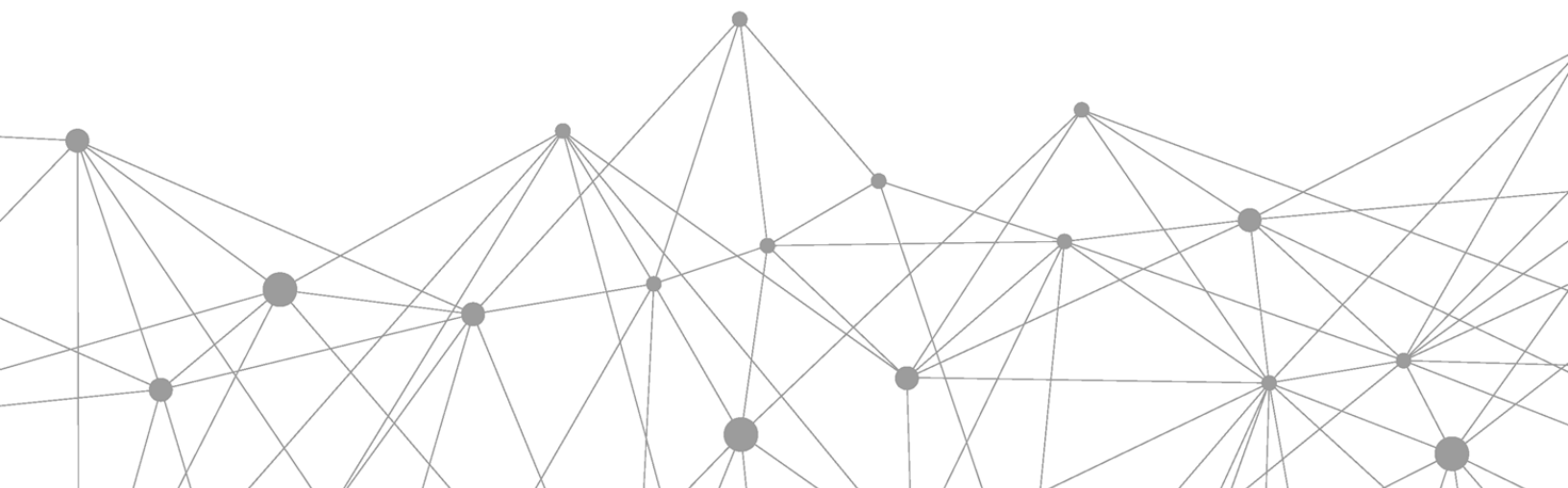


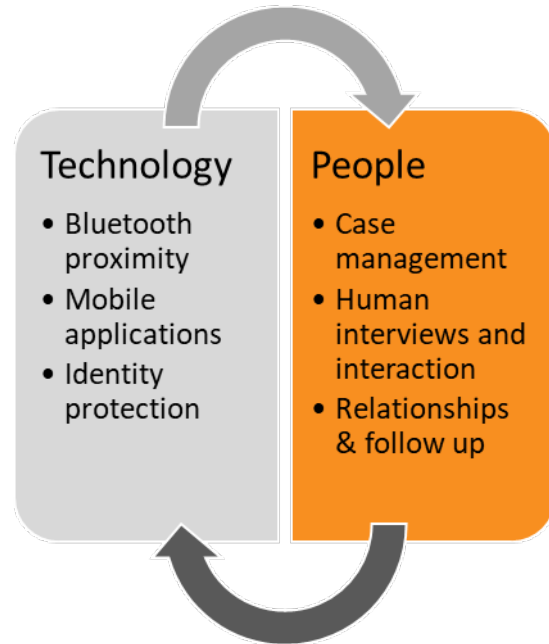
SECURE, USER-CENTRIC EXPOSURE TRACKING FOR VIRUS MANAGEMENT

WHITE PAPER
PUBLIC HEALTH SURVEILLANCE
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Exposure Notifications and Contact Tracing Synergies

Exposure Notification is a synergistic solution domain to Contact Tracing, aligning with CDC guidance as the best holistic approach to minimizing and mitigating transmissible disease. This is especially valuable to support of our current and evolving national response to COVID-19; but the capability is also necessary to prepare for other viral eventualities. Critical to solutions in this domain is comprehensive thinking that connects the role of people and technologies for both Contact Tracing (e.g. contact center, interviews, case management, support services) and Exposure Notifications (e.g. positive diagnosis tracking, alerting, privacy protection). Coupling technology innovation with human expertise maximizes outcomes as we respond to COVID-19 and prepare for future pandemics.



Exposure Notifications leverages the Apple and Google framework being co-developed to ensure broad adoption, leverages universal mobile technologies, protects individual privacy, does not track geospatial location, and empowers individuals to engage in their own exposure history. The concept of operations for Exposure Notifications as shown in Figure 1, follows a fictional “Alice” through an exposure journey to show the seamless process – powered by technology.

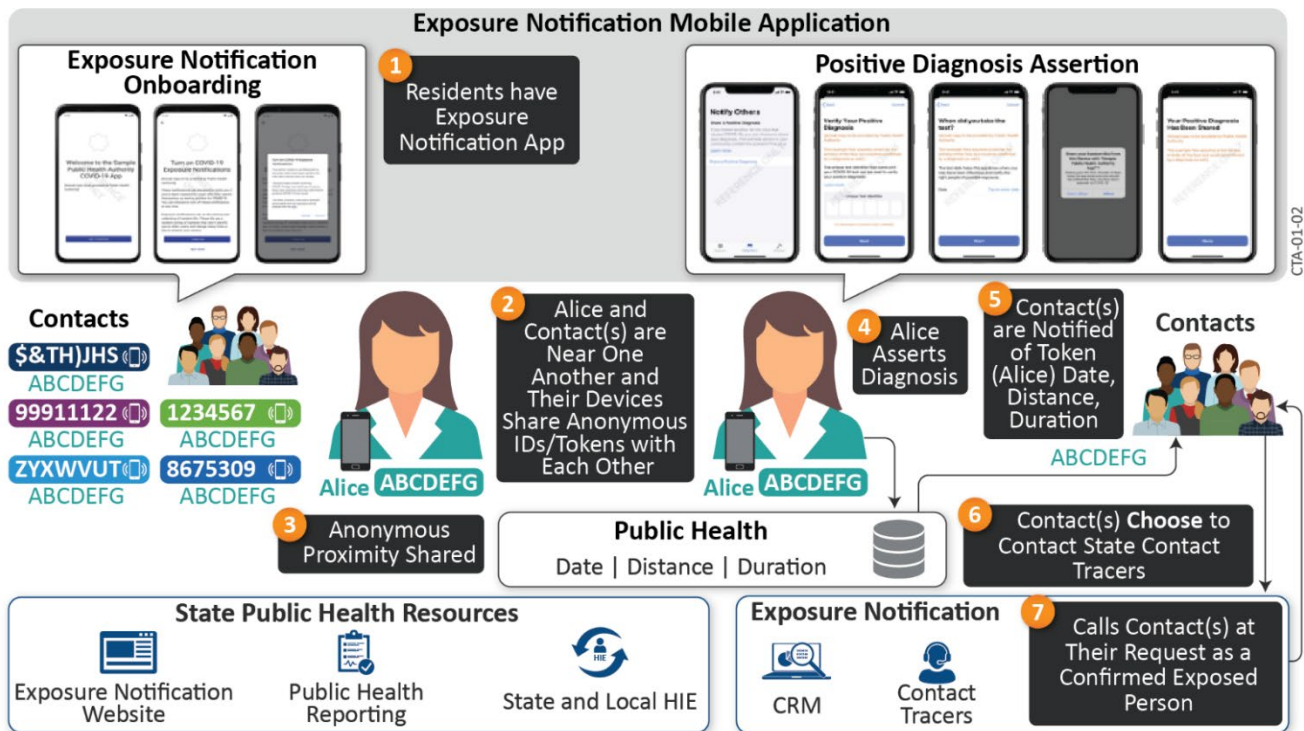


Figure 1 Exposure Notification Concepts Overview

Exposure Notifications and Contact Tracing Synergies

Figure 1 above shows several critical integration points in Alice’s journey that must be considered to maximize the synergies between Exposure Notifications and Contact Tracing. These are:

- **Step 4 – Alice Asserts Diagnosis**-Diagnosis assertion must integrate with identity management services to ensure privacy and accuracy to avoid any adverse impacts of the required data sharing. This integration with state or national Health Information Exchanges should query order results for a COVID-19 test for example.
- **Step 6 – Alice Chooses to Contact State Contact Tracers**-At the commencement of the Exposure Tracking workflow, users can *choose* to reach out to Contact Tracing contact centers in their state. This empowers the individual to control their own privacy, while giving them direct access to additional resources necessary to follow-up once exposure is verified.
- **Step 7 – Contact Tracers Call Contacts at their Request**-Contact Tracers, having been provided contact information at the discretion of the exposed individual, can reach out. This integration point maximizes the efficacy of human-based Contact Tracing, makes the Contact Tracing process more efficient, and provides targeted, accurate exposure events, minimizing spurious notifications and wasted time.

As the Apple and Google Exposure Notifications framework evolves, applications built to leverage it need to maximize utilization of this ubiquitous and free foundation for Exposure Tracking and Notifications. The prototype we have developed allows us to demonstrate specific core tenets of a maximum value application. The tenets focus on privacy, maximizing efficacy of tracking without use of geospatial locations, integrating effectively with clinical data exchange systems, and integrating with human-based contact tracing solutions. Prototype screenshots are shown below in Figure 2 and highlight four specific capabilities that extend functionality in meaningful and valuable ways. From left to right, (1) provides accurate and actionable information to all residents, (2) provides testing locations and status, (3) presents exposure risk to the app user based on state and/or public health business rules, and (4) empowers the app user to share their notification information to make Contact Tracing more efficient and valuable.

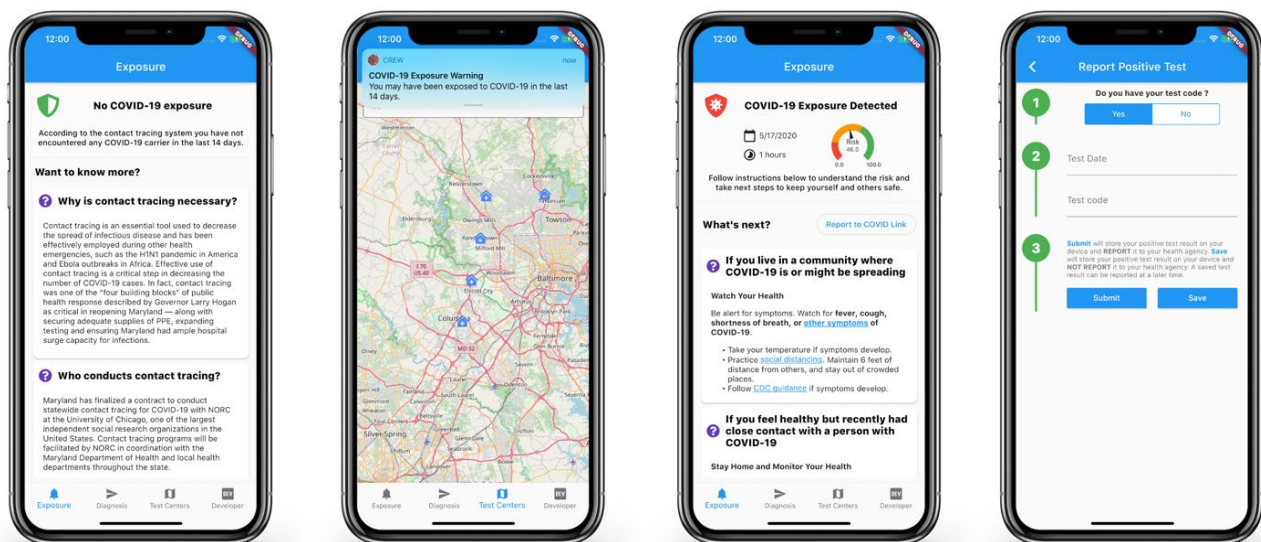


Figure 2 Exposure Tracking Prototype Screenshots