

1-1-2022

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### NSUWorks Citation

Speth, Robert C., "An opinion on the impacts of COVID-19 worldwide" (2022). *HPD Articles*. 40.  
[https://nsuworks.nova.edu/hpd\\_facarticles/40](https://nsuworks.nova.edu/hpd_facarticles/40)

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#### Article Info



#### Article Type:

Letter to the Editor

## An opinion on the impacts of COVID-19 worldwide

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Received 11 Oct. 2021, Accepted 22 Oct. 2021, ePublished 1 May 2022

Like the misnamed Spanish Flu pandemic of 1918 and the Bubonic Plague (Black Death) of the 14th century, the COVID-19 pandemic will go down in history as yet another catastrophic communicable disease event that brought humankind to its knees. But, unlike previous pandemics, for which we had few means to prevent their spread, this pandemic could have been squelched at its onset. Indeed, in 2008 Ren et al,<sup>1</sup> alluding to bats as a reservoir for the SARS-CoV-1-mediated epidemic stated "... it is not unreasonable to conclude that bats are a natural mixing vessel for the creation of novel CoVs and that it is only a matter of time before some of them cross species barriers into terrestrial mammal and human populations." Tragically, the Trump administration shuttered the National Security Council Directorate for Global Health and Security, that was tasked with preparing the US for pandemics the year before the pandemic began. Had we been more proactive in the area of emerging infectious disease research, we might have had a vaccine available prior to the onset of the pandemic that could have kept it as minor epidemic. Regrettably, self-serving politicians seeking to benefit from the short-term gains of a coverup, as well as decreased federal spending, forfeited the opportunity to control this pandemic, allowing it to spread worldwide.

Fueled by misanthropic politicians who continued to deny medical science, COVID-19 is now the most debilitating, lethal pandemic in more than 100 years, killing more Americans than any circumstance since the Civil War of 1861-65. It continues to resonate with increasingly transmissible and lethal variants extending deep into the Greek alphabet with no end in sight.

A rare second chance to control this pandemic developed with unprecedented speed in the form of vaccines that can immunize against COVID-19. While a majority of the population embraces this means of protection against this

disease, massive disinformation campaigns coupled with the insidious pre-existing condition of anti-vaxxism, has crippled this effort to control the pandemic. It is no longer just measles vaccine that is being slandered; all vaccines are either suspect or viewed as government overreach in the eyes of those who are the victims of the false claims of the disinformationists. Lack of vaccine availability in poorer nations has also contributed to the spread of COVID-19, providing continuing opportunities for it to develop novel variants with the potential for even greater transmissibility and lethality.

Regrettably, those who maliciously spread disinformation about the COVID-19 pandemic can be much more provocative than those who disseminate accurate information, as they are not limited by the constraints of honesty, accuracy, and truthfulness of their pronouncements. An oft-paraphrased quote attributed to Mark Twain is that "A lie can travel halfway around the world before the truth gets its shoes on." The denialism of the massive public health threat of COVID-19 now extends to rebuttal of the most basic public health safety measure, wearing masks, to cover one's mouth and nose, to decrease the spread of the disease in aerosols. Alas, COVID-19 has become a social,<sup>2,3</sup> as well as a communicable disease.

Considerable hope has been placed upon the ability of monoclonal antibodies to treat COVID-19 such that many vaccine-hesitant COVID-19 susceptible individuals expect to receive a treatment of monoclonal antibodies to make the disease less debilitating. However, this treatment is costly, even if the antibodies are provided for free. Its efficacy is short-term, doing little to prevent the spread of disease. Monoclonal antibodies are also in short supply, so not everyone who seeks this treatment will be able to receive it. In the meantime, healthcare workers who are already stretched to the limit by the crushing load of COVID-19 patients to whom they are administering other

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therapies, now have additional patients whose refusal to be vaccinated and obey mask mandates threatens to overload the healthcare system.

An incredible irony is that the “receptor” for SARS-CoV-2, is also an enzyme – angiotensin-converting enzyme-2 (ACE2) – that counteracts the pathogenicity of this virus by degrading a hormone – angiotensin II (Ang II) - that contributes to the inflammatory “cytokine storm” response caused by SARS-CoV-2.<sup>4,5</sup> The interaction of the spike protein of SARS-CoV-2 with ACE2 provides yet another potential target for therapeutic intervention to prevent COVID-19. Development of drugs that either bind to the “receptor binding motif/receptor binding domain” of the SARS-CoV-2 spike protein, or to the domains of ACE2 to which the virus binds, could prevent the vast majority of viral particles from infecting cells that express ACE2.<sup>6-8</sup> This would minimize the ability of the virus to replicate and spread to other cells in the body, giving the immune system the time it needs to mount an effective defense against this pathogen.

Efforts are underway to develop drugs that will compete with SARS-CoV-2 for ACE2 to prevent its virulent cytotoxicity and replication. If this third chance comes along, will it be embraced, allowing us to finally stop this virus from its continued spread? Or, will the misanthropes once again prevail with their viral deceit, sustaining this pandemic indefinitely?

A question that plagues me is: if drunk driving is now universally condemned, because it puts the lives of others in danger, how is it that refusing to be vaccinated and/or wear a mask in public, which poses an even greater danger

to others than drunk driving, is not also universally condemned?

#### Ethical statement

Not applicable.

#### Competing interests

None.

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