The Need for a National-Level Contact Tracing Initiative with Epidemiological Utility

Maimuna S. Majumder* & Divya Ramjee**

*Harvard Medical School (Boston, MA)
**Boston Children’s Hospital Computational Health Informatics Program (Boston, MA)
***American University (Washington, DC)

Digital contact tracing and contact tracing apps are currently at the forefront of discussions about digital public health surveillance. An abundance of apps continue to be developed and enter the global market, and many of these apps promise to accurately trace coronavirus infections at scale and contain the ongoing pandemic. However, unlike traditional approaches, digital contact tracing necessitates that a considerable proportion of the general population opt-in – regardless of whether individuals are infected or at high-risk of exposure – to yield true epidemiological utility. Existing apps are not developed with broad interconnectivity in mind, raising a crucial question as to how incompatibility may impact information-sharing, both across platforms and across borders, to accurately trace the spread of the disease.

We propose that a regulatory framework be established that incorporates components that promote epidemiological utility, including (1) reporting by healthcare providers to augment self-reporting; (2) usability across varying operating systems and mobile devices, particularly those that are not smartphones; (3) adoption incentivization; and (4) literacy and disability compatibility requirements. Interface design in particular must account for as many user groups as possible, with special attention to education, age, ability, and socioeconomic factors. Developers involved have thus far failed to incorporate important human factors concepts (e.g., usability, adaptive technology for persons with disabilities, error prevention, interface design for varying levels of literacy, etc.) into their

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A number of members of Congress have proposed legislation to regulate digital surveillance tools, and we urge lawmakers to understand that regulation of public health surveillance technologies needs to balance concerns for epidemiological utility with security and privacy concerns. Over twenty states in the United States are currently considering, designing, or implementing contact tracing apps, but these initiatives continue to lack direction at the federal level. Ultimately, due to international air travel, the United States will need to focus on involvement with global-level contact tracing; however, we stress that there is a dire need for the United States to concentrate on creating a national framework first: one that appropriately governs digital contact tracing – and any future public health surveillance technologies – within the country and between states.

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