COVID ALLIANCE

Platform Overview: Benefits, Capabilities, and Coordination Requirements

Our maximum-privacy platform powers insights on COVID-19 that states, health systems, and individuals can use to make smart decisions and manage the outbreak

The COVID Alliance is a team of data scientists, software engineers, policy experts, and epidemiologists who have built a scientifically valid, simple-to-use, privacy-secure platform featuring dashboards for public decision-makers and applications for citizens to:

1. Communicate real-time information and track the aggregated movements and interactions of individuals
2. Identify citizens likely exposed to COVID-19 to target testing and other services
3. Assist policy-makers to enable citizens to safely return to normal economic and social activity while controlling for COVID-19 tracking and resource management

The platform can work as a stand-alone utility as or be integrated with other tools. The first feature-set of the platform will be operational within a week.

Our team members have directly relevant world-class capabilities including: building commercially available apps which serve millions of users and meet the highest standards of privacy protection, architecting medical best practices and technical solutions such as the plan employed by Sierra Leone's government during the 2015 Ebola outbreak, and creating algorithms and analysis tools which produce tangible insights enabling consequential decision-making.

The Offering

We are offering states, municipalities, and health organizations a platform to enable the management of the COVID-19 pandemic with minimal health, economic, and social costs.

What We Can Deliver This Week To States and Health Organizations

We have built an **Outbreak Containment Tool** that provides decision-makers unique insights into the real-time movement of people (aggregated and anonymized) and policies needed immediately to limit the spread of the outbreak, including:

- Identifying locations where people are violating shelter-in-place policies to prioritize enforcement (e.g., crowded hiking trails, parks, beaches)
- Identifying inadequate levels of social distancing at essential in-person businesses (e.g., grocery stores, pharmacies, churches) to aid these businesses in updating their policies or limiting the number of people who can enter at any given time
- Tracking outflows of people from crowded urban centers and confirmed disease hot spots to identify rural communities with inadequate health resources to handle this surge
- *Potential future offering*: COVID-19 cluster analysis at the level of neighborhoods (if we can partner with you for COVID-19 medical data) to enable granular resourcing and policy coordination

What We Can Deliver In The Next 2–8 Weeks

In collaboration with governmental and healthcare organizations, we can build a much more comprehensive contact tracing solution, enable better demand management of the healthcare system, and provide insights on how best to minimize economic damage. We can:

1. Build or integrate with an opt-in **Contact Tracing Solution** to assist in prioritizing testing for sick people *(target 2–4 weeks)*
2. Provide a **Remote Symptom Monitoring Tool** module within the Contact Tracing App with communication channels for medical professionals to help individuals manage symptoms based on severity of infection, as well as coordinate medical space, resources, and staff *(target 3–4 weeks)*
3. Develop a **Safe Restart Tool** within the Outbreak Containment Tool to model health & economic tradeoffs of releasing/continuing to enforce social distancing to inform policies during the later stages and end of the outbreak (*target 6–8 weeks*)

Elements of coordination, in best case:

1. Clear commitment to use platform
2. Coordination to enable access to opt-in health data
3. Clear direction related to effective collaboration and future decision-making
4. Feedback for the continued development of the platform/tools
5. Assistance in partnering with additional states, municipalities, and health organizations

Why Work With Us

Big data inference capabilities + policy expertise: We are an organization joining the best data science/engineers (from technology and finance industries), epidemiologists (including the team that led the 2015 Sierra Leone Ebola response), and policy experts (from leading academic and research institutions) to deliver tools for state & municipal decision-making and public communication.

Independence: We are an independent entity formed to combat the threat of the COVID-19 pandemic; our interests are aligned with the end users of our services. We believe an approach that partners a crisis-specific independent organization with trusted collaborators from government and industry offers the best chance to win public confidence.

Privacy: We designed the Alliance to be able to win the trust of all stakeholders -- including the general public and privacy activists. We are partnering with the best database environments and cybersecurity firms available to build a secure data platform from which no personally identifiable information (PII) can be extracted by any collaborator or 3rd party. Personal data will only ever be stored with direct consent of the user.

Collaboration: Our backend data platform is flexible and extensible; we can and plan to connect other apps, monitoring tools, and research teams to our platform to rapidly implement the best US-wide platform and toolkit available.

Who We Are

Ryan Naughton – president
Director of Engineering, Fair

Andrew Graham – executive director
Engagement Manager, McKinsey (former)

Rob Krzyzanowski – head of technology
Head of Core Data Engineering, Citadel

Karishma Patel – public relations, disaster response
Researcher, RAND Corporation

James Daves – partnerships
Clinton Administration FCC; Everyone, Inc.

Emerson Tan – tech & epidemic response
Principal, Financial Empowerment Partners
Technical architect of 2014 Ebola response, Sierra Leone

Dr. Christopher Mores – virology, epidemiology
Professor, Milken Institute School of Public Health
2014-15 Ebola outbreak responder

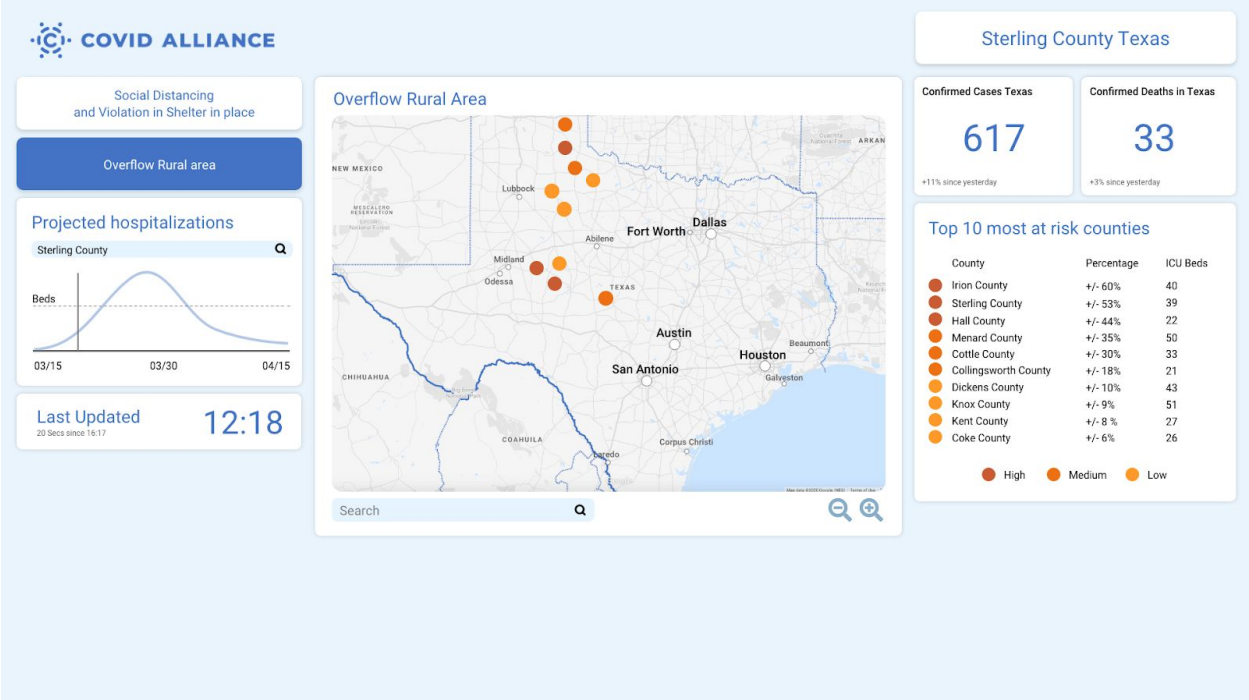
Matt Glickman – data platform
VP of Customer & Data Strategy, Snowflake Computing

John Fagan – partnerships, legal advisory
Director of U.S. Treasury's Markets Room (former)

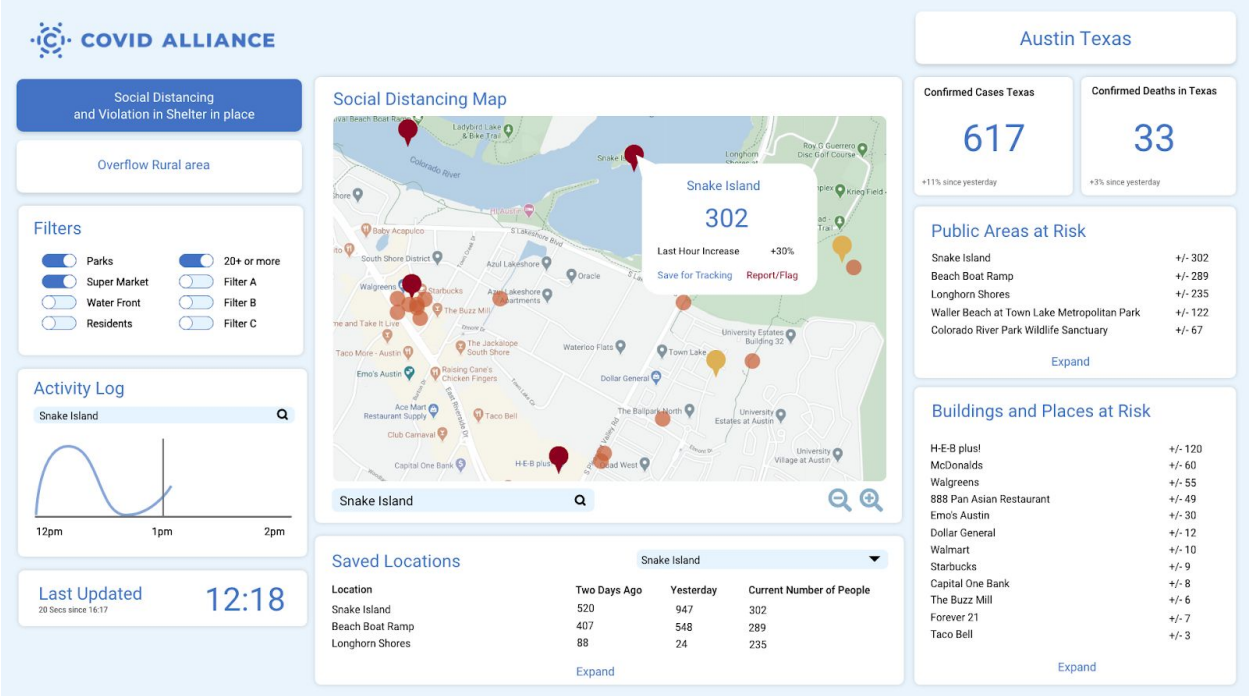
Brendan Walsh – econometrics, forecasting
Senior Analyst at Discovery Capital Management (former

Appendix 1: Sample dashboards

State Dashboard: Serve At-Risk Communities



City Dashboard: Manage COVID-19 Hotspots



Appendix 2: Details of Our Offering

Outbreak Containment Tool (timeline: target 1 week)

What it does: This tool provides clear, visual data on social distancing levels across any US state. It can continuously identify areas where there is currently insufficient or ineffective social distancing, monitor mass population outflows and inflows (e.g., from urban to rural areas). This tool provides near real-time analytics dashboards to help answer pressing questions about the movements of a population in order to stem the outbreak (which we provide anonymized and aggregated so individual identity is never revealed). When combined with opt-in or aggregated COVID-19 medical data, it will be possible to perform cluster analysis and more detailed outbreak modeling by location. The Outbreak Containment Tool is powered by our uniquely collaborative data platform and will become more effective over time: the platform can accept location data from any source, including opt-in user application data, and securely hides PII while allowing the institutions, tech companies, and research teams to develop the algorithms that inform policy decisions.

Why it is necessary: Local and state governments need decision support tools that provide as close to real-time information about the spread of COVID-19 as possible to coordinate local policies and activities. This data will clearly display social interaction levels and risk of COVID-19 spread at the community and neighborhood level to make informed policies for each community.

Contact Tracing Solution (timeline: target 2-3 weeks)

What it is: The core of the COVID Alliance approach is our unprecedentedly collaborative data platform that powers better connected contact tracing. While we can and will build and distribute our own app, our data platform can also connect to other contact tracing solutions to unite location tracing more effectively across all apps (we will only partner with opt-in apps that secure users' consent). This approach differs from other contact tracing apps in several ways:

1. Apps using our Contact Tracing Solution will work better because they are connected to more data sources. They will link to the data platform that powers the Outbreak Containment Tool and will also be connected to any other opt-in apps that partner with us (magnifying the effectiveness of the contact tracing capability).
2. We have designed this solution to maximally protect the privacy of your citizens. It is opt-in only (for location and for medical results), the data will be held only on our maximally secure backend (analysts and data scientists using this data will only receive anonymized representations to work with), and it will be deleted at the close of the COVID-19 outbreak.
3. Our data scientists are employed by the best tech and finance firms and daily use the cutting edge geolocation inference techniques our solution employs to provide the most contact tracing.

Why it is necessary: Within months, digital contact tracing will be a must have for health units, not a nice to have. Authorities who act now can have solutions in place which maintain privacy and consent while reaching levels of effectiveness nearing those used by European and Asian governments.[1] Our collaborative data platform will enable any connected contact tracing tools to get the maximum reach out of their data by pooling contact data--while preserving PII and privacy. Eventually, when social distancing requirements are lowered, this contact tracing solution can provide you the best capability to identify and isolate COVID-19 positive individuals to avoid follow-on waves of infection.

Remote Symptom Monitoring Tool (timeline: target 3-4 weeks)

What it does: The solution provides the ability to monitor, triage, and manage potential infections remotely. It allows individuals to self-report symptoms and measurements and to receive risk classifications based on algorithms informed by these symptoms combined with the contact tracing inferences. Health services can evaluate and confirm classifications, responding per each state's protocols. Example protocols are listed below:

- Low risk ➨ maintain social distancing ➨ provide best practice recommendations
- Moderate risk ➨ self-quarantine ➨ offer targeted information depending on severity of symptoms
- High risk ➨ get testing ➨ map nearby test centers and provide details on what to expect
- Critical risk ➨ [no recommendation] ➨ directly health services for a call/ambulance
- Recovered ➨ discharge ➨ maintain anonymized data to inform models and analysis

Protocols can be re-parameterized at different stages in the pandemic depending on availability of medical space, staff, and resources. Health services might also be interested in targeting other services to the self-quarantined, such as food drops, mental health interventions, mutual aid networks, etc.

Why it is necessary: The threat of overburdened hospitals, health care professionals, and medical supplies is one of the most dangerous posed by COVID-19. Using this capability, health professionals can manage out-of-hospital care for several patients at the same time, using a remote intake process and direct communication channels, potentially reducing the intake of non-priority cases at health care sites. In addition, acute/critical centers and regional healthcare coordinating efforts can gain situational awareness of demand for services and distribution of resources. Finally, this app can push targeted information to different groups of individuals in order to continue mitigating the spread of COVID-1 and encourage mental health and stress relief among citizens.

[1] Under certain conditions, opt-in digital contact tracing with even a simple decision rule can reduce the reproduction number (R_0) below 1.0, leading to containment (see David Bonsall, Michael Parker, Christophe Fraser. Sustainable containment of COVID-19 using smartphones in China: Scientific and ethical underpinnings for implementation of similar approaches in other settings. Oxford, UK)

Safe Restart Tool (timeline: target 6-8 weeks)

What it is: This will be a supercharged extension of the Outbreak Containment tool, including epidemiological models and dashboards to allow decision-makers to quantify the economic, health, and social impacts of different policy choices to gradually relax social distancing when safe. Neighborhood by neighborhood, this tool will allow each state or municipality to tailor specific restriction rollbacks to minimize the likelihood of a follow-on outbreak. Our full battery of location, health, and economic data will allow us to make the most accurate predictions available. We plan to:

1. Provide neighborhood-level epidemiological forecasts for the whole state
2. Collaborate with decision-makers to identify possible policy levers and provide adjustable models illustrating the health, economic, and social impacts of each
3. Provide instantaneous monitoring of COVID-19 density by neighborhood and provide alerts as soon as possible about neighborhoods where there is a potential resurgence

Why it is necessary: There will be enormous pressure on emergency management and healthcare response teams to soften social distancing protocols as soon as possible to restart economic activity; making this choice prematurely could lead to an uncontainable second wave of outbreak, while making this choice too late will unnecessarily penalize communities and businesses. These analyses will give states the evidence they need to make and defend the optimal decisions for their citizens.