Commentary on "COVID-19 Pandemic Origins: Bioweapons and the History of Laboratory Leaks"

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In his perspective entitled "COVID-19 Pandemic Origins: Bioweapons and the History of Laboratory Leaks," Dr Dacre Knight has endeavored to provide an evidence-based and historical contextual rejection of speculative theories regarding the origin of the coronavirus disease 2019 (COVID-19) virus as a research bioweapon that was accidentally leaked from a state-run laboratory in Wuhan, China, causing a global pandemic.[1] Within the limitations of confirmed scientific information, these conspiracy theories are debunked by the author, and his arguments are certainly cogent and understandable. During his military service, Dr Knight gained experience in bioweapons defense, which strengthens this perspective.

For well over a year now, founded and unfounded claims about the possible origin and dissemination of the virus as a research bioweapon have persisted. Pundits and experts alike have presented various pieces of evidence that they believe support or refute their theories of origin and purpose. Clear-thinking, respected healthcare professionals like Dr Knight are welcome voices for clarity in discerning what is true, what is possible, and what cannot be the case. The importance of evidence-based analyses cannot be overstated, as sociopolitical implications loom large in global discussions.

For most Americans, including healthcare professionals, confusion continues to occur with respect to the origination of COVID-19 as a bioweapon because of limitations to access in the Wuhan, China community. Properly conducted epidemiologic studies by independent public health experts is a prima facie principle for determining what actually occurred in an outbreak, epidemic, or pandemic. Without such in-depth investigations, it is difficult to prevent or mitigate future, similar infectious disease events. Access to "ground zero" of the pandemic has not been forthcoming, and this limitation not only perpetuates the conspiracy theories but it also limits a full understanding of the origins of the initial outbreak.

To date, official and unofficial agencies in the United States and abroad continue to propose new or additional theories of the origin and method of release into the human environment of the COVID-19 virus. How do we as physicians and biological scientists sort through these theories to not only understand the epidemiology ourselves but also to somehow educate our patients who express concern about COVID-19 as a biological warfare weapon? Dr Knight has provided considerable evidence against the COVID-19 virus being man-made for the purpose of weaponization; he also cites genetic data refuting the possibility of a laboratory leak of a genetically manipulated virus. We want to believe this evidence and hope to see additional confirmations from persistent and respected experts in the field. Indeed, we must "follow the science" as it continues to unfold.

Still, we have the recent memory of the buildup of anthrax spores, with a functional delivery system, in Iraq before the Gulf War (1991). Although no anthrax bioweapon was used against Allied forces, the threat was sufficient for the Department of Defense to send several hundred thousand doses of anthrax vaccine to the Middle East for the inoculation of troops at risk. As a deployed military medical officer during the Gulf War, I received anthrax vaccine, as well as botulinum toxin vaccine, as countermeasures. Medical officers usually were given the first doses and then were expected to explain the importance of the vaccinations to the military personnel designated to receive them. Few medical officers actually had much detailed knowledge about the vaccines, but because the threat was said to be real, we had a responsibility to follow orders. These measures taken in the face of bioweapon threats may have some bearing on the current concerns regarding COVID-19 as a bioweapon, even if the evidence continues to support Dr Knight's theories. We must be prepared for the risk of biological weapons used against us.

Our first lesson from COVID-19 is that we must never let down our guard against naturally occurring or genetically engineered biological agents. We have seen and continue to see the devastating effects they can have on global health. The second lesson is that countermeasures, including vaccinations and therapeutic drugs, must be under continual research and development, so that the lead time from onset of the disease outbreak to vaccine or drug testing, manufacturing, and delivery is as short as scientifically possible. Third, we must have effective methodologies for rapid epidemiological investigation of a serious outbreak, with the full cooperation of the nation in which the biological agent was discovered. COVID-19 public health epidemiology has been seriously curtailed by issues of transparency and confused by political overtones. The fourth lesson is that we as physicians

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must electively and prospectively understand the fundamental biology of microbial outbreaks that could quickly become serious and widespread, and to help our patients understand the basics of this epidemiology. Our patients should rightfully hold us responsible for helping them understand and cope with the downstream effects in their lives.

Dr Knight has presented excellent evidence for helping us, as healthcare professionals, understand the likely etiology/origin of this pandemic, and we can share this information with our colleagues, patients, and friends. The COVID-19 pandemic has been devastating, causing so many unnecessary deaths and health issues, and we do not need to be further stressed by worry that the virus may have been purposefully used as a biological weapon.

Reference

1. Knight D. COVID-19 pandemic origins: bioweapons and the history of laboratory leaks. *South Med J* 2021;114:465–467.