

**Duke University COVID-19 Privacy Research Team Position Statement**  
**Future of Privacy Forum Privacy & Pandemics Workshop**  
**October 27-28, 2020**

***Evaluating Contact Tracing Apps: We Need More Transparency***

Can the quality and efficacy of digital contact tracing apps be measured? We believe they can, but until both public and private entities provide greater transparency, third-party evaluation efforts will fall short.

For the past several months, our group of undergraduate and graduate students (the “Duke University COVID-19 Privacy Research Team”), working under faculty supervision, has been compiling data on global approaches to digital contact tracing, with the goal of organizing and evaluating the apps along two dimensions: privacy and efficacy. Although the team has collected a substantial amount of data across more than three dozen countries, it has also faced obstacles—many of which stem from a dearth of available information from governments and companies.

The team proceeded first by writing standardized profiles on national approaches to digital contact tracing, and then by developing rubrics for measuring privacy and efficacy. The privacy rubric was made by adapting the Organization for Economic Co-operation and Development’s Fair Information Practice Principles (OECD FIPPs) to COVID-19 contact tracing apps, with the aim of creating a summary statistic that could be used to compare privacy protections across countries. The efficacy rubric attempts to estimate the potential efficacy of different apps by considering sixteen metrics across six categories: participation, organization, launch and updates, data collection and access, governing authority, and (Android) user download data. Our research is ongoing, and an expanded team of students and faculty, funded through Duke’s Bass Connections program, is continuing the research through the current academic year.

At the workshop, we seek to (1) share a sample of the information collected, and present the case that greater transparency and information sharing is needed for a meaningful measurement of efficacy and privacy; and (2) challenge participants to consider best practices for measuring efficacy and privacy in contact tracing apps, and to share strategies for advocating for greater information flow.

**Part I. Lessons Learned**

Our research has shown, among other things, the following:

- **Government transparency is lacking with respect to both the data collected and the goals for use of that data.**
  - Public health data, which is highly regulated, has been relatively accessible (at national and sub-national scales) throughout the pandemic. However, government data is often siloed or incomplete. For example, governments generally do not disclose how they plan to integrate app data and the results of manual contact tracing. This approach stymies research efforts and prevents a full account of how contact tracing apps are contributing to overall public health outcomes.
  - Although some information regarding privacy protections is available (e.g., public laws and regulations; public statements by government entities and officials), basic information about what data are being collected and who has access to the data is frequently lacking. Our research has encountered obstacles relating to areas such as data privacy rules governing manual tracing data; the use of contact tracing apps for other pandemic-related purposes; and the sharing of any public health data with law enforcement, non-government entities, or

retained for future unspecified uses. This makes it more difficult for third-parties to measure and compare digital contact tracing apps, and will likely lead to ineffective oversight and limited adoption.

- More generally, many governments fail to state clearly their goals when creating technology for mass adoption, making it more difficult for citizens to evaluate their personal need for contact tracing apps. Some apps reached widespread adoption by serving as a *de facto* information release channel, but even these suffer from citizen participation (such as turning off location data access). A lack of clear goals also limits the ability of researchers to evaluate effectiveness and is expected to limit the ability of citizens to hold democratic governments accountable.
- **The private sector should support a culture of open data when it comes to public health app information that would otherwise be proprietary.**
  - Researchers found it impossible to rank apps across a number of metrics due to the lack of availability of many metrics and inconsistency across platforms. Greater transparency is needed with regard to information categories such as application permissions (on the iOS App Store), launch dates (on Android), and download counts (on both, especially iOS). These data are critical for even a basic understanding of the efficacy and privacy of public health applications.
  - Google and Apple claim to be removing apps not supported by government or healthcare institutions, but there is no way to confirm which apps have met with that approval. Fake apps have been documented garnering hundreds of thousands of downloads, creating an ecosystem that lacks trust. The failure of these companies to create a centralized, transparent database of official government apps enables continued abuse and delegitimizes the ecosystem.
  - Decisions fundamental to the capability of contact tracing apps should be made by governance structures that can be held accountable rather than unilaterally. For example, limiting the amount of time data is stored to 14 days has made many solutions incompatible with public health systems with slow and/or inadequate testing capacities.

## **Part II: Request for Input**

The team will lead an interactive session seeking evaluation of its privacy and efficacy rubrics and exploring future avenues for research. For example:

- What are best practices for advocating for more transparency by government and private actors?
- How can we ensure data protection while advocating for a culture of open data?
- How should privacy and efficacy be evaluated? What are the problems with the existing team rubrics, and what alternative data sources or proxies should be used to fill them in?

The workshop will conclude with a discussion of how our research can better inform future attempts to objectively compare digital contact tracing across jurisdictions.