though its ravages to date are far less than the Spanish flu a century ago) and is nearing a 2-million fatalities globally (as of 11<sup>th</sup> January, 2021). During the century that

separates the two outbreaks (The Spanish flu and COVID-19), the world battled a string of other devastating diseases including Ebola, SARS and several other flu pandemics.

COVID-19 infection, has been the deadliest of the 21st century viruses. According to publications of the lancet, In 2009, the H1N1 virus, or swine flu, caused a global pandemic and left death toll estimated between 151,700 and 575,400. In 2002-2003, the SARs virus (Severe Acute Respiratory Syndrome) that emerged from China was the first coronavirus to spark global fears, but killed just 774 people in the final toll. Globally, seasonal flu accounts for up to 650,000 deaths, according to the World Health Organisation. In the 20th century, two major non-seasonal flu pandemics - Asian flu in 1957-1958 and Hong Kong flu in 1968-1970 - each killed around one million people, according to tolls carried out afterwards. The greatest catastrophe of modern pandemics to date, the flu pandemic of 1918-1919 also known as Spanish flu, wiped out some 50 million people according to research published in the 2000s [2].

It is key to note from the above that COVID-19 has entered the pantheon of greats of deadly infectious diseases. In addition to this, COVID-19 pandemic is creating dramatic and daily evolving changes with profound impacts on people's lives worldwide. As we confront challenges and uncertainties almost unimaginable, there is

need to understand that this pandemic, like those before it, is going to change the trajectory of history in ways we can't imagine. What makes it stand out as the most dangerous pandemic of the 21st century is the fact that mortality for COVID-19 appears higher than for influenza, especially seasonal influenza. While the true mortality of COVID-19 will take some time to fully understand, the data available so far indicate that the crude mortality ratio (the number of reported deaths divided by the reported cases) is between 3-4%, the infection mortality rate (the number of reported deaths divided by the number of infections) will be lower. For seasonal influenza, mortality is usually well below 0.1%. However, mortality is to a large extent determined by access to and quality of health care. [3]



**Infographic of pandemic trends in the picture above; The true scale of the coronavirus outbreak currently sweeping the world has been laid bare in a visual timeline comparing it to history's most deadly pandemics. Infographic (source Visual Capitalist) shows the bubonic plague, also known as the Black Death, was the most lethal of all diseases, killing roughly 200million people in the 14th century. The timeline, created by Visual Capitalist, shows that in general there has been a gradual reduction in the death rates of each pandemic, with Ebola, MERS and SARS all being contained quickly. But the infographic also shows that viruses can still run rampant and kill millions if scientists are unable to develop a vaccine.**

To indicate that today the disease we confront is far less lethal is a fallacy of science, because we still do not know when COVID-19 is coming to an end, but given the statistics one would be tempted to think so until they have employed the logic of science. The global case rates and case fatality rates for seven major pandemics are: [4]

- 1918 influenza (H1N1): 50 million; CFR 2%-3%.
- Avian influenza A (H5N1 and H7N9): H5N1 had 649 cases; 60% CFR; H7N9 had 571 cases; 37% CFR.
- COVID-19: 90.4 million cases and 1.94 million deaths by January 11, 202.
- Ebola: over 30,000 cases; average 50% CFR.
- MERS-CoV: 2,502 cases; 34% CFR.

- SARS-CoV: 8,422 cases; 15% C

The argument on whether COVID-19 has entered the pantheon of greats can be sustained further and with conflicting views, but all I have simply tried to do is use the maximum parsimony in tandem with the concept of burden of proof (the numbers still keep on rising and more or so with the new COVID-19 variant recently discovered in South Africa and the United Kingdom).

While in other previous pandemics, no successful vaccines were developed, it should be commended that science has entered the pantheon of greats as well by producing successful vaccines thus far before a greater COVID-19 mortality could be experienced.

There is no doubt that as the current COVID-19 pandemic stands in the pantheon of great, its dreadful global impact is a reminder of the potential detriment of emerging infectious diseases. Fortunately, the world today is better equipped to battle this emerging beast unlike in the past where other pandemics could not easily be managed.

Humanity is witnessing moments of extreme uncertainty and an unprecedented global health crisis created by COVID-19. Although it is not possible to make predictions of the future of this, certainly, COVID-19 pandemic has been added to the pantheons of deadly pandemics.

As an epidemiologist, I stand at my own precipice of ambiguity of COVID-19 pandemic more than 100 years later from another deadly one, the Spanish flu. In as much as I (as an

epidemiologist) can try to predict and estimate the cases of COVID-19, the true certainty of COVID-19 will only be established once it is over like already eluded to.

There should be future lessons in this pandemic. Governments across the globe, should take responsibility to adequately prepare for future pandemics. There should be a deliberate investments in public-health systems for the protection of citizens. Surely, another pandemic will show up in the near future and the lesson is “*never forget*”.

## REFERENCES

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