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An Analysis of the Correlation and Causation Between Public Health Crises and Economic Meltdowns

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I. INTRODUCTION

As a pandemic brings nearly all nations of the world to a halt in the form of COVID-19, a noticeable stagnation has been brought about to the world's strongest economies due to quarantines and nationwide lockdowns. An unprecedented number of cases reported in record time, with more than 2 million reported cases (so far), and nearly 130,000 recoveries, the present pandemic poses an unfamiliar situation for all individuals alive today. A disease with a relatively low mortality rate, which sees more people recover than lives lost, has caused the country, and the world, to restrict their functioning incomprehensibly. This essay attempts to analyse the relationship between public health and economic meltdowns which have taken place throughout the course of human history. Starting from the H1N1 pandemic in 2009, and covering the Ebola epidemic, to the present day, a relation (if one exists), would be established in terms of correlation and causation between the two concepts.

II. KEY TERMS

In order to gain a holistic perspective of the potential relationship, the terms 'public health crises' and 'economic meltdowns' need to be defined; before delving into individual instances of epidemics causing economies to temporarily come to a halt; and what conclusions can be drawn from these instances and the after-effects of the same.

A. Public Health Crisis

According to the World Health Organisation, the top ten threats to global health in the year 2019 were propounded to include air pollution and climate change; noncommunicable diseases; global influenza pandemic; fragile and vulnerable settings; antimicrobial resistance; Ebola and other high-threat pathogens; weak primary healthcare; vaccine hesitancy; dengue; and HIV.¹ What is noteworthy in this list is the fact that diseases are not the only threats outlined, but circumstancessuch as a lack of resources ("fragile and vulnerable settings" and "weak primary healthcare") and thought processes ("vaccine hesitancy", which points to a growing trend in the USA wherein individuals are shying away from getting children vaccinated over fear of development of autism) are also thought to be equally threatening. This creates a certain ambiguity around what a 'public health crisis' means. A question can be posed as to whether a public health crisis can be thought to include just disease outbreaks, or other, more subtle threats that



¹ World Health Organisation/Akbar, R. (n.d). *Ten Threats to Global Health in 2019*. Retrieved from <u>https://www.who.int/news-room/feature-stories/ten-threats-to-global-health-in-2019</u>.

humanity faces, such as lack of healthcare resources and personnel. Rampant gun violence in the United States of America, which took the lives of nearly 300,000 people between 2005 and 2015, prompted the American Medical Association to declare gun violence as a public health crisis.²

WHO defines a public health emergency or public health crisis as "an occurrence or imminent threat of an illness or health condition, caused by bio terrorism, epidemic or pandemic disease, or (a) novel and highly fatal infectious agent or biological toxin, that poses a substantial risk of a significant number of human facilities or incidents or permanent or long-term disability."³ A situation becomes emergent when its health consequences have the potential to overwhelm routine community capabilities to address them.⁴

The most relevant definition of such an event is what the WHO calls a Public Health Emergency of International Concern ("PHEIC"). Defined first in the International Health Regulations (IHR) of 2005, a binding international legalagreement of which 196 countries are party to, a PHEIC is "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response". This definition implies a situation that is serious, sudden, unusual or unexpected; carries implications for public health beyond the affected State's national border; and may require immediate international action.⁵

B. Economic Meltdown

An 'economic meltdown' is still harder to define than a public health crisis, since the term overlaps with several others such as 'financial crisis', 'economic crisis', 'economic stagnation', 'economic slowdown', so on and so forth. Banking crisis, currency crisis (hyperinflation), speculative bubbles and crashes, international financial crisis (currency and debt crisis, sovereign defaults), and wider economic crisis (such as recession and depression) have all been included in the definition of an economic meltdown or any of the overlapping terms by different analysts at different points of time.

While examining different models proposed to define what an economic meltdown is, including Hyman Minsky's, some economists have theorised that an

² Friedman, L. (2016, June). *The Nation's Largest Group of Doctors Just Declared Gun Violence a 'Public Health Crisis*. Retrieved from <u>businessinsider.com/ama-gun-violence-a-public-health-crisis-2016-6</u>.

³ World Health Organisation. (n.d). Humanitarian Health Action. *Definitions: emergencies*. Retrieved from <u>https://www.who.int/hac/about/definitions/en/</u>

⁴ Nelson, C., Lurie, N., Wasserman, J., & Zakowski, S. (2007). Conceptualizing and defining public health emergency preparedness. *American journal of public health*, 97 *Suppl 1*(Suppl 1), S9–S11. <u>https://doi.org/10.2105/AJPH.2007.114496</u>

⁵ World Health Organisation. (2005). *International Health Regulations* (3rd ed.). ISBN: 978 92 4 158049 6. Retrieved from <u>https://www.who.int/ihr/publications/9789241580496/en/</u>

economic meltdown or a financial crisis is a consequence of the broad circumstances in which a country's financial assets face a sudden loss in their value. This situation is usually characterised by a



fall in the country's GDP, a liquidity dry-up, and inflation/deflation. While the larger economic meltdowns include banking crises and recessions, stock market crashes and bursting of financial bubbles is also included in the definition of an economic meltdown.⁶ Thus, the term can be deemed to be wide enough to cover all scenarios wherein one or more countries are going through an economic slowdown characterised by certain indicative features. For the purposes of analysis in this essay, the effect of the public health crises which would be examined herein on the stock markets and affected businesses around the world and in the most affected countries would be discussed to establish a trend, if any exists.

III. OVERVIEW OF INSTANCES OF PUBLIC HEALTH CRISES

This essay seeks to examine four different instances of public health crises over the past two decades. This would include the H1N1 influenza or the swine flu pandemic of 2009; the Ebola virus disease epidemic in Western Africa in 2014 (which has been ongoing since 2018 in the Kivu region of the Democratic Republic of Congo); the Zika virus epidemic which took place in 2015-16 and affected several parts of North and South America; and the ongoing coronavirus pandemic. The structure of this examination would include establishing which countries were most affected by the disease, the duration of the outbreak, and how the economy of those countries was functioning in the same time period. What needs to be considered while examining how much a disease outbreak affects the economy of any nation in a globalised world is the communicability of the disease, the effect on human behaviour, and the proactiveness and preparedness of nation-states to deal with an outbreak. This includes how many restrictions on travel are placed (domestically and internationally); whether workplaces and educational institutions are closed temporarily (loss of wage for lack of work days); whether advisories are issued or legal impositions are imposed which make people avoid public places and thus affect their consumption; and the level of preparedness of healthcare facilities to handle an outbreak.

A. H1N1 Influenza Pandemic

The H1N1 influenza or the "swine flu" pandemic was declared a PHEIC on 26th April 2009. The first cases were discovered in the United States of America and Mexico, and then spread to other parts of the world. According to the final update that the World Health Organisation released before declaring the pandemic over

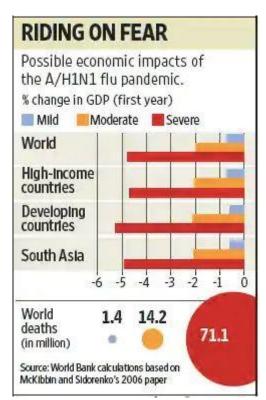
⁶ Kindleberger, C. P., & Aliber, R. Z. (2005). *Manias, Panics, and Crashes A History of Financial Crises* (5th ed.). Retrieved from <u>https://delong.typepad.com/manias.pdf</u>

on 10th August 2010, the disease caused 18,449 reported deaths worldwide.⁷ A study conducted by the Brookings Institution in 2009 found that closing all the nation's schools in the USA for two weeks could cost anywhere between \$5.2 billion to \$23.61 billion in lost economic activity; and closing them up for four weeks would result in a loss of \$47 billion or roughly 0.3% of the Gross DomesticProduct.⁸ One of the most influential findings on the subject, a paper titled *Global Macroeconomic Consequences of Pandemic Influenza*, divided any pandemic into



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four different scenarios: mild, moderate, severe, and ultra. According to the paper, a mild pandemic would cost the world 1.4 million lives and close to 0.8% of the GDP lost in economic output, which would be approximated \$330 billion. The 'ultra' scenario isestimated to cost 142 million lives across the globe and an economic loss of \$4.4 trillion globally.⁹

The swine flu pandemic did not result in the imposition of travel restrictions as the disease had already spread to most countries of the world and the WHO saw 'no rationale' behind delaying international travel as steps could be taken by

travellers for their protection.¹⁰ Educational institutions were closed in only some countries for a very short period of time, and workplaces were not reportedly widely shut down unless absolutely necessary. Only advisories were issued for the prevention

of the disease, and no legal impositions

were reported anywhere. The level of preparedness differed in different countries, but it can safely be said that a disease which had a 0.2% mortality rate across all

reported cases,¹¹ the preparedness of healthcare facilities across the globe was

more than sufficient. Ultimately, since the pandemic did not cause anything morethan a mild slowdown in only those countries which were the most affected, it

⁷ World Health Organisation. (2010). *Pandemic H1N1 2009 - update 112*. Retrieved from <u>https://www.who.int/csr/don/2010_08_06/en/</u>

⁸ Epstein, J. M., Hammond, R. A., & Lempel, H. (2009). *Economic Cost and Health Care Workforce Effects of School Closures in the US.* Retrived

from <u>https://www.brookings.edu/research/economic-cost-and-health-care-workforce-</u> effects-of-school-closures-in-the



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⁹ McKibben, W. J., & Sidorenko, A. A. (2006). *Global Macroeconomic Consequences of Pandemic Influenza*. Retrieved from <u>https://cama.crawford.anu.edu.au/pdf/working-papers/2006/262006.pdf</u>
¹⁰ World Health Organisation. (2009). *No Rationale for Travel Restrictions*. Retrieved from https://www.who.int/csr/disease/swineflu/guidance/public_health/travel_advice/en/
¹¹ Abadi, M., & Cooper, H. (2020). *How the coronavirus compares to SARS, swine flu, Zika, and*

Abadi, M., & Cooper, H. (2020). How the coronavirus compares to SARS, swine flu, Zika, and other epidemics. Business Insider India. Retrieved from <u>https://www.businessinsider.in/international/news/how-the-coronavirus-compares-to-sars-swine-flu-zika-and-ot her-epidemics/articleshow/74560116.cms</u>

cannot be concluded that this particular pandemic was serious enough to bring economic systems to a complete halt. Thus, while it is more than clear that public health is somewhat tied to economic functioning of a nation, even a pandemic as widespread as the swine flu could not warrant as restrictive measures as the COVID-19 has done.

B. Ebola Virus Disease Epidemic

The Ebola virus disease (EVD) epidemic took place in Western Africa in the years 2013-16, and was the largest outbreak of the disease since its discovery in 1976. The first case took place in December 2013 in Guinea, spreading then to Liberia, Sierra Leone, Nigeria, Mali, the United States of America. Isolated cases were discovered in Italy, United Kingdom, Senegal, and Spain. The WHO declared the EVD outbreak as a Public Health Emergency of International Concern only in August 2014.¹² The total number of confirmed, probable, and suspected cases of the Ebola virus in Western Africa, according to the World Health Organisation, was 28,646 and 11,323 deaths.¹³ The WHO was severely criticised for what was called its slow and inefficient response at the early stages of the outbreak,¹⁴ and even admitted to certain shortcomings on the part of the Organisation which couldhave been avoided.¹⁵ Unknown to most people due to what can only be perceived as lack of media attention, an Ebola outbreak is ongoing in the Democratic Republic of Congo since 2018.¹⁶ One study has alluded to the fact that disease outbreaks have a swifter and more efficient response from healthcare authorities like the WHO than when outbreaks occur in other, socio-economically weaker countries.¹⁷

Travel restrictions were imposed heavily once the disease outbreak reached its peak, with either travel bans or border closures or both in different shapes and forms imposed on persons belonging to affected areas. By one estimate, 60% of travel was restricted from Western Africa to the rest of the world, and a little over

¹² World Health Organisation. (2014). *Statement on the 1st meeting of the IHR Emergency Committee on the 2014 Ebola outbreak in West Africa.* Retrieved from <u>https://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/</u>

¹³ World Health Organisation. (2015). *Ebola Situation Report - 23 September 2015*. Retrieved from <u>https://apps.who.int/ebola/current-situation/ebola-situation-report-23-september-2015</u>

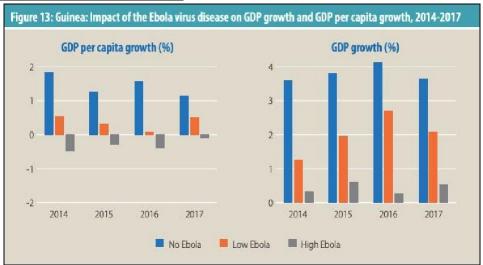
¹⁴ Moon, S., Sridhar, D., Pate, M. A., et al. (2015). Will Ebola change the game? Ten essential reforms before the next pandemic. The report of the Harvard-LSHTM Independent Panel on the Global



Response to Ebola. *The Lancet, 386*(10009), <u>https://doi.org/10.1016/S0140-6736(15)00946-0</u> ¹⁵ Miles, T. (2015). WHO leadership admits failings over Ebola, promises reform. *Thomson Reuters*. Retrieved from <u>https://www.reuters.com/article/us-health-ebola-who-idUSKBN0NA12J20150419</u>

¹⁶ World Health Organisation. (2020). *Ebola virus disease fact sheet*. Retrieved from <u>https://www.who.int/en/news-room/fact-sheets/detail/ebola-virus-disease</u>

¹⁷ Hoffman, S. J., & Silverberg, S. L. (2018). Delays in Global Disease Outbreak Responses: Lessons from H1N1, Ebola, and Zika. *American journal of public health*, *108*(3), 329–333. <u>https://doi.org/10.2105/AJPH.2017.304245</u>



half of the countries faced a delay of one month in connectivity with the world.¹⁸ According to World Bank projections, Guinea, Liberia, and Sierra Leone, which were the three most affected countries of the 2013-16 outbreak, lost \$2.2 billion in economic output. This led to lower investment and loss of substantial growth inthe private sector, the agriculture sector, as well as cross-border trade.¹⁹ One study published in 2018 put the cost of the entire outbreak at a whopping \$53 billion due to the fact that it accounted for thelong-term impacton healthcare workers, EVD survivors, and also added the "value of statistical life" to the estimate.²⁰ A report by theUnited NationsDevelopment Group – Western and Central Africa stated that the impact on the GDP, poverty, and food security of the 15 West African countries was going to pose serious problems to the region. The report stated that, "The EVD will reduce GDP growth by 0.8 percentage points on average between 2015 and 2017. A loss in around 1.2 percent of the region's GDP on average poses a serious challenge. The loss of aper capita income of US\$18.00 in a region where most of the population livebelow the poverty line of US\$1.25 per day has serious consequences on the

people."²¹ The World Bank's report on the socio-economic impacts of Ebola in Sierra Leone shows that two out of every three households continue to face food insecurity,²² and the report on Liberia states that food insecurity continues to

¹⁸ Poletto, C., Gomes, M. F., Pastore y Piontti, A., Rossi, L., Bioglio, L., Chao, D. L., Longini, I. M., Halloran,

M. E., Colizza, V., & Vespignani, A. (2014). Assessing the impact of travel restrictions on international spread of the 2014 West African Ebola epidemic. *European communicable disease bulletin*, *19*(42), 20936. <u>https://doi.org/10.2807/1560-7917.es2014.19.42.20936</u>



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¹⁹ Centre for Disease Control and Prevention. (n.d). Cost of the Ebola Epidemic. Retrieved from https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/cost-of-ebola.html

²⁰ Huber, C., Finelli, L., & Stevens, W. (2018). The Economic and Social Burden of the 2014 Ebola Africa, Outbreak in West The Journal Infectious 218(suppl_5). ofDiseases. https://doi.org/10.1093/infdis/jiy213

²¹ United Nations Development Group - Western and Central Africa. (2015). Socio-Economic Impact of Ebola Virus Disease in West African Countries: A Call for National and Regional Containment, Recovery and Prevention. Retrieved from https://www.undp.org/content/dam/rba/docs/Reports/ebolawest-africa.pdf

²² World Bank/Chavez, D. (2015). The Socio-Economic Impacts of Ebola in Sierra Leone. Retrieved https://www.worldbank.org/en/topic/poverty/publication/socio-economic-impacts-ebola-sierrafrom leone

remain high, but situations are improving.²³ These findings only go on to prove that public health crises, when they occur in nation-states with a lack of infrastructure and response from the global community, have a severely negative economic impact on the affected region.

C. COVID-19 Pandemic

The COVID-19 pandemic, or the coronavirus disease pandemic, was declared a PHEIC by the WHO on the 30th of January, 2020.²⁴ On 31st December 2019, China informed the WHO that several cases of an unusual pneumonia had taken place in the Wuhan region.²⁵ The first cases were discovered in Finland, India, and Philippines, with each affected individual having a travel history to the city of Wuhan. At that given point, there were 7,818 confirmed cases of the disease and 12,167 suspected cases worldwide. 18 countries had already been affected outside of China and the WHO Risk Assessment globally was 'High'.²⁶ Ina matter of a little more than a month, the Director-General of the World Health Organisation declared the disease a pandemic, with 114 countries affected worldwide and 118,000 confirmed cases having been reported outside China.²⁷ Very recently, China has released a revised death toll for the city of Wuhan and has admitted that there were 1,290 more deaths due to COVID-19 than previously disclosed.²⁸ The economic impact that this pandemic has had on the world economy is something that has never been seen before. Analysts have compared this, rather, expounded upon the fact that the economic impact that the coronavirus pandemic is having is worse than the 2008 financial crisis.29

²³ Himelein, K., & Kastelic, J. (2015). Socio-Economic Impacts of Ebola in Liberia. Retrieved from https://www.worldbank.org/en/topic/poverty/publication/socio-economic-impacts-ebola-liberia

²⁴ World Health Organisation. (2020). *Statement on the second meeting of the International Health* Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). Retrieved from https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-ofthe-international-health

⁻regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov) ²⁵ Al Jazeera & News Agencies. (2020). *Timeline: How the new coronavirus spread*. Retrieved from https://www.aljazeera.com/news/2020/01/timeline-china-coronavirus-spread-200126061554884.html

²⁶ World Health Organisation. (2020). Novel Coronavirus(2019-nCoV) Situation Report - 10. Retrieved





from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200130-sitrep-10ncov.pdf?sfvrsn=d0 b2e480_2 ²⁷ World Health Organisation. (2020). WHO Director-General's opening remarks at the media briefing on COVID-19 11 March 2020. Retrieved from https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefingon-covid -19 -- 11-march-2020 ²⁸ Al Jazeera. (2020). China's Wuhan revises coronavirus death toll up by 50 percent. Retrieved from https://www.aljazeera.com/news/2020/04/china-wuhan-revises-coronavirus-death-toll-50-percent-20041704224 1<u>868.html</u> ²⁹ World Economic Forum & IMF Blog. (2020). The IMF explains the economic lessons from China's

fight against coronavirus. Retrieved from <u>https://www.weforum.org/agenda/2020/03/imf-economic-lessons-from-china-fight-against-coronavirus</u> China's economy has been the most affected one, ending its half-century growth and leaving a lot for the \$14 trillion economy to recover from.³⁰ Not only this, but stock markets globally have taken a plunge, with one of the most dramatic falls being noticed in the first week of April, as can be seen in the accompanying

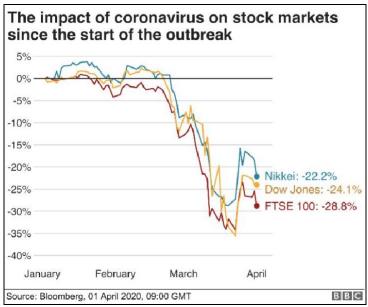


figure. Travel restrictions being imposed by more than 100 countries at the end of March, and several nations going into government-mandated lockdown has led to a loss in number of days of work and a consequent loss in wage. The US is seeing a record high in unemployment, while China has had to go through a dropof 13.5% in the industrial production in the first two months of the year. The Organisation for Economic and Cooperative Development has downgraded its growth forecasts drastically for the

year 2020.³¹ The Indian government shut down most of its \$2.3 trillion economy on March 24 when a nationwide lockdown was imposed, while issuing an advisory to companies to not fire their workers or cut their wages in this time period.³² According to the UN Department of Economic and Social Affairs, in the best case scenario, the global growth would fall 1.2%. In the worst case scenario, however, the global output would contract by 0.9% instead of growing by 2.5%. The two factors on which this depends are the duration of restrictions on the movement of people and economic activities in major economies; and the actual size and efficacy of fiscal responses to the crisis.³³ All this points only to the



fact that a public health crisis of this level has most definitely caused an economic slowdown which has rarely ever been seen before. Even when the disease itself has a relatively lower mortality rate as compared to others, it is not to say that the

³⁰ Bradsher, K. (2020). China's Economy Shrinks, Ending a Nearly Half-Century of Growth. The New York Times. Retrieved from https://www.nytimes.com/2020/04/16/business/china-coronaviruseconomy.html ³¹ Jones, L., Brown, D., & Palumbo, D. (2020). Coronavirus: A visual guide to the economic impact. BBC News. Retrieved from https://www.bbc.com/news/business-51706225 ³² Dhingra, S. (2020). Don't cut salaries or fire workers during lockdown — Modi govt issues advisory. The Print. Retrieved from https://theprint.in/india/dont-cut-salaries-or-fire-workers-during-lockdown-modi-govt-issuesadvisory/386643/ ³³ Press Trust of India. (2020). Global economy could shrink by almost 1% in 2020 due to COVID-19 pandemic: United Nations. The Economic Times. Retrieved from

 $\underline{https://economictimes.indiatimes.com/news/international/business/global-economy-could-shrink-by-almost-1-in}$

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 $\underline{nations/articleshow/74943235.cms?utm_source=contentofinterest\&utm_source=contentofinterest@surce=contentof$

_medium=text&utm_campaign=cppst

economic impact can be anything less than severely negative. This can be attributed to the fact that the COVID-19 pandemic has caused not just travel restrictions in an unprecedented number of countries, but also the shutting downof most businesses in all countries affected, the loss of working days due to this as well as the shutting down of schools and other educational institutions, and a sharp decrease in consumption behaviour as people can only frequent essential services shops while most nation-states are in a lockdown mode.

IV. CONCLUSION

The purpose of this paper was to analyze the correlation and causation between publichealth crises and economic meltdowns. In order to do this, it was important to first choose the public health crises which would be evaluated. The H1N1 (swine flu) pandemic, which spread from North America to other countries in 2009, was the first situation. The Ebola epidemic of Western Africa was the second situation, and the ongoing COVID-19 pandemic was the third situation chosen. For the purposes of gauging a relationship, it was first important to understand what the terms 'public health crisis' and 'economic meltdown' meant. 'Public health crisis' has been established to mean a Public Health Emergency of International Concern (PHEIC), which has been defined by the WHO to constitute a situation wherein risk of spread of disease is posed to multiple countries and which requires a coordinated global effort to handle. 'Economic meltdown' has been established to include a broad set of situations wherein one or multiple countries worldwide have a negative impact on their economies due to what could be any one of a diverse set of circumstances. After understanding what these terms meant, an overview of each instance of disease outbreak as aforementioned was provided. This included a metric of factors which would be examined to see whether there has been any impact on the economy of



the nation(s) affected by disease outbreak (such as travel restrictions, trade restrictions, shutting down of business places and educational institutions).

From the analysis of each instance of outbreak, it has been concluded that there does exist a causal relationship between a public health crisis and an economic meltdown. It was noticed from the H1N1 experience, which was a "mild" outbreak situation regardless of being a pandemic, that there was a marginal drop in economic output due to the fact the schools had been closed down. The Ebola virus disease outbreak was indicative of the fact that there are far-reaching consequences of an epidemic in a socio-economically weak region, since affected countries are still suffering in terms offood security. The statistical value of human life, when taken into account by one study, concluded that the entire cost of the epidemic was \$53 billion. Furthermore, the ongoing coronavirus pandemic's impact is still being closely monitored by international organisations and governments everyday. But a record dip in the stock market in the first week after lockdowns were declared in many countries across the globe, and trade adversely affected by travel restrictions imposed in most countries, have caused economies to slow down considerably. While estimates change on a day-to-day basis, it cannot be contested that the present pandemic has affected global growth massively, and will continue to do so. Thus, a causal relationship can easily be stablished between public health crises and economic meltdowns. The degree of the same depends on several factors such as efficiency of healthcare services and coordinated global efforts, but the basic relationship between the two concepts cannot be contested.