The 2020 PPP: Profit, Politics , and Pandemic

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There have been enough dire predictions over the last ten years about an imminent pandemic, but the powers that be all over the world took little notice.[1] The long-anticipated mystery disease finally arrived in the Hubei province of China in late 2019. Its arrival was first suspected by Li Wenliang, an ophthalmologist at the Wuhan municipal hospital. He was censored for voicing his suspicion, but in an indirect confirmation, the Wuhan municipal health commission reported 27 cases of viral pneumonia the next day. Ironically, Li Wenliang was one of the first victims of the mystery disease now named COVID-19. At the time of writing this article (September 2020), COVID-19 has infected more than 26 million people globally and about 4 million in India. The official numbers of fatalities worldwide and in India are more than 800,000, and 68000, respectively. The disruption to the world economy has been severe, the world output falling by a -3 % with a -6% growth for the developed countries. The latest quarterly growth rate of the Indian economy is at a record low of almost -25%.

Scientists must have the trust and respect of the people if they want their profession to be valued by society. To earn that trust they must provide simple answers to basic questions with humility. First, were there specific warning signals of an oncoming pandemic and if so, how serious were they? Second, what were the gaps in science, medical industry, and health care systems that allowed COVID-19 to inflict such an unprecedented damage with no end in sight? Finally, what roles did economics and ideology play in creating those gaps? Answers to these questions, to begin with, must be sought in what was known about similar viral infections and pandemics before the arrival of COVID-19.

Two recent books provide a sweeping history of past pandemics and their deep and lasting socio-political impacts, starting with the bubonic plague.[2] Scientific studies of viruses that are transmitted from bats to animals, however, started only about fifty years ago. How dangerous such infections

could be was first recognized in 1976 when there was an outbreak of Ebola in Africa. Since then there have been several outbreaks of Ebola in many African countries. Another viral disease that comes from bats is Nipah. The disease first surfaced in 1998 when it infected and killed several people in Malaysia. Since then other south Asian countries including India and Bangladesh have had scary but limited outbreaks of Nipah.

Two other diseases caused by viruses whose natural hosts are bats were known before COVID-19. They belong to a group of viruses called Coronavirus. The first such virus, SARS-CoV, is supposed to have come from bats to palm civets and then to human beings. Patients suffering from this infection showed "severe acute respiratory syndrome", and the disease was named SARS. Although most SARS infections were in China, Hong Kong, and other countries in the Far East, there were cases reported from Canada, US, Europe, and Australia too. In 2003, over a period of six months, more than eight thousand people were infected and about eight hundred died.

The second Coronavirus named MERS-CoV came from bats to camels and then infected human beings. The outbreak started in Saudi Arabia in 2012, spread to 24 countries, infected about 2500, and killed about 850. There was another 'flu pandemic which occurred between SARS and MERS, in 2009. The virus called H1N1 which caused that 'flu outbreak was a combination of viruses from pigs, birds, and humans. The World Health Organization (WHO) declared it a pandemic in June 2009 and it lasted till August 2010. There were more than 1.5 million laboratory confirmed cases with a little more than 18 thousand deaths.

This background probably prompted WHO to set up an advisory group consisting of microbiologists, zoologists, and public health experts. The group had met in February 2018. Their remit was to draw up a priority list of dangerous viruses against which there are no known drugs or vaccine under development. The list drawn up included SARS, MERS as well as "Disease X" – a disease that may be caused by an unknown virus, or a variant of a known virus. [3]

Interestingly, although the arrival of a pandemic was inevitable, no preventive action was taken till such time as what followed: the arrival of COVID-19. Peter Daszak, the chairman of the Forum on Microbial Threats at the National Academy of Sciences, Engineering and Medicine, and a member of WHO's advisory group, has this to say: "prevention was very possible. But we didn't do it. Governments thought it was too expensive. Pharmaceutical companies operate for profit". This statement in a nutshell shows how a free market ideology under self-serving politics that peddle innovations as profit making machines can hurt society deeply and permanently. It is an ideology that makes science chase fame and profit but does not help it to deliver innovations that save lives and deliver public good.[4]

Unethical practices by big pharmaceutical companies in the recent and distant past are well documented.[5] In the past decade alone, Pfizer, GlaxoSmithKline, Merck, Eli Lilly etc. collectively paid about 10 billion dollars in fines in the US courts for wrongdoings. Based on the average cost of inventing and developing a new drug, a preventive vaccine against SARS, or MERS or even COVID-19 would have cost them less than one fifth of what they paid as fines.[6] The first structure of a SARS virus protein was available in the public domain as early as 2003. Developing a vaccine or a drug based on this lead would not have invited any royalty obligations.[7]

Initially, countries worst affected by COVID-19 turned out to be five of the wealthiest nations of the world. The USA, UK, Italy, France, and Germany accounted for almost two thirds of the infections and fatalities. The governments of these countries could have used their existing and enviable science and technology platforms for the development of preventive measures. By appropriate regulations, and incentives, they could have ensured the participation of the pharmaceutical industry in the exercise. The successful Ebola vaccine (rVSV-ZEBOV) program first developed by the public health agency of Canada and then commercialized by Merck could have been used as a model. [8]

Politicians however were as always more focussed on how to gain and retain power, than on public welfare. Preventive measures against a pandemic that has not yet arrived, augmentation and

strengthening of the public health facilities for such for an emergency, etc. were given little attention if any. In the words of an ex-chief scientific advisor to the U.K. government: "I recall a practice run for an influenza pandemic in which about 200,000 people died…We learnt what would help, but did not necessarily implement those lessons". [9]

Across the US and Europe, the protective care equipment and the number of ICU beds that were needed to meet the surge of patients fell short. This contributed significantly to the spread of the pandemic and fatalities. Italy apparently had just a little over half of the average of what the other developed countries of OECD had. Many of the US nursing homes and long-term care facilities had severe shortages of personal protective equipment and testing facilities. This compromised the health and safety of the front-line health workers and the residents. By the beginning of May, almost a quarter of the total fatalities in the USA, were in these institutions.

To put matters in perspective, comparative studies on health care systems of 11 countries such as USA, Canada, Australia, China, UK, Germany etc. were carried out by independent policy makers before the pandemic.[10] The comparisons and rankings were done on several criteria such as, health-insurance coverage, staffing levels in hospitals, prices of medicines etc. The United States came right at the bottom of the list, just above China. India did not find a place in this study. However, World Bank data shows that over almost two decades, 10 years of UPA and 7 years of NDA, the per capita health expenditure in India increased by only about 33%. In contrast in the other three BRICK countries, Brazil, Russia, and China, it went up by about two to three times.

A disease becomes an uncontrolled pandemic when infections increase exponentially and cross many national boundaries in a short time. Exponential growth basically means that by repeating a simple rule time and again, exceptionally large numbers are created from small numbers. With a doubling rate of one week and starting with two, four million infections are expected by about the middle of the fifth month. This basically is what happened with COVID-19 till about mid-May.

The 27 confirmed viral pneumonia cases in Wuhan on 31 December were just the tip of the iceberg. The Wuhan lock down was announced on 23 January. By 30 January laboratory-confirmed cases were reported from 22 other countries and WHO called COVID-19 a global health emergency. On 11 March, after another forty long days, the alarm level was raised to the "pandemic" stage. In the absence of a vaccine, drugs, and adequate public health facilities most countries followed the century old "lock down" model with varied levels of stringency. The Indian Government invoked "The National Disaster Management Act" from the midnight of 24 March. One could only speculate on the course of actions of the politicians in an alternative scenario, where instead of the rich countries the fatalities were limited mainly to the developing part of the world. After all malaria, tuberculosis, and HIV collectively kill over 2.5 million people in the poorer parts of the world every year and in 2009, the year of the H1N1 pandemic, the figure was almost five million.[11]

Working out the molecular-level genetic and surface protein descriptions and naming the new virus SARS-CoV-2, were the easiest part of the innumerable scientific challenges. Developing quick and reasonably reliable tests expectedly took their own time because even the "reverse transcription polymerase chain reaction (RT-PCR)" tests can and do produce false positives.[12] As late as the end of May, the lack of easy access to reliable tests and their wide implementation added greatly to the confusion, panic, and explosion of misinformation. Even today the elementary pitfalls in most of the statistical data sets of COVID-19 are rarely, if ever, commented upon.[13]

Epidemiological studies involve computer-based modelling and simulation based on statistical data. Like all modelling exercises, if the basic assumptions and data are faulty, it becomes a classic case of "garbage-in-garbage-out". In the aftermath of the H1N1 pandemic many of the official numbers were seriously questioned. Studies suggested that far more people had died in the less developed parts of the world than what was officially confirmed.[14] It is a certainty that for COVID-19 too, much of the data and their interpretations will have to be drastically revised. [15] It is clear though that the poor have borne, and will bear, the brunt of the economic meltdown, illnesses, and deaths. Estimates suggest

more than 100 million to 200 million people will fall into poverty, with Nigeria, India and Democratic Republic of Congo being the major contributors to these shocking numbers. UN's International Labour Organization (ILO) estimates about 400 million workers from India's informal sector are likely to be pushed deeper into poverty due to the pandemic.[16]

The level of unpreparedness against COVID-19 showed how for decades ideology has pampered celebrity science and profit making.[17] The same ideology has also made science irrelevant to innovations that deliver social good. Despite liberal funding over the last two and a half decades, when COVID-19 arrived, neither "biotechnology" nor "nanotechnology" could offer the scientific platform, let alone the "technology", to fight COVID-19 effectively. The rush for making money and international deal-making in the name of vaccine development programs has already begun. One can only hope that the efficacy and safety of the treatments are not compromised in this relentless chase for profit.

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