



Pennsylvania's Exposure Notification Mobile App

A public health perspective of digital contact tracing in COVID-19 using Bluetooth-enabled technology

January 26, 2021

Lead

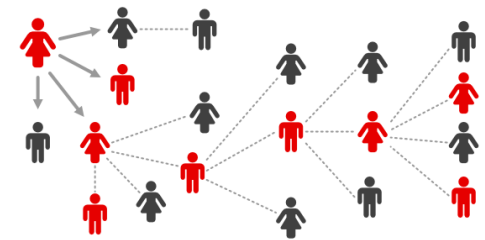
Meghna Patel, MHA
Deputy Secretary for Health Resources and Services



Background



- Exposure Notification Service Announced in April 2020 by Apple and Google
- **Enhances the current traditional contact tracing efforts**
 - **Unknown and unfamiliar person interactions**
- Reached out to Australia, Singapore, Ireland, Germany, etc. – learned what they were doing
- Started multi-state coordination meetings
- Selected NearForm Inc. (Ireland, Northern Ireland, Scotland, Gibraltar govt.'s)
- Partnered with Delaware, New Jersey and New York
- Partnered with UPenn, and MIT Lincoln Labs through CDC
- Piloted with several state agencies before launch



▼ **Pennsylvania population**

- ▼ 12.8 million
- ▼ Assumption that about ~80% of U.S adults have a smartphone*
- ▼ ~19% of the population is over 65+ years
- ▼ ~21% of the population is under 18 years

▼ **COVID Alert PA App**

- ▼ Launched September 22, 2020
- ▼ Collab between 4 states (NY, NJ, PA and DE)
- ▼ Almost similar features of the app
- ▼ 765k downloads so far since launch (~7.6% of eligible population)
- ▼ COVID Symptom Check-in feature (daily average of 55,000 individuals check-in)

▼ **Pennsylvania Public Health**

- ▼ State public health department (~250 case investigators)
- ▼ Six county health departments
- ▼ Four municipal health departments

* Pew Research Center – Mobile Fact Sheet survey June 2019.

Interoperability



Integrated with Association of Public Health Laboratory (APHL) server so we are interoperable with below states that use Exposure Notification Service of Apple/Google. More states continue to add each week:

- Alabama
- California
- Colorado
- Connecticut
- Delaware
- Washington D.C.
- Hawaii
- Maryland
- Michigan
- Minnesota
- Nevada
- New York
- New Jersey
- North Dakota
- North Carolina
- Virginia
- Washington
- Wisconsin
- Wyoming; and

Pilot only – Oregon

Limitations



- ❖ Bluetooth is a wireless technology - reacts aggressive in a closed metal environment (6 feet could show as 4 feet)*
- ❖ Does not know if someone is wearing a mask
- ❖ Does not know if phone devices are close enough but devices owners are 6 feet apart
- ❖ **Public trust of the technology in the time of a misinformation epidemic**

* Because it is replicating an indoor setting, it is still best to err on the side of caution for an exposure alert if individuals are exposed to someone with COVID-19.

COVID Alert PA



CERTIFY MY RESTAURANT | OPEN & CERTIFIED PA BUSINESS DIRECTORY

SHARE 📄 📱 📧

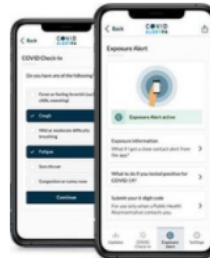
[Home](#) > COVID Alert PA

COVID Alert PA App

COVID Alert PA is the official mobile app by the Pennsylvania Department of Health (DOH) that uses the [Exposure Notification System \(ENS\)](#) provided by Apple and Google.

Download the App

You can now add your phone to the fight against COVID-19 by going to the Google Play Store or Apple App Store and downloading the free COVID Alert PA app to your smartphone. The app runs on iPhones that support iOS 13.5 and higher, and Android phones running Android 6.0 and higher.



COVID Alert PA is available in English, Spanish, German, and Traditional Chinese. Downloading the app is voluntary, but the more Pennsylvanians who adopt the app the more successful it will be at stopping COVID-19. People 13 years old and older are encouraged to add their phone to the fight. However if you are between the ages of 13 and 17, you must have a parent or legal guardian's consent to use the app.

Opt-in for Exposure Alerts

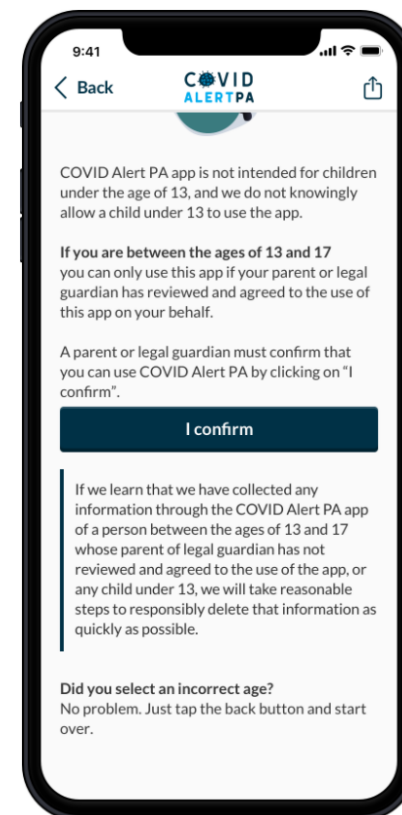
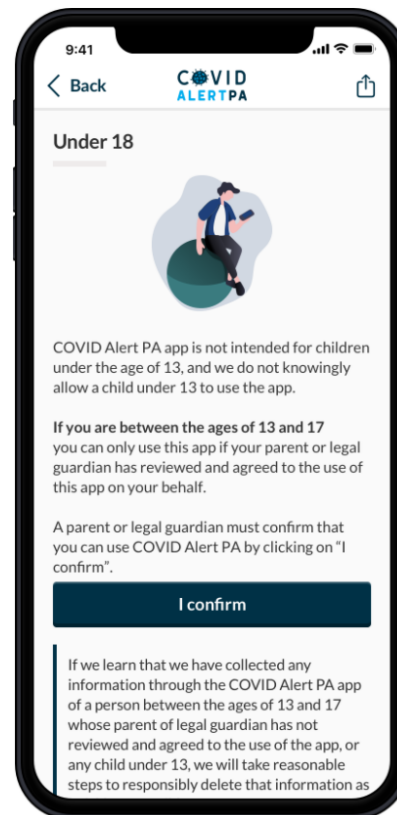
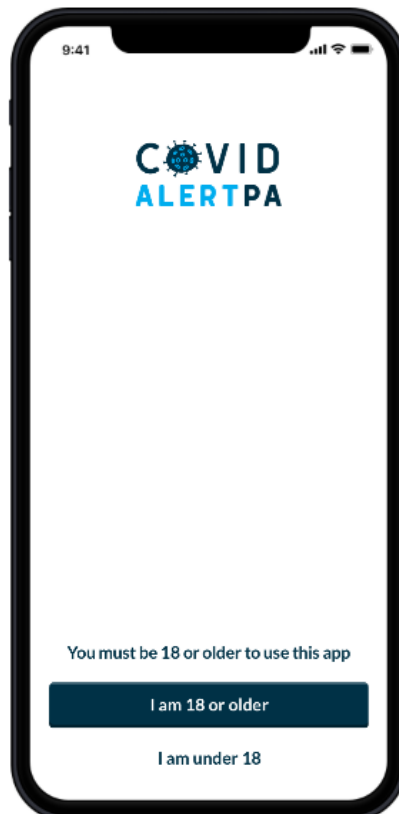
After you download COVID Alert PA to your smartphone, you can opt-in to receive alerts if you have had a potential exposure to someone who tested positive for COVID-19.

Getting timely alerts can help you get advice on how to help yourself and protect others as well as determine when to get testing. It can help reduce your risk of unknowingly spreading the virus to your friends, family, and larger community.

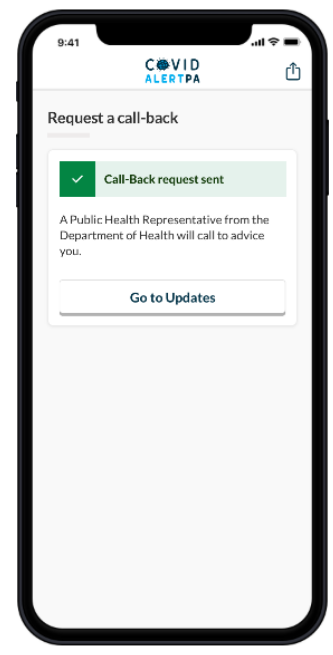
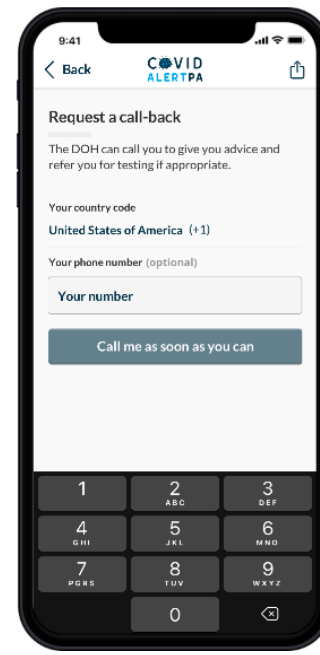
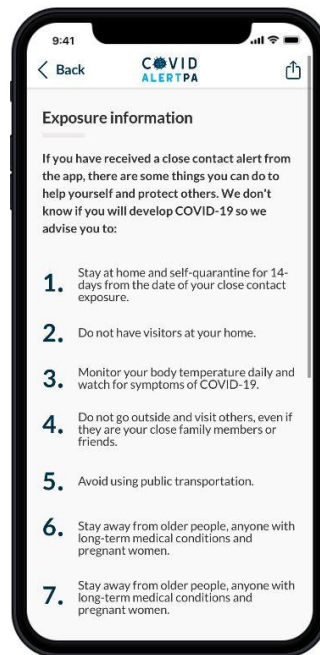
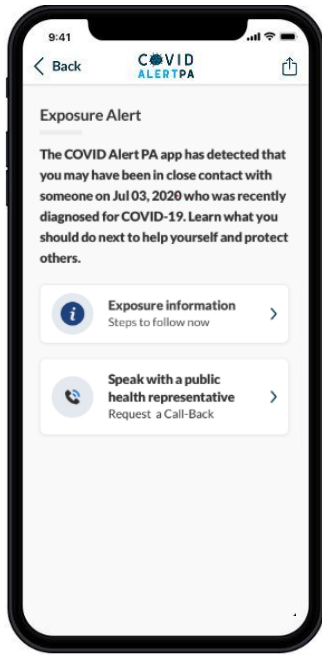
🗑️ pa.gov/covid

- 🗑️ Key Messages and Logo
- 🗑️ Social Media Toolkit
- 🗑️ Printable and Digital Resources
 - 🗑️ Stickers
 - 🗑️ Postcards
 - 🗑️ Posters

Available for ages 13 or older

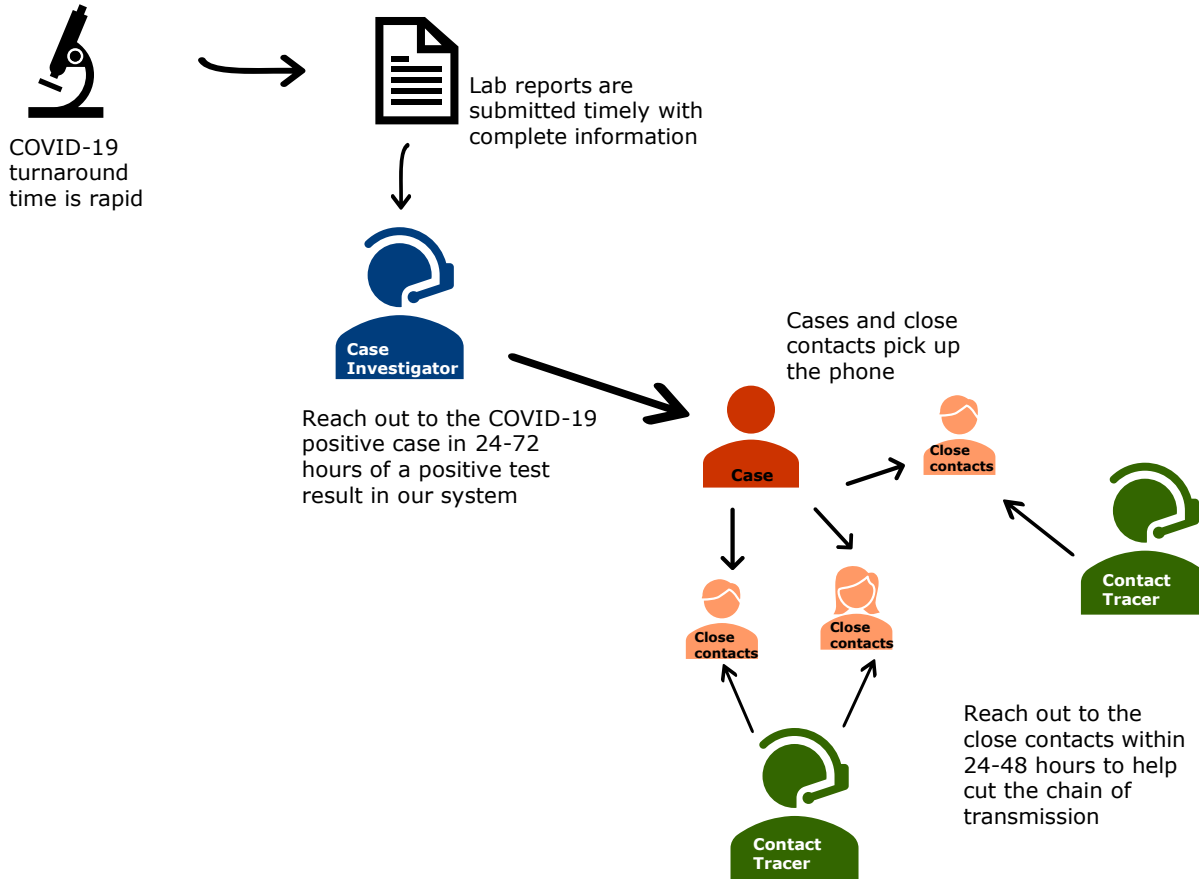


Exposure Alert – call back feature



Callback feature –
Important for close contacts to reach us so that we can
perform contact tracing and close monitoring.

"Ideal" Workflow



Case Investigator Workflow – Questions related to the App



Questions to COVID-19 positive cases:

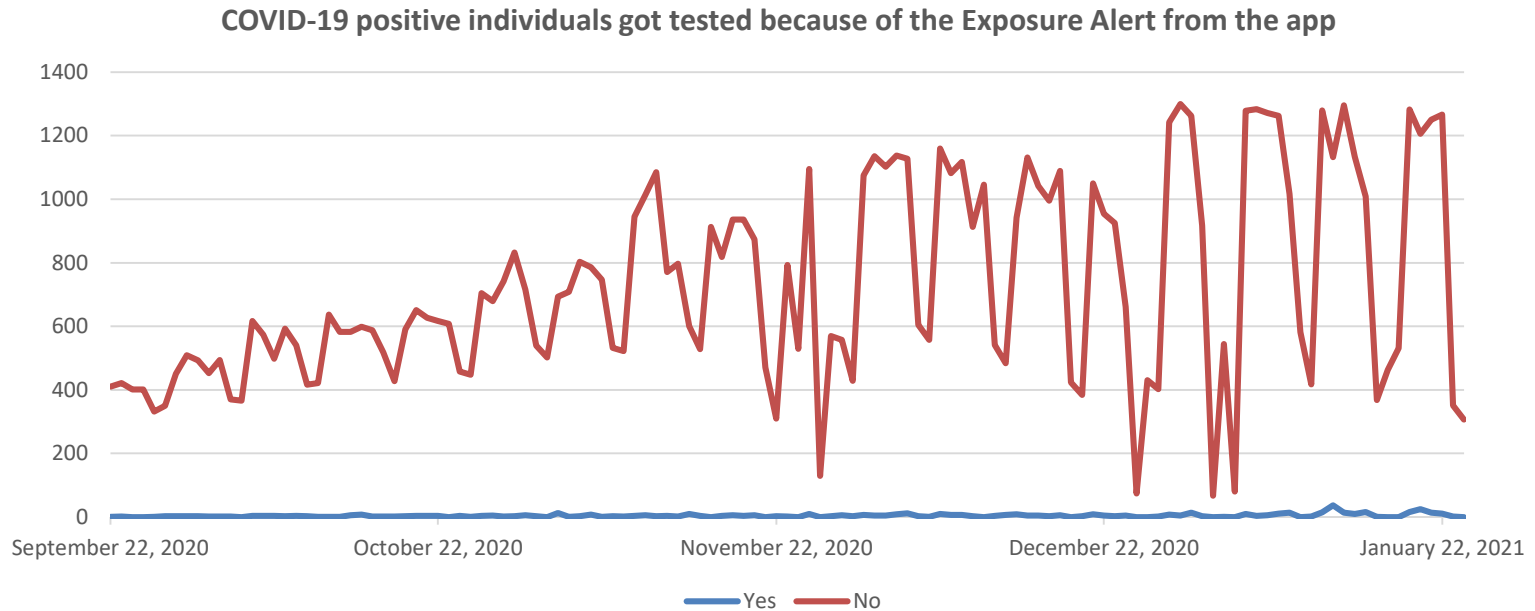
1. Was the patient alerted by the COVID Alert phone app that they were exposed to a person diagnosed with COVID-19? (Yes/No)
2. Do they have the COVID Alert PA app installed on their cell phone? (Yes/No)
 1. If yes, are you willing to help others and alert them that they may have been in close contact with someone who was tested positive?
3. Did the patient agree to upload the Random ID? (Yes/No)

Note:

1. Initially these questions were not required, then we made them required.
2. We removed the "willingness" question in December 2020 because most cases with app responded that the app was mostly for them to get alerts.



Table 1



Average Daily Responses

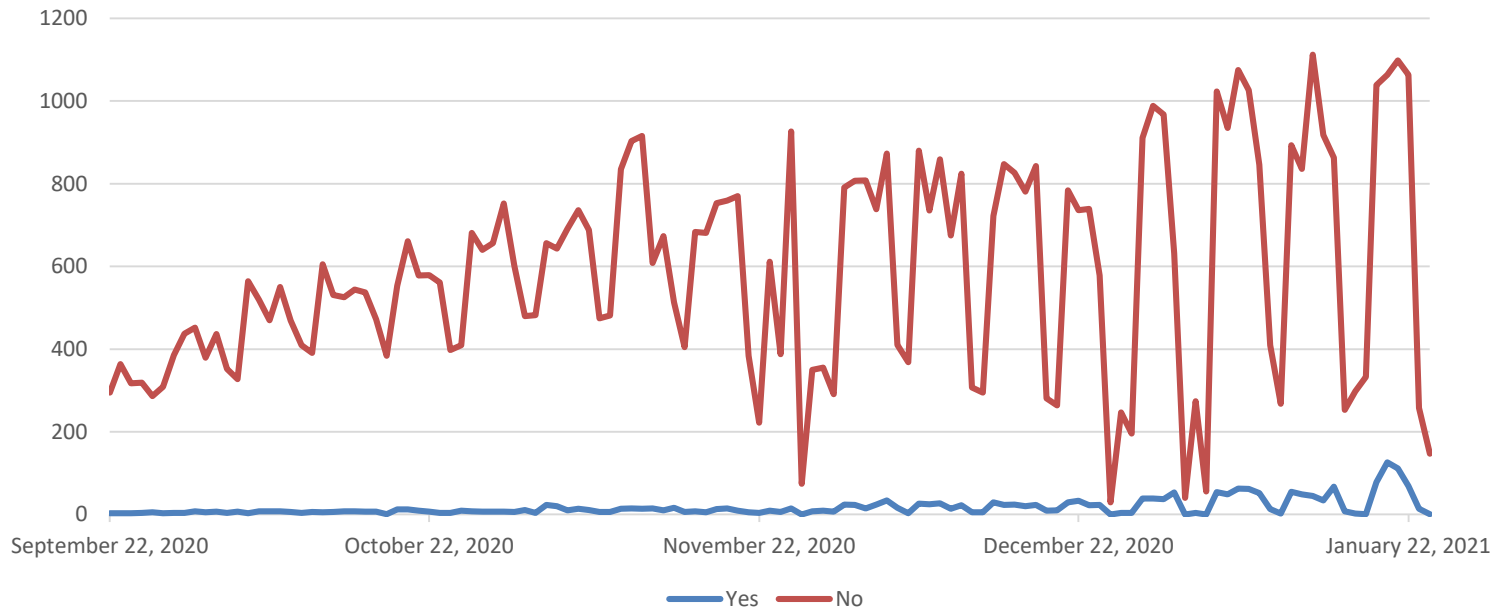
Yes: 4

No: 724

Unclear if the all the COVID-19 positive individuals understood this question properly.

Table 2

COVID-19 positive individuals that have the app installed



Average Daily Responses

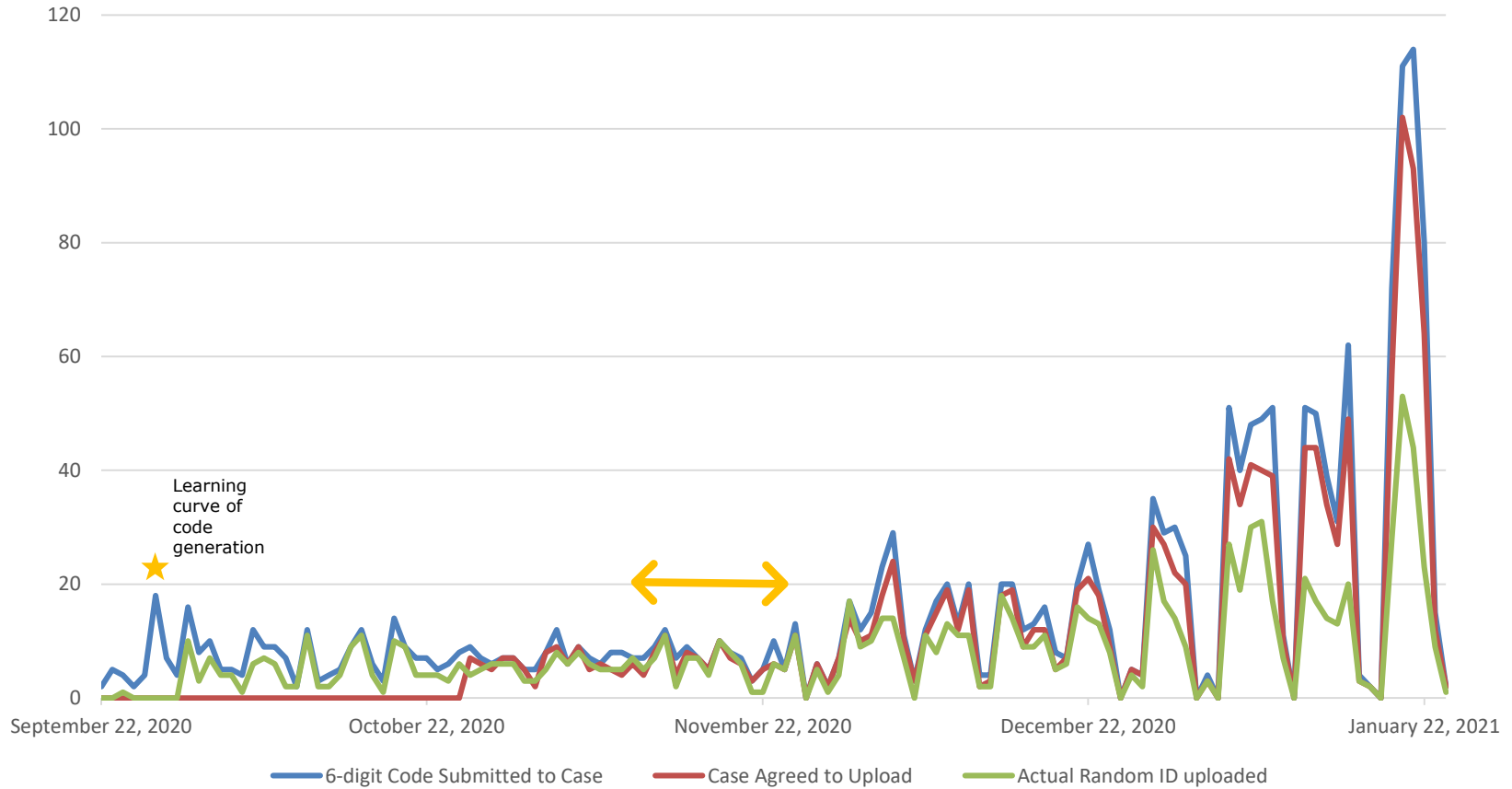
Yes: 17

No: 566

Only ~3% have the app installed

Table 3

Random ID upload behavior



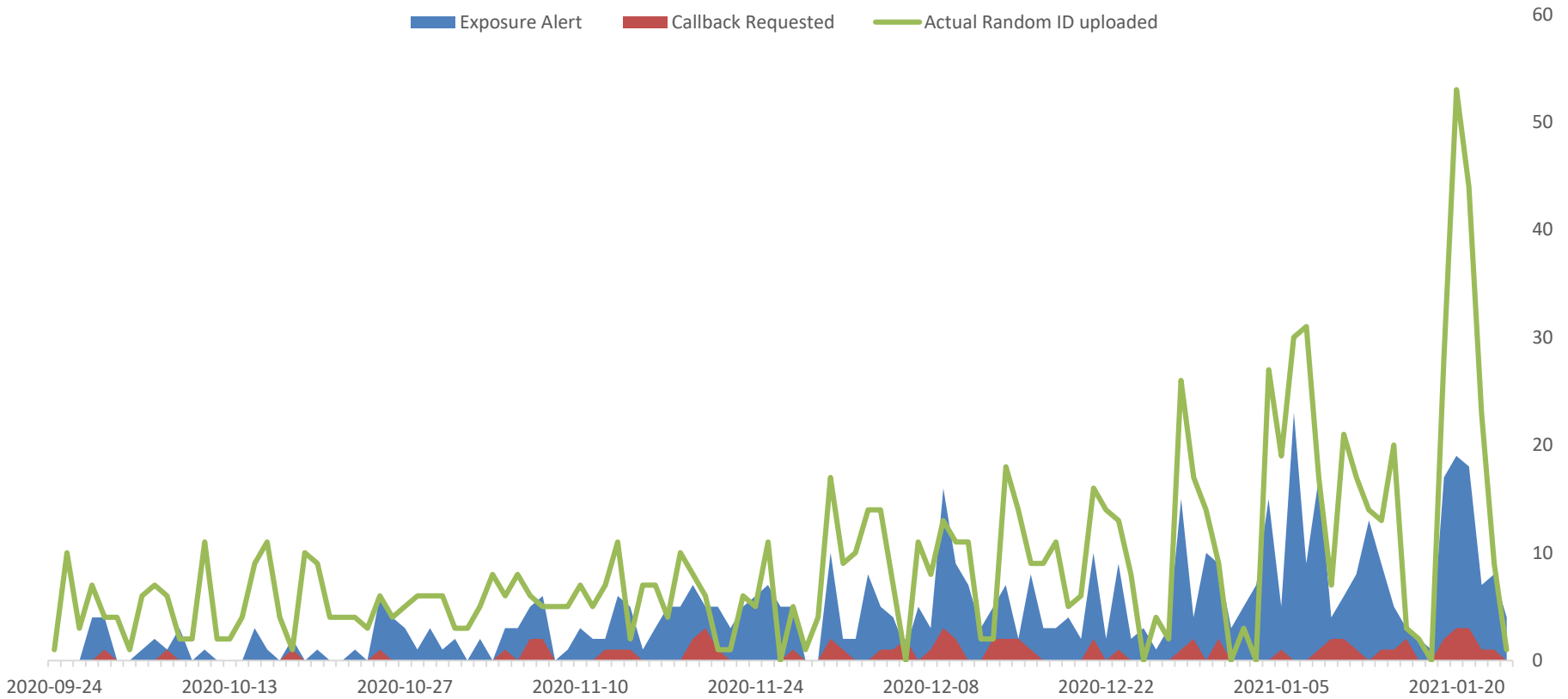
Note: Whether the case agrees to upload the random ID was not collected for the 1st month.

Metrics

Table 4



Exposure Alert Callback Requested Actual Random ID uploaded



Note: These are 14 day intervals

Metrics Summary

▣ **As of January 25, 2021**

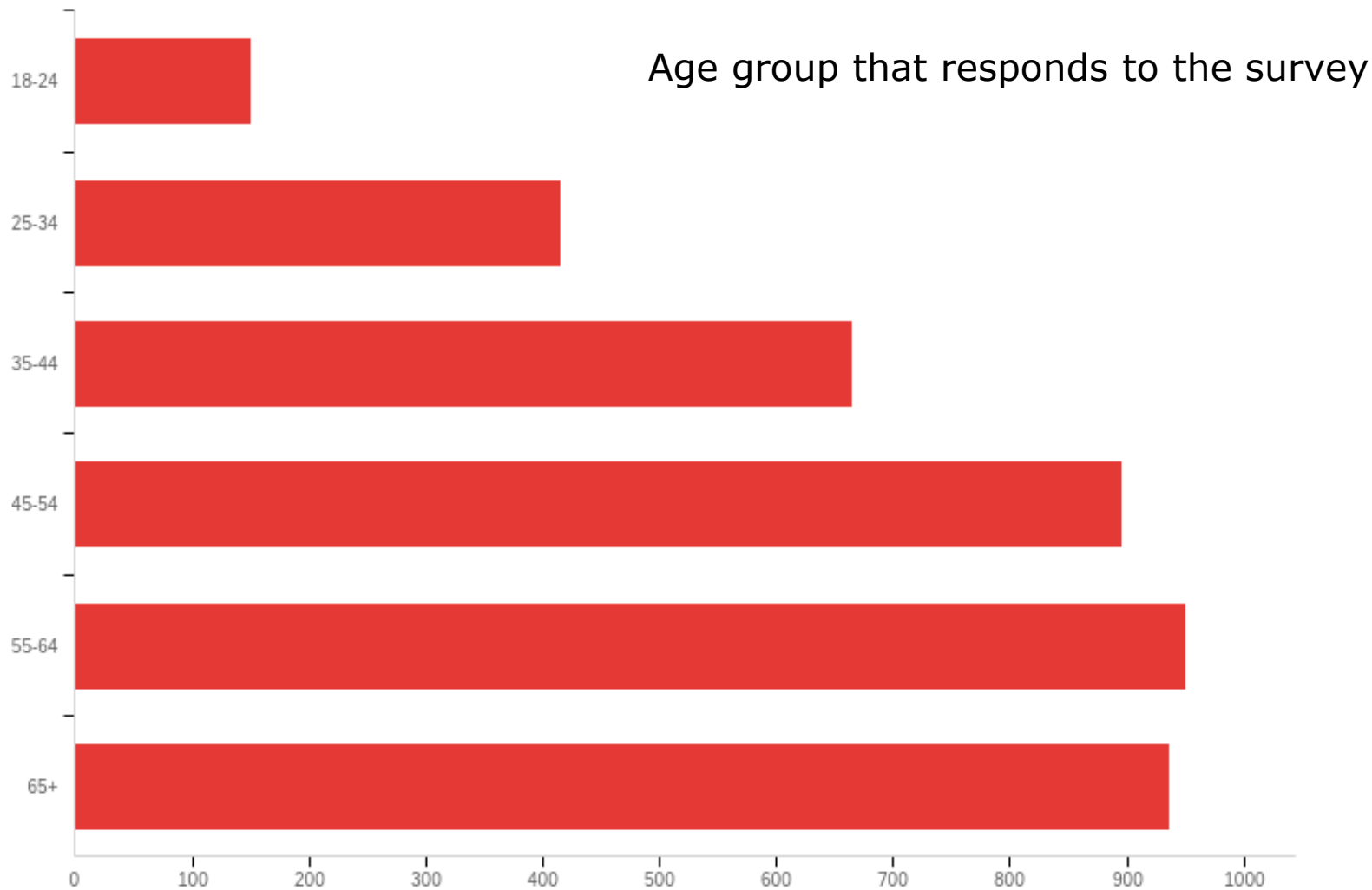
- ▣ 765,000 downloads of COVID Alert PA app
- ▣ 2,188 (3%) COVID-19 positive cases have the app installed (~70,807 do not (97%))
 - ▣ 1,032 Random ID's uploaded (*47% of cases that have the app)
 - ▣ 529 Exposure alerts
 - ▣ 102 Android devices
 - ▣ 427 iPhone devices
 - ▣ 70 individuals requested call-back from DOH

*Average has been 50-55%

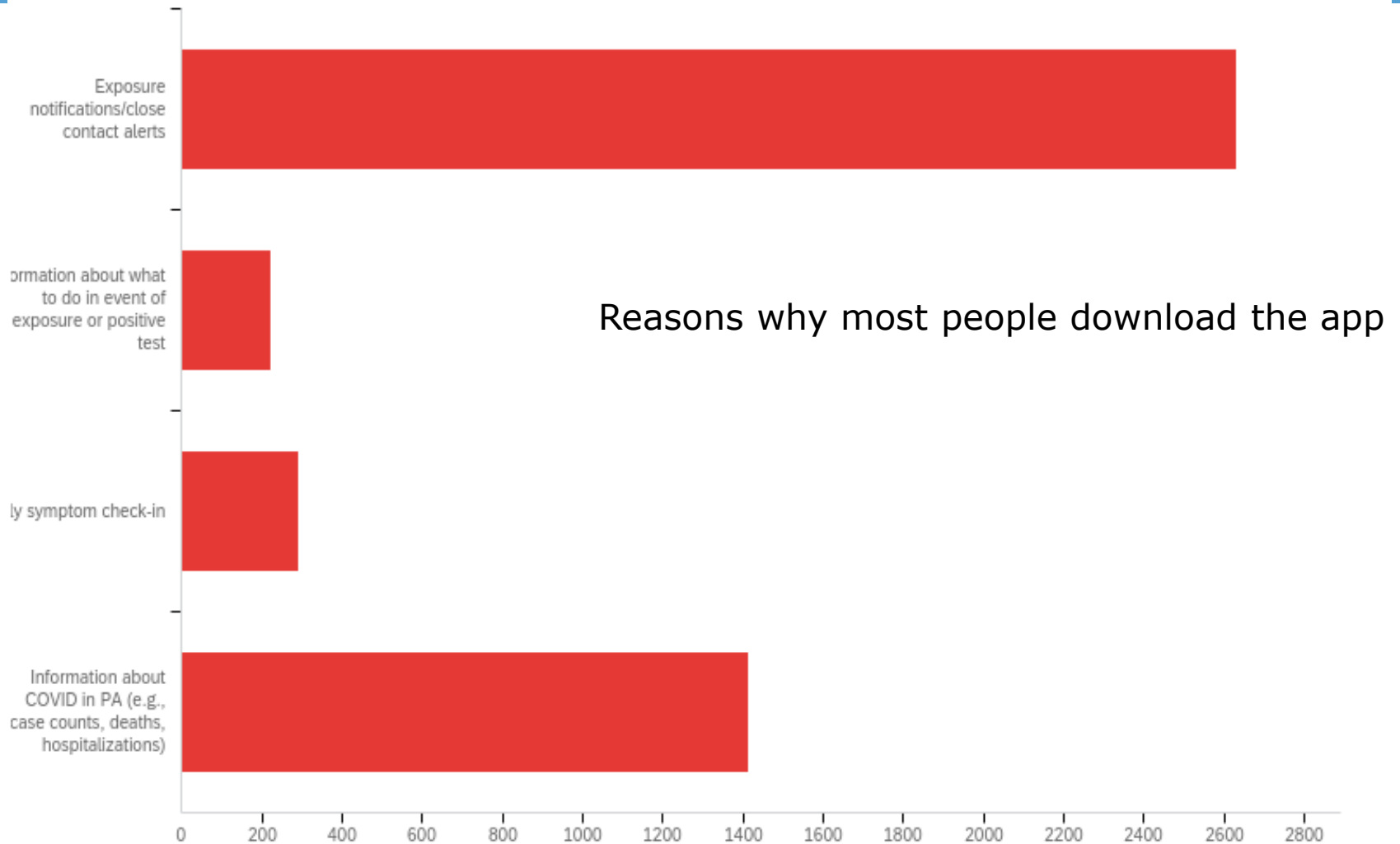
Additional findings

- 1 callback received exposure alert and tested positive, resulting in a possible asymptomatic case
- 1 callback received exposure alert and tested positive, but it was not confirmed if the positive test was before or after an exposure alert due to delayed contact tracing and unclear notes.
- 1 callback received exposure alert and later tested positive 25 days after the alert (due to the timeframe gap, we suspect positive case is not likely due to exposure alert)
- 3 callbacks reported in our disease surveillance system but received exposure alert outside their isolation period (more than 10-14 days after exposure or positive test result)

Average Behavioral Survey Findings



Average Behavioral Survey Findings



Lessons learned so far (and still learning...)

- This technology cannot replace manual contact tracing but accelerate distribution of alerts to the unknown and unfamiliar contacts.
- Addressing misinformation via and from legislatures, social media, news/media, op-eds, illustrative and influencer videos, etc.
- Messaging in a 6th grade language!
- This is a public health communication tool, not a data collection tool for public health surveillance.
- Unmanageable volume of COVID-19 cases and public hesitancy to pick up the call:
 - *Average weekly COVID-19 cases: ~46,700
 - 18% of case investigations start in 24 hours
 - 5% start within 48 hours
 - Roughly 16-20% of cases are investigated each week
 - Weekly press release reminders to "Answer the Call"
- Pandemic fatigue along with other overlapping crises – isolation leading to opioid epidemic and mental health crisis
- Differences in public health messaging – federal, state and local
- Low uptake of this technology – how to address that nationally
- Opportunities for further research:
 - Can this technology be used for other infectious diseases
 - Trust in public health and the technology
 - Effective messaging techniques

megpatel@pa.gov

www.health.pa.gov

<https://www.pa.gov/covid/>

THANK YOU