

# Contact Tracing for COVID-19: An Opportunity to Reduce Health Disparities and End the Human Immunodeficiency Virus/AIDS Epidemic in the United States

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing and contact tracing have been proposed as critical components of a safe and effective coronavirus disease 2019 (COVID-19) public health strategy. We argue that COVID-19 contact tracing may provide a unique opportunity to also conduct widespread HIV testing, among other health-promotion activities.

**Keywords.** COVID-19; HIV; AIDS; cost-effectiveness; HIV testing.

Massive severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing and contact tracing at a scale and speed never before seen have been proposed as critical components of a coronavirus disease 2019 (COVID-19) public health strategy that could, in theory, safely allow us to relax social-distancing measures and begin to bring back the world we left behind before a cure or effective vaccine is delivered. One of a number of challenges this strategy faces is that contact tracing is extremely labor intensive. Deployed in sexually transmitted infections such as human immunodeficiency virus (HIV), a recent study from New York reported costs of over \$500 per contact interviewed, with 85% of state-level costs attributable to personnel [1]. For coronavirus these efforts are simpler, but the volume of contacts—an average of 36 per positive case [2]—poses substantial logistic challenges. Digital applications and other technological supports may help, although it appears inevitable that a large labor force will be needed. Already, Massachusetts has

begun hiring to fill their state's projected need for 1000 contact-tracing workers [3]. Health Canada has an open call for a volunteer workforce to do contact tracing and other related tasks [4]. South Korea employed a massive workforce of public health workers at the peak of the epidemic [5].

The value of such a public health workforce extends beyond contact tracing for COVID-19 and could lead to progress fighting many other health conditions. Programs in African communities have combined HIV testing with screening for infectious diseases like tuberculosis and malaria as well as noncommunicable diseases like hypertension and diabetes [6]. Using this model, we can take this opportunity to scale-up testing for infectious diseases as well as noncommunicable diseases and by doing so improve community health. As SARS-CoV-2 testing is evolving with not only serological but saliva testing, similar approaches could be taken for opt-out HIV, hepatitis C virus, and hemoglobin A1c testing, for which finger-stick methods are already available. This will allow us to begin to address the unacceptable health disparities that have existed for many of these conditions and that, not surprisingly, also occur in COVID-19 [7, 8]. Aside from the potentially profound health benefits of a combination implementation approach, pairing COVID-19 contact tracing with testing for HIV may serve to offset the immense costs of such an approach. It is well established that HIV testing provides outstanding value and can even be cost-saving in the long term in high-prevalence populations and settings [9]. Simply learning of a new HIV infection is known to change behavior, with meta-analyses estimating an 80% reduction in sexual activity with partners of negative or unknown HIV status [10], and starting antiretroviral therapy with subsequent viral suppression stops HIV transmission [11].

Testing focused on the geographic regions with the highest rates of new diagnoses, and further targeted using phylogenetics to identify the largest and fastest-growing clusters of infection, has been positioned as a key pillar of the United States' "Ending the HIV Epidemic" strategy [12]. These efforts will be familiar to public health leaders in the United States—Anthony Fauci was an architect of the strategy [13]—which was motivated by the profound successes in the African continent, engineered in part by the President's Emergency Plan for AIDS Relief (PEPFAR) and headed by Deborah Birx [14]. Yet, testing remains one weak link in our efforts to End the HIV Epidemic, in part because of persistent stigma and because the communities at greatest risk often have limited access to healthcare and/or are young and without established healthcare.

We (B. N., C. d. R.) have recently written that, for 6 of the largest US cities comprising nearly 1 in 4 people living with HIV/AIDS in the United States, implementing a wide range of

Received 20 April 2020; editorial decision 22 April 2020; accepted 24 April 2020; published online April 27, 2020.

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Clinical Infectious Diseases® 2020;71(16):2259–61

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interventions to diagnose, treat, and protect against infection at even near-ideal levels would fall short of the Ending the HIV Epidemic targets [15]. We excluded contact tracing because of the relatively limited experimental evidence supporting its effectiveness in HIV and the uncertainty regarding the potential scale this type of effort could actually reach. Contact tracing for HIV is difficult to implement and may be profoundly threatening to already marginalized individuals. COVID-19 contact tracing may provide a unique opportunity to also conduct widespread HIV testing with modified contact tracing that could be acceptable and important for Ending the HIV Epidemic.

Although the task is indeed monumental, the necessary temporary labor force is readily available. Since mid-March, workers in nonessential industries, most prominently in the retail and hospitality sectors, have filed for unemployment in record numbers across Canada (3 million) and the United States (22 million) since shelter-in-place and other preventive measures for COVID-19 were implemented [16, 17]. Some project the unprecedented stimulus packages and protections for workers may not return the hardest-hit industries to pre-COVID levels, and high unemployment may linger. Job loss is a major life stressor and is associated with declines in psychological and physical well-being along with a host of other negative social effects [18]. Creating jobs, even if only for a limited term, is a necessary government intervention to not only kickstart the economy but also to mitigate further growth in the concurrent epidemic of loss and despair [19, 20].

Mobilizing this labor force in the COVID-19 response will allow communities to take meaningful action to protect themselves, an act which, in itself, may have transformative benefits over the long term. HIV is known to disproportionately impact urban African-American and Hispanic/Latinx communities [21, 22] as do other chronic health conditions such as diabetes and hypertension. Now COVID-19 shows the all too familiar progression into vulnerable populations. Early cases were seen primarily in international travellers, but currently, African-American and Latinx populations are disproportionately impacted. A public health workforce with point-of-care screening for these conditions as well could make meaningful strides to reduce the widespread disparities inherent in health. Furthermore, testing to promote health allows for stigma-free messaging and broad acceptance. Testing and contact tracing for COVID-19 will provide an entry into social networks in communities where risk factors for conditions like HIV or noncommunicable diseases may be shared. It is imperative, however, that contact tracing does not increase stigma and discrimination of minority populations, and thus the development of a workforce dedicated to culturally competent contact tracing, point-of-care testing, and overall health promotion [23] has to be a priority in order to seize this opportunity.

The speed with which COVID-19 contact tracing must be conducted is on a different scale, although more intensive efforts

can be triaged to specialized staff. The greatest effort (and value), however, is in testing. Of course, these potential benefits hinge on the rapid development of antibody testing technology, not to mention sufficient availability of personal protective equipment, and the public health system's ability to rapidly train and deploy the massive influx of temporary workers that would be needed.

Aside from the devastating death toll, the potential long-term effects of COVID-19 on the global economy are severe and may ultimately prove to be greater than any other period in living memory. Difficult decisions regarding how and when to restart the economy lie ahead, but the balance sheet can include the long-term benefits of widespread HIV testing, screening for chronic diseases, and potentially narrowing health disparities. Although it may feel like a distant priority, now more than ever, as the official language of the plan goes, "we have unprecedented opportunity to end the HIV epidemic in America." Accomplishing this and expanding the impact to other health conditions is an opportunity we must not let go to waste.

## Notes

**Financial support.** This work was supported by the National Institutes of Health/National Institute on Drug Abuse (grant number R01-DA041747; and the Emory Center for AIDS research and Emory Vaccine and Treatment Evaluation Unit.).

**Potential conflicts of interest.** The authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

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