Letters to the Editor

The COVID-19 Pandemic Is a Battle Against Disease, Fear, and Misinformation

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To the Editor: As a family physician from the United States involved in the coronavirus disease 2019 (COVID-19) pandemic response in China, I have been struck by the threefold battle that health care professionals are fighting globally, not only against the disease but also against fear and misinformation.

The immense volume of new case reports, shifting diagnostic criteria, and treatment protocols challenge even those health care professionals with the sharpest information skills. Our anxieties about contaminating ourselves and exposing our colleagues and loved ones are compounded by shortages of personal protective equipment and deaths of colleagues that remind us of our mortality.[1] Lastly, the cloud of misinformation and online rumors requires us to be actively engaged as sources of reliable information for the public, so as not to let other voices mislead the public discourse and our political leaders.

As we face these challenges, family physicians must redouble our efforts to advance our profession for the well-being of our communities. Despite our best individual efforts, the only way to fulfill our mission of caring for all, especially the vulnerable, requires a whole-of-society coordinated approach, including the full support of government and private sectors.[2,3] Despite protective physical barriers, we must not insulate ourselves emotionally from our patients but allow ourselves to grieve alongside their loved ones. We also need to engage in difficult conversations with one another, to affirm and explore rather than suppress our emotional responses to demanding situations, helping one another cope with the deeply personal toll of this pandemic.

I am honored to have witnessed the bravery and solidarity displayed by colleagues who volunteered to go to Hubei province. Others tirelessly treated patients in our hospital's infectious disease ward and screened thousands of patients with symptoms in fever clinics, ports of entry, and communities. As we grieved the loss of one young physician in our province, we also celebrated the release from our hospital of a successfully treated three-month-old girl who had contracted COVID-19. Despite our relief when the last confirmed patient with COVID-19 in our province was discharged, our vigilance continues.

In times like these, we as a global health care community must advocate for and protect the vulnerable, comfort those who are grieving, and honor the many brave colleagues who are willingly putting themselves at risk. I wish you all courage and safety and look forward to the day when we can celebrate a hard-won victory together after a long and challenging fight.

Timothy N. Stephens, MD
Haikou, Hainan, China
Email: timothy.stephens@tufts.edu

Author disclosure: No relevant financial affiliations.

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This series is coordinated by Kenny Lin, MD, MPH, deputy editor.

Beware of False-Positive Results with SARS-CoV-2 Antibody Tests

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To the Editor: Antibody testing will become increasingly important as the coronavirus disease 2019 (COVID-19) pandemic progresses. In the setting of highly selected antigen testing, antibody tests will help public health officials

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TABLE 1

Antibody Testing for COVID-19: False-Positive Rates by Population Prevalence and Test Specificity

Prevalence of previous SARS-CoV-2 infection	False-positive rate	
	Cellex test (sensitivity = 94%; specificity = 96%)	Hypothetical SARS-CoV-2 antibody test (sensitivity = 90%; specificity = 99%)
1%	80.8%	52.4%
5%	44.7%	17.4%
10%	27.7%	9.1%
20%	14.5%	4.3%
30%	9.0%	2.5%
50%	4.1%	1.1%
70%	1.8%	0.5%
90%	0.5%	0.1%

COVID-19 = coronavirus disease 2019; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

Information from reference 1.

determine the extent of previous infection, even among asymptomatic individuals and those with mild symptoms who did not seek medical care. Antibody testing is also likely to be part of the foundation for determining the pace of relaxing current physical distancing measures. Finally, clinicians will use antibody testing to counsel individual patients about whether they have recently had COVID-19 or to determine their immunity.

New rapid antibody tests for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19, are qualitative. Analogous to home pregnancy tests, these antibody tests are positive or negative. By varying the cutoff that defines a positive test result for immunoglobulin G (IgG) or IgM, test developers can choose to favor a high sensitivity, a high specificity, or take a balanced approach. Cellex, the first antibody test approved by the U.S. Food and Drug Administration for the virus, has a reported sensitivity of 94% and specificity of 96%.[1] However, as we begin widespread testing in a population in which the prevalence of previous SARS-CoV-2 infection is unknown, there is a risk of false-positive results. When initially diagnosing acute infection, it is important to avoid false-negatives because this can falsely reassure patients and hinder appropriate contact tracing and isolation. However, when assessing whether patients had a previous infection and may be immune, it is important to avoid false-positives so that patients do not think they are immune when they are not.

Table 1 summarizes the false-positive rates at various population prevalence for the Cellex test and for a hypothetical test that is 90% sensitive and 99% specific.[1] At relatively low population prevalences, which likely reflect current conditions in the United States and elsewhere, we would argue that false-positive rates are unacceptably high with the Cellex test. Many of the other tests with provisional approval by the U.S. Food and Drug Administration have not been appropriately evaluated for accuracy.[2]

Therefore, we encourage family physicians to look for appropriately validated antibody tests with adequate specificity (ideally 99% or higher), even if it means sacrificing some sensitivity. Also, they should encourage laboratories to report test results in a way that reflects the local population prevalence based on widespread testing and include the false-positive rate. This information is needed to help family physicians better inform shared decision-making regarding previous infection and return to work or school.

Editor's Note: Dr. Ebell is deputy editor for evidence-based medicine for *AFP*.

Mark H. Ebell, MD, MS
Athens, Ga.
Email: ebell@uga.edu

Henry C. Barry, MD, MS
East Lansing, Mich.

Author disclosure: No relevant financial affiliations.

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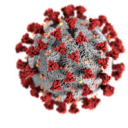

Coronavirus (COVID-19) Resources
Available at https://www.aafp.org/afp/COVID-19.html