



China has been described as an authoritarian system wrought with deception.¹ Its economic goods have been used despite the lack of trust – but even those takers are catching on. More concerning, it has been observed censoring research into the origins of the COVID-19 pandemic. Its size and secrecy alone can nurture the imagination of how many labs, and military bases are located within the communist state. Not to mention, it has already been known to cross the line before - gene editing babies.² The source of SARS-CoV-2 related to bioweapon conspiracies or a lab leak from China is worth reviewing. There's already enough risk of panic spreading during a pandemic. It begs for answers, so we may at least reduce one source of anxiety: pandemic origins.

What is what we are up against: U.S. State Department summoned the Chinese ambassador to the U.S. to protest against comments by a Chinese foreign ministry spokesman who had suggested the U.S. military might have brought the coronavirus to Wuhan.³ Senator Tom Cotton, R-Ark., appearing on Fox News, suggested that the virus was the result of a botched bioweapons program out of China. A writer in Palestinian Al-Quds Daily contends Coronavirus was a biological weapon employed by the U.S. and Israel against China and Iran.⁴ Others suggest the virus came from a Wuhan lab, performing legitimate research, where the US state department has already been looking deeply into concerns with safety.⁵

Regarding the bioweapons theory, that's easier to put to rest. For a weaponized form of virus to be developed, this would require many months of complete secrecy, using standard gene editing technology. With advanced CRISPR/Cas systems, this could be shortened to weeks; however, even this is virtually impossible in the current scenario. Why in secret? Because of the Biological Weapons Convention (BWC) of 1972, making bioweapon use a war crime. As of August 2019, 183 states have ratified

viral origins is to highlight the differences between bioweapons and viral pandemics. Foremost, bioweapons affect targeted groups. They also have a genetic signature of artificial engineering. And they exhibit rare forms of transmission, causing an abundance of cases of unexplained deaths in a short period.

One of the greatest dangers of a bioweapon as a non-conventional non-kinetic weapon of mass destruction (beyond the lethality) is the disruption to the function and security of its target. Nature in this way can create the same havoc. Panic is one of the greatest threats by way of biological warfare and pandemics. When an infected group realizes the casualties are of an unknown source, alarm set in, rumors fly and tension mounts. Family members push their conspiracy theories to the closest ones listening. And it doesn't take long for talk to walk out the door. Because of this disruption, we are witnessing – and just at the beginning – of an economic crisis not equaled for decades. Fear drives a further burden to the already encumbered medical community. It behooves us to have a controlled, strategic effort to survive.

#Cautionwithoutpanic, and #atteningthecurve are two popular trending hashtags, and appropriately so. The first instructs the use of caution, while avoiding the perils of panic. The second is more scientific, and describes the epidemiologic effect of measures to mitigate infection spread, such as social distancing, hand hygiene, and quarantine. In effect, this lowers the number of cases, thus “attening” the graph of cases over time. This is what needs to happen. Nobody yet knows the exact risks of COVID19, but we can see the damage it causes. Psychologist Steven Taylor at the University of British Columbia, author of *Psychology of Pandemics*, describes well the contagiousness of panic. “When people are told something dangerous is coming, but all you need to do is wash your hands, the action doesn't seem proportionate to the threat,” he said. “Special danger needs special precautions.”¹⁹ People try to take control, hoarding goods, grocery stores are cleaned out, and ER lines grow by demands of testing. People are social creatures; they look to each other for behaviors.

They feel the pressing urge to “do something”. So now more than ever it is the role of physicians, health care workers, and leaders to take the firm resolve to be a beacon of calm. We know what we need to do. Let science be our guide in a manner that maintains hope, and reach the shortest path back to normalcy.

Both bioweapons and natural pandemics may or may not have a vaccine available. The effectiveness is determined only by the host immune response, which is different for every type of infection. Just like the common flu, coronaviruses can have multiple strains with increasing or decreasing virulence changing over the months. A vaccine will take at best months longer to develop. At worst, it will never pass beyond Phase I trials - as is the case with the SARS vaccine, now 18yrs later.²⁰ Fortunately, we had a head start. Ironically, it was from the same suspect Chinese labs studying coronaviruses. By their research the genome was readily sequenced, cutting months off vaccine development.²¹ China may continue their cover up, but we must continue our own investigation. And who knows, the same country where the pandemic started, could be the same place it ends, if vaccine development in China progresses as it has. Their research gave the vaccine a lead, and might be the source of answers.²² This disease could ultimately come full circle. While maybe it didn't start in a lab, we can remain hopeful that a lab will bring the end.

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