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PERSPECTIVE: PART II

DIAGNOSTIC UNCERTAINTY IN THE AGE OF COVID-19

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As the world faces uncertainties in the midst of the COVID-19 global pandemic, domestic panic has replaced the cautious curiosity once reserved for the otherness of an outbreak burgeoning in a distant continent viewed safely through headlines. Americans now have the charge, and time, to reflect seriously on this illness via social distancing, work disruption, and the absence of many springtime stalwarts including sporting, academic, and cultural events. Mainstream and social media have highlighted stories of sadness and optimism in this chaotic time, yet a prevailing theme is uncertainty. Much of this uncertainty relates not only to the medical outcomes of those infected but also to whether or not one actually is infected. The expectation of timely and accessible diagnostic testing has been a concern of many frontline practitioners and is shared widely via local discussion and social media. The panic caused by the inability to obtain testing is an unexpected side effect colored by the existing American healthcare landscape. If early, rapid, and affordable testing directed by Internists were available for seemingly low risk patients, we would likely have less frenzy and perhaps a better grip on the current scope of this disease.

For many Americans, the HIV epidemic stands as a testament to the convergence of modern epidemiology and public health leading to widespread testing and screening recommendations. However, the development of a reliable diagnostic test took two years from observation of the syndrome now known to cause AIDS to identification of the agent, HIV.[1] In decades since, due to international investment in outbreak surveillance and advances in testing including polymerase chain reaction (PCR), we now have the ability to identify pathogens and develop diagnostic tests much more quickly. Informed by similar viral infections, including the SARS-CoV-1 outbreak in 2003,[2] the scientific community in Wuhan, China was able to detect the novel respiratory viral syndrome known now as COVID-19 and transition to agent identification and diagnostic testing in mere weeks.[3] Amazingly, testing has included whole gene sequencing and targeted PCR allowing for near real-time tracking of disease. As containment gives way to disease mitigation in the United States, it is prudent to reflect that while such rapid testing was offered to the U.S., the CDC opted against using existing WHO technology for testing.[4]

Part of the problem relies on the changing nature of diagnostic testing in the U.S. healthcare system. Patients have previously seen their primary care practitioner to be assessed for many acute complaints. Generally, a practitioner evaluates the patient and, guided by physical exam and clinical reasoning, orders a diagnostic test if indicated. As a practicing General Internist with predominantly urgent care outpatient clinical duties, it is common for a patient to begin an appointment with a request and preconception of what testing is desired or needed. Many tests, such as thyroid function and blood count testing for fatigue, are reflexive, cheap, and clinically reasonable. Others, including advanced imaging for low-risk back pain, have plagued doctors and health systems and are markers of high cost, low value care. Nonetheless, frontline practitioners often realize that without testing, patient trust and satisfaction may decrease[5] or that patients will seek out alternatives, including other health systems or direct to consumer online testing. With persistence and time, most low to moderate risk diagnostics tests will eventually be obtained—including existing respiratory viral panels for syndromes similar to COVID-19. In part due to consumerization in healthcare, most Americans expect there to be a test for any ailment, however unreliable or expensive it might be. Therefore, when a furtive physician shrugs her shoulders and points their suffering patient toward a faceless COVID testing website or hotline, there is a palpable loss. The seriousness of the situation sets in and the once smiling but febrile, coughing patient now feels worse, distanced from a former ally in

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medicine, and faced with prospects of a grim disease and the hope for an answer.

The lack of locally available testing sends mixed messages to the public and healthcare providers alike. On one extreme, patients may incorrectly assume that if testing is not recommended for asymptomatic individuals, then the disease is either innocuous or unable to be spread without symptoms—potentially reducing adherence to social distancing. Conversely, patients may fear a test available exclusively through the CDC is a "government" initiative, with concerns about political motives or rationing. Moreover, even when a patient's longstanding clinician recommends testing, barriers to obtaining a test may erode trust. By contrast, other countries, including South Korea, provided early convenient testing for free, often from the confines of the patient's own vehicle.[6]

As weeks go on, testing will undoubtedly become easier and quicker. Similar to many other health systems, my institution has recently developed an internal test for SARS-CoV-2 with a designated testing protocol and a remote specimen collection facility away from busy primary care offices and emergency departments. With testing coordinated by local infection prevention experts, this feels like a tremendous success. It is a relief that I can now confidently identify the process map of testing and name the people involved. At the very least, I can turn my attention back toward the sick patient at hand and provide the best possible care with the knowledge I have.

This reflection does not aim to pass blame or point to a person or group responsible, but rather to shine light on the role that front-line practitioners face in addressing difficult problems. Internists are uniquely situated to both recommend appropriate care and discourage unnecessary testing; to order a treatment and to defer to specialists. We are often at the crossroads of diagnostic uncertainty and regularly succeed in the art of conveying these dilemmas to the person in front of us in a very real, patient-centered way. This is a valuable service we provide as part of the healthcare team. If, and when, the next diagnostic challenge arises, we hope to be present at the start of the conversation with accessible diagnostic testing and the support of the system at large to help guide our patient.

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