

Stopping the Spread of COVID-19:

Contact Tracing Tools for Public Health

Our Contributors

This roundtable discussion includes input from some of Sunquest's leading experts in epidemiology and public health.



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The importance of COVID-19 contact tracing – that was the primary topic when Jonathan Pierson, Chief Operating Officer at Sunquest, hosted a roundtable discussion with two of Sunquest's leading experts in epidemiology and public health.

At the Q&A were Gwen Bell, MA, MPH, Public Health Professional Services Manager, and Tanya Oemig, Senior Professional Services Consultant. As epidemiologists, Gwen and Tanya each worked in public health for more than a decade before joining Sunquest, where they now specialize in helping public health organizations implement the Sunquest WorldCare™ Disease Surveillance and Outbreak Management System. Below, they share their perspectives.

Jonathan Pierson: As businesses, schools and other areas of life continue to reopen, what is the most common obstacle facing the public health effort to prevent new chains of COVID-19 transmission?

Tanya Oemig: Until an effective vaccine is broadly in use, contact tracing will remain crucial for safeguarding communities. Research published in mid-July shows that minimizing testing delays, in part through optimal contact tracing, may prevent up to 80 percent of onward transmissions.¹ But, optimal contact tracing requires efficient processes supported by appropriate technology for both the contact tracer and the contact. Where automation and data integration are lacking, these sudden demands on IT infrastructure and human capital can be overwhelming.

Jonathan Pierson: Certainly we are seeing unprecedented urgency for efficient communication and rapid responses. What is the solution for public health professionals today?

Gwen Bell: The challenges Tanya mentioned come from having disparate systems across workflows and facilities, so the best option is having one system that tracks and manages all aspects of a public health department's outbreak management workflow, from data exchanges to core epidemiological processes, including contact tracing. For example, public health organizations need to reduce time-consuming manual data flow – that's what a single system with automation and integrated reporting enables. They need to rapidly inform contact tracers while protecting patient privacy and overcoming barriers related to broadband access. They need a flexible system to align their efforts with rapidly changing needs, guidelines, hotspots, outbreak events and other unique circumstances – that's what custom configurable forms, reports and dashboards enable. But, it's not enough to have all things separately. The real optimization comes from having all that functionality rolled into one complete, secure system. That's what Sunquest WorldCare delivers.

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Tanya Oemig

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Jonathan Pierson: Tanya, tell us more about how Sunquest WorldCare facilitates better contact tracing by improving data flow.

Tanya Oemig: Effective contact tracing starts with timely information about every COVID-19-positive case. It needs to be easy for providers, labs and other agencies to report to public health departments, and it needs to be easy for public health departments to receive that information and act on it appropriately – even across numerous jurisdictions as infected and exposed individuals travel and spread out geographically. As a web-based solution, Sunquest WorldCare supports electronic laboratory reporting and interfaces with multiple systems for rapid, two-way data-sharing to help enable reporting obligations. The system's investigation capabilities then begin connecting dots across exposure locations, intuitively linking patients, cases and contacts.

Jonathan Pierson: So, without a solution like Sunquest WorldCare, public health operations need an enormous workforce to gather, analyze and share data by more manual means, which complicates the path to effective contact tracing, correct?

Gwen Bell: That's correct. Traditional contact tracing is labor intensive, requiring a dedicated and expensive workforce that has proved difficult to mobilize. In fact, the National Association of County and City Health Officials estimates 100,000 trained contact tracers are needed nationally for pandemic circumstances,² but ongoing field surveys show that only a handful of states have successfully hired and trained the recommended number of disease investigators so far for COVID-19.³ Many of today's contact tracers have been redeployed from other government agencies or local non-profits, community organizations, schools, and allied health professions.⁴ They need tools and training to achieve the level of performance required for maximum impact.

Recognizing this, Sunquest built Sunquest WorldCare to be a force multiplier that improves the efficiency of contact tracing and medical monitoring. In addition to educational tools for quickly training system users, Sunquest WorldCare provides highly configurable contact tracing forms, auditable documentation of user activities, and even a triage staging area that allows staff to review each notification or incident before routing into the system, if desired. The system automates many essential functions, including case creation of new infections, disease alerting, data imports, and symptom assessment via email and SMS.

Jonathan Pierson: One thing we have seen with this pandemic is the massive amount of data produced for COVID-19 testing and electronic laboratory reporting (ELR). What has been the impact to our customers using Sunquest WorldCare?

Gwen Bell: Sunquest WorldCare is scalable, built on an infrastructure that allows for an increase in volume, such as with ELRs and other data. Our customers have been able to scale up, in some cases experiencing a 5,000 percent increase in new records being processed into the system compared to the prior year. Not only are we seeing increases with ELR data, but also with the number of end-users accessing the system. This scalability demonstrates the purpose-built design of Sunquest WorldCare and its ability to manage not only day-to-day normal activity, but also expand when needed to support emerging diseases and volume that accompanies outbreaks and pandemics.



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Jonathan Pierson: What advantages does Sunquest WorldCare offer in terms of disease surveillance and management?

Tanya Oemig: The system comes with forms for every reportable disease, and new forms for newly emerging diseases can be added with ease, as our customers have demonstrated with COVID-19. Users can deploy any given form out of the box or have them configured with custom business rules that enable the investigation to evolve and expand, such as bringing in new outbreak events and adding more detailed questions.

Jonathan Pierson: To interrupt local chains of COVID-19 transmission, public health organizations need the ability to recognize clusters, hot spots and transmission characteristics. How do Sunquest WorldCare’s contact tracing capabilities provide that deeper level of visibility and insight?

Tanya Oemig: For one thing, the system’s report generator enables users to (A) generate pre-configured reports, such as epidemic curves, and (B) create extensive, user-configurable reports to meet specific, localized needs. Additionally, the dashboard component provides real-time graphs that make it easier to see and assess dynamic disease trends in the community. These features, combined with geographical mapping systems, allow public health agencies to target prevention methods in specific regions. And, of course, time is of the essence. As we all know, effective COVID-19 prevention depends on timely identification, outreach and isolation.

Jonathan Pierson: Yes, prevention is key, and it requires more than contact tracing, which brings us to our next point. How does Sunquest WorldCare support the transition from contact investigation to case management?

Gwen Bell: After identifying exposed individuals and encouraging them to quarantine and share their own contacts, the next crucial step involves frequently assessing their symptoms to refer for testing and care as appropriate. Sunquest WorldCare allows tracers to remain in contact with exposed individuals based on their preferences – phone, text or email. The Sunquest WorldCare solution also includes the option of a Public Portal so quarantined individuals can self-report by filling out daily symptom questionnaires securely online.

Jonathan Pierson: I’m glad you brought up patient privacy again because trust is essential for successfully engaging people in contact tracing efforts. Public health professionals – and the public – all need assurance that personal health information will be protected to the highest regulatory standards.



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Tanya Oemig: That’s absolutely true, and we advise due diligence before choosing any new reporting and contact tracing system. Some apps in market have already been called out for questionable data-sharing practices. Sunquest WorldCare provides that peace of mind by safeguarding data with intelligent security levels and password protocols across roles and jurisdictions. It also supports confidentiality and security standards with detailed audit trails. Users can securely import data from vaccine registries, death registries and other sources – and export data to use with third-party applications for deeper analysis – without complicated data migration efforts or risks to security. Unlike other solutions in the market today, Sunquest WorldCare is truly a turnkey, user-friendly, patient-focused solution that helps to ensure compliance across all access points for effective disease surveillance and outbreak management.

Jonathan Pierson: Sunquest WorldCare is also built to work anywhere in the world, making it exceptionally apt for a global pandemic – and it works for any disease, not just COVID-19, correct?

Gwen Bell: That’s right. Public health organizations in the U.S., Canada, Qatar and Australia are using Sunquest WorldCare for COVID-19 and many other infectious diseases they need to monitor and manage locally. To give just a couple of examples, the state of California – the world’s fifth-largest economy – uses Sunquest WorldCare for more than 125 diseases and conditions. And very recently, the Ministry of Public Health in Qatar was able to fully implement Sunquest WorldCare for COVID-19 and more than 140 other diseases, all in a very short timeframe with great success.

Jonathan Pierson: That pace of implementation is especially important now, as public health agencies continue to battle the COVID-19 pandemic. Some prospective customers have asked me if we could deploy our Sunquest WorldCare solution in one month to meet their time-sensitive needs during this pandemic. Is that possible, and if so, how?





Gwen Bell: Yes, Sunquest WorldCare can be deployed in less than a month. While there are numerous features that support rapid deployment, you asked what makes all that possible, and for that I'd say it really all comes back to Sunquest's extensive experience. We've been building and implementing laboratory information systems and software with seamless interfaces between laboratories and EHRs for decades, and we are proud to bring that expertise, agility and vision to the public health response. Sunquest WorldCare was built in partnership with public health departments, market-tested and market-proven long before COVID-19, and it has shaped our ability to support public health to the fullest for all types of disease outbreaks, both existing and new.

Tanya Oemig: Sunquest solutions are uniquely "person-centric," and the Sunquest WorldCare solution is no exception. It is designed to accommodate public health workflows as well as the nuanced behaviors of people they are trying to protect. That's true for novel diseases like COVID-19 and for persistent public health threats like HIV or tuberculosis. It truly is the ONE system public health departments need to manage disease threats across their communities.

¹ Impact of delays on effectiveness of contact tracing strategies for COVID-19: a modelling study. Mirjam E Kretzschmar, et al. The Lancet Public Health. Published online July 16, 2020. [https://doi.org/10.1016/S2468-2667\(20\)30157-2](https://doi.org/10.1016/S2468-2667(20)30157-2) (accessed July 30, 2020).

² Building COVID-19 Contact Tracing Capacity in Health Departments to Support Reopening American Society Safely. The National Association of County and City Health Officials (NACCHO). NACCHO Position Statement. April 16, 2020. <https://www.naccho.org/uploads/full-width-images/Contact-Tracing-Statement-4-16-2020.pdf>

³ As States Reopen, Do They Have The Workforce They Need To Stop Coronavirus Outbreaks? Selena Simmons-Duffin. National Public Radio (NPR). Published June 18, 2020. <https://www.npr.org/sections/health-shots/2020/06/18/879787448/as-states-reopen-do-they-have-the-workforce-they-need-to-stop-coronavirus-outbre> (accessed August 3, 2020).

⁴ A Coordinated, National Approach to Scaling Public Health Capacity for Contact Tracing and Disease Investigation. Michael Fraser, et al. The Association of State and Territorial Health Officials. Published 2020. <https://www.astho.org/COVID-19/A-National-Approach-for-Contact-Tracing/> (accessed August 3, 2020)

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