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Commentary

Executive summary: It's wrong not to test: The case for universal, frequent rapid COVID-19 testing

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One year into the COVID-19 pandemic, rapid tests are still unavailable to most of the public. Rapid antigen tests [1], using lateral flow devices, have been proven effective in home and community settings for identifying people who are most likely to be contagious—even in the absence of symptoms—and to empower them to isolate before unknowingly infecting others. Despite empirical evidence from across the world demonstrating the utility of rapid tests, well-intentioned academic discussions about the potential risks of false positives, false negatives, and data reporting issues continue to overshadow a devastating fact: The ongoing failure to widely deploy rapid tests can be measured in the real consequence of mounting infections, economic and social costs, morbidity, and deaths worldwide.

Imagine a world where your household, your community, your school, and your workplace have access to accurate, specific, and inexpensive COVID-19 tests. These tests can be self-performed and provide actionable results in a few minutes, not days. The technology to enable this is already available: Rapid antigen tests are being mass produced and could be further scaled up to meet demand. Yet despite the urgent need for testing in many places with community spread, the global supply of high quality rapid antigen tests is underutilized, and in some cases, actively being withheld from use. Many experts advocate for widespread rapid testing [2]. Available evidence compels us to make a stronger statement: In the midst of a raging plague, it is inequitable and unethical not to deploy high quality rapid tests alongside existing public health interventions.

We offer an overview of our four supporting arguments in this executive summary. The complete text and annotations are available as Supplementary Material ("It's wrong not to test: The case for universal, frequent rapid COVID-19 testing").

1. Frequent rapid testing uniquely complements other infection prevention, identification, and mitigation strategies (e.g., face coverings, social distancing, vaccinations, molecular diagnostic testing, contact tracing). All available tools must be deployed in ways that play to their strengths, reduce harm, and best utilize resources [3]. Modeling simulations have shown that to curb the pandemic, frequency of testing must be considered alongside sensitivity [4]. With a

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large proportion of disease transmission now widely attributed to people who do not exhibit symptoms, it is critical to leverage strategies like high quality frequent rapid testing to fill the gaps where molecular testing is not practical to deploy [5].

2. Comparing widespread, frequent rapid antigen testing to targeted, infrequent molecular testing is a false equivalency that leads to harm. Fixating on the relative number of cases missed by rapid antigen versus molecular testing is unproductive. Antigen tests can more readily be used frequently and work best when people are most infectious, key points overlooked by specious comparisons to molecular tests. Testing decisions should be grounded in harm reduction theory: Universal access to frequent rapid tests would be a substantial improvement over infrequent tests or no tests, which remains the frustrating reality for many people around the world who are still in need of reliable access to testing.

3. Universal access to low-cost or free frequent rapid tests, with follow-up and support, is crucial for promoting equity. Throughout the pandemic, prevention has operated on a gradient of economic elitism. Underserved communities have seen their health, livelihoods, and social fabric ravaged by the virus and its control measures. Coordinated rapid testing programs can protect against the stealthy spread of COVID-19, which is especially important for populations at higher risk of worse health outcomes [6]. Among the long-term negative consequences that could be averted through frequent testing is the exacerbation of educational disparities. Many better-resourced schools use frequent testing to keep schools open and enable caregivers to resume other activities such as returning to work; we should expand that access [7].

4. Self-testing is effective. Despite having faced initial resistance and criticism, self-testing for health conditions ranging from pregnancy to HIV has proven valuable. Early evidence from usability studies [8] and pilots of self-administered tests in home [9] and community [10] settings suggests that widespread COVID-19 self-testing could be similarly promising. In places such as Nova Scotia, Canada, community-based testing has been expanded by recruiting volunteers, often with no medical background, for effective rollout of rapid testing, a resource-creative response that simultaneously envisions the end of the pandemic and meets the needs of the current moment.

It is imperative to recognize the unique utility of rapid testing as a tool that can prevent and reverse uncontrolled spread, reduce harm, and promote equity. Alongside protective measures, complementary testing approaches, and immunizations, universal access to frequent rapid COVID-19 self-testing and community-based testing—coupled with support to isolate—must be part of a comprehensive strategy to end the pandemic as soon as possible. Countries that acted decisively, such as Ghana, New Zealand, and Vietnam, deployed available tools quickly to effectively meet the pandemic threat. In the face of historic and evolving challenges, it is not too late to pursue our own bold approaches using all the tools we now have so that we can not only imagine, but also actualize, a world without the constant uncertainty of whether we are infected or are infecting others. Once success in containing or eliminating COVID-19 has been achieved through comprehensive, sustained strategies, widespread frequent rapid testing will be just one more tool that can be safely stowed away.

Author contributions

Dr. Ramirez, Ms. Johnson-León, and Dr. Caplan conceptualized this work. Ms. Johnson-León and Dr. Ramirez wrote the original draft, coordinated with collaborators, and verified all sources used. All authors participated in investigation and in revision of the manuscript.

Declaration of Competing Interest

The authors declare that they do not have any manifest conflict of interest. Dr. Buchan reports personal fees and other from his service as Chief Data Scientist Advisor to AstraZeneca and a grant from the National Institute for Health Research (NIHR), all outside the submitted work. Ms. Aspinall reports that she is compensated for her service on the Boards of Directors of both Orasure and Abcam as well as for serving as an Advisor to Cepheid. Dr. Binding reports that he works for Robert Bosch GmbH. There is a separate division within the company producing and selling rapid PCR tests for SARS-CoV-2 ("Vivalytics"). He declares that he has no work ties with that team.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.eclinm.2021.100759.

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