

Challenges for the Biden presidency

US President-elect Joe Biden promises a return to scientific evidence-based decision making, but will it matter in a world poisoned by disinformation?

Many in the US breathed a sigh of relief when the tally of electoral college votes surpassed the 270 threshold needed to call the US presidential election for Joe Biden. Indeed, many US allies likewise welcomed the election results, which project an end to the often-chaotic term of President Donald Trump. For four years, the Trump administration cast misleading claims on what is acceptable fact and disparaged scientific experts, first on climate change and, more recently, in response to the spreading COVID-19 pandemic. This rampant misinformation campaign led to high levels of public doubt and distrust in government officials, arguably at a time of health and economic crises during which expert advice is most needed. Biden will thus inherit a much different 'bully pulpit' environment when he moves into the White House on January 20th.

Biden has vowed to bring the US back into global organizations, including the World Health Organization and the Paris Climate Accord, to combat common threats to our health and environment. He campaigned on the message that he would take a more robust and trustworthy response to the ongoing COVID-19 pandemic and convey credible information to the American public. Indeed, Biden has already provided a detailed [plan](#) for steps that he will take on day one following his inauguration. Key to this goal is communicating up-to-date and accurate scientific information to the public delivered by infectious disease and healthcare experts.

The US is currently experiencing a surge of COVID-19 infections, exceeding over one million new cases per week, which is straining hospital capacity and pushing healthcare personnel to the limit. Tellingly, the steepest rise has been in states where misinformation on the potential severity of SARS-CoV-2 infection is high and where local government officials were reluctant to impose mask mandates and strict guidelines on social distancing to reduce

viral spread. Notably, a [recent study](#) in *Nature Human Behaviour* reports that these two non-pharmaceutical interventions are among the most effective in reducing the reproduction number (R_t) of COVID-19 cases. However, the US is not alone in experiencing heightened SARS-CoV-2 infection rates, as witnessed by the second wave of COVID-19 striking elsewhere in the world. Worldwide, the number of COVID-19 cases currently exceeds 66 million according to the [COVID-19 dashboard](#) curated by data scientists at Johns Hopkins University. Despite a number of interventions that clinicians have found to reduce the mortality rate among patients with COVID-19, this figure is still hovering at an unacceptably high frequency of over 2% in many regions. Yet these figures do not address the substantial morbidity experienced by many patients with COVID-19, the 'long-haulers,' who are still battling sequelae stemming from SARS-CoV-2 infection. These risks cannot be denied or wished away.

More encouraging news has emerged on the efficacy of COVID-19 vaccines in phase 3 clinical trials, including the lipid-encapsulated mRNA nanoparticle vaccines developed by Moderna and Pfizer-BioNTech and the adenoviral SARS-CoV-2 subunit vaccine developed by researchers at Oxford University and AstraZeneca. The mRNA vaccines achieved >95% protection over placebo controls in large randomized trial studies. Multiple other COVID-19 vaccine candidates are likewise in the pipeline. Moderna and Pfizer have applied for emergency fast-track approval at the US Food and Drug Administration, and the UK Medicine & Healthcare Regulatory Agency has already approved the Pfizer vaccine for use in Great Britain. Here, given the enormity of vaccine coverage needed to protect a global population of over 7.8 billion, government officials will have to decide who will receive the first batches of the vaccines and communicate these decisions to the public

with transparency by laying out the rationale for such priorities and to ensure a fair and equitable rollout. Additionally, massive logistical planning (personnel, equipment and tracking) is required for efficient delivery of these vaccines to the general population. Providing transparency when announcing how this vaccination program will occur is mandatory.

Given the rapid progress observed, from identifying the genetic code of SARS-CoV-2 in January 2020 to possessing effective vaccines that can prevent disease onset in December 2020, a skeptical public also needs to be reassured that the vaccines are safe. However, in the case of Moderna, similar mRNA-based vaccines were already in clinical trials against viruses such as human cytomegalovirus, parainfluenza virus and Zikavirus prior to the emergence of SARS-CoV-2. A recent Gallup poll in the US suggested that only ~58% of Americans would be willing to get a COVID-19 vaccine jab; the willingness to be vaccinated differed by age, gender, education, ethnicity and political party affiliation. This poll was conducted in late October, prior to the announcement of the Pfizer and Moderna vaccine clinical trial results, and overall responses were higher than those recorded a month earlier; therefore, it is conceivable that vaccine uptake may increase. Nevertheless, there remain substantial numbers who fear the vaccine more than the virus. Biden could lead by televising his own immunization with the jab.

Following the assault on science by Trump and his allies, Biden and his administration need to allay misconceptions and combat falsehoods with data-driven evidence, careful planning and transparency and by voicing empathy with those who disagree. Biden may be the right man for the moment. □

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