Contact tracing has been heralded as a key public health tool to control the spread of COVID-19. But intelligent contact tracing, with a privacy-first approach for maximum cooperation, is what will ensure the safety of communities and contain the spread of the virus.

Creating Workforce Resiliency: Return to the Workplace Safely with Contact Tracing

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Written by: Lynne A. Dunbrack, Group Vice President, IDC Health Insights

Introduction

Across the globe, countries are in various stages of opening — and, in some cases, reopening — their economies depending upon how well they managed the surge, provided access to fast and reliable COVID-19 testing, conducted contact tracing, and enforced public health guidelines regarding mask use and social distancing. As the private and public sectors plan for a safe return to the workplace, now is the time to rethink how and where work gets done. Many employees were able to continue working, albeit from home, during shelter-in-place mandates and mandatory shutdowns. To that end, employers are considering a range of "return to the workplace" options, including returning in waves and hybrid or location-agnostic models and technology to support them.

Return to the Workplace and Contact Tracing Defined

The phrase "return to work" is commonly used to describe reopening the economy. However, the term is somewhat of a misnomer. While many industries did slow or shut down during the pandemic because of declining demand or shutdown mandates, essential workers continued to go to their work sites and many workers were able to work remotely, collaborating with colleagues over numerous videoconferencing platforms. A more appropriate term is "return to the workplace."

As businesses focus on returning to the workplace, success comes from creating a reentry strategy that is integrated across people, technology, and data while building confidence and trust. It is important to have a plan that includes a structured sequence of coordinated actions that promote health and safety and reduce risk; allow businesses to monitor and manage changing conditions to inform decisions; and provide trusted communication to ensure employees are informed and prepared.
Contact tracing has been heralded as a key public health tool to control the spread of COVID-19. When a person is confirmed to have COVID-19, public health workers reach out to anyone the person came in contact with for more than 10 minutes and advise those individuals to self-isolate and be vigilant for symptoms. Employers are embracing contact tracing as employees begin to return to the workplace. Workplace solutions often include self-assessment tools that employees can use to report health status. These virtual agents or assistants can advise employees whether to go back to the workplace, work from home, or seek immediate medical attention and where to get resources if they need them.

Benefits of Intelligent Contact Tracing Solutions and Services

To be successful, organizations need to prioritize privacy and security; stay ahead of the curve by augmenting human workflows with AI as well as data and mobile access; and ultimately accelerate speed to value by implementing and scaling quickly. Technology-enabled contact tracing extends the following benefits to private and public sector entities:

» Track and monitor residents or employees who have tested positive for COVID-19 as well as those at risk because of exposure to contain the spread of infection.

» Share information securely with other public health agencies and corporations that are also conducting contact tracing as part of their return to the workplace strategies.

» Pinpoint communities or offices that are able to reopen safely and where hotspots are occurring to inform shelter-in-place/shutdown policies with more precision. Employers can also use these insights to identify groups of employees that should work from home if possible because they were exposed rather than shutting down a whole floor or building. Similarly, locations that need to be deeply sanitized can be prioritized.

» Provide the technology to enable high-touch and efficient contact tracing workflows. Mobile apps with virtual agents enable residents or employees to easily certify their health status. Bluetooth-enabled contact proximity tracking facilitates identifying people who came in contact with someone suspected of or confirmed as having COVID-19 to then inform them of their next steps to prevent the spread of the highly contagious virus.

» Accelerate implementation at scale to help states recruit and onboard contact tracers to meet staffing demands through the use of virtual agents. Large enterprise employers will also need to have contact tracing personnel on staff to manage the process of notifying employees of potential exposure and ensuring quarantining or isolation orders.

» Develop workforce resiliency in the face of the pandemic to return to the workplace safely and optimize their work going forward. Contact tracing by employers is another means of controlling the spread of COVID-19 in part because employers can mandate employees use these apps as a requirement of returning to the workplace. Government-sponsored contact tracing mobile apps that feature location tracking have been less successful (outside of authoritarian countries that mandate their use) because of privacy concerns.

Reopening the Economy Brings on New Risks

A state-by-state approach to reopening the American economy has provided a unique opportunity to see the impact of some states reopening too soon and other states taking a more conservative approach to loosening restrictions. In June, multiple states across the South and Midwest that were early to reopen saw hotspots pop up when people began to resist social distancing and mask use requirements. Even states that have strict public health policies in place and
relatively compliant citizenry have seen an uptick in the number of COVID-19 cases because people are craving social interactions. Similarly, as employees return to the workplace in large numbers, there is the risk of an uptick in COVID-19 cases.

As businesses reopen and schools and universities bring back students, the public and private sectors must be prepared to address changing conditions. Organizations need contact tracing for virtually any action that involves their people returning to their work location. Coupled with other actions to reopen the U.S. economy, the need for contact tracing and scalable health and safety solutions cannot be overstated.

Increasing numbers of COVID-19 cases will require intelligent contact tracing to ensure the safety of communities and contain the spread of COVID-19. When shelter-in-place orders were in effect, people who tested positive came in contact with an average of approximately five other people, making it easier for the infected individuals to provide contact tracers with the names of people who may have been exposed. However, as states open up, the number of contacts increases substantially. Moreover, many of these contacts will be strangers, so enhanced tracing capabilities will be required.

The private sector is focused on business continuity and optimization and how to build resiliency into organizations as employees return to work. Flexible, hybrid work models, especially for national employers, will be increasingly essential because hotspots will vary by region. Some companies are pulling out of their real estate holdings and allowing employees to work from home permanently. For example, Nationwide announced it is permanently transitioning to a hybrid model around four major corporate campuses in Ohio, Iowa, Arizona, and Texas. Most employees in other locations nationwide will work from home. Companies will have to carefully evaluate their options and the technology required to enable a safe return to the workplace.

Employers should survey employees to gauge how they feel about returning to the workplace and what would make them feel more comfortable. Some employees will welcome the return to the workplace and the opportunity to interact with colleagues in person and leave personal distractions at home. Others may not be comfortable returning to the workplace because they have personal health concerns or do not trust that their employer is taking all the necessary precautions to protect employees' safety.

A privacy-first approach is an essential consideration especially in countries such as the United States and Europe where residents value personal privacy, including their sensitive information (e.g., health, location). Addressing technical, privacy, and security issues is critical to encourage enough adoption by the population to make these contact tracing apps effective. An Oxford University study reveals that 60% of a country's population needs to use a contact tracing app for it to be effective at curbing the spread of the virus. Employers have more leeway when it comes to requiring the use of these applications. However, they also run the risk of a backlash from employees who become more wary of the concept of "Big Brother" monitoring their every move.
**Considering IBM Services for Contact Tracing**

IBM offers a modular solution and services for secure end-to-end contact tracing that enable public health agencies and employers to build out contact tracing programs incrementally or all at once depending upon their needs and ability to deploy the solution rapidly. IBM’s contact tracing solutions are delivered on a hybrid cloud across multiple cloud-based products for speed and scale.

- **Command operations** provides program governance and management, local and statewide communications programs, and security. It also enables volunteer network management via blockchain and coordinates the ecosystem. Dashboards provide contact tracing reports and a disruption index by county. Predictive analytics and visualization help public health agencies and employers identify patterns and progress.

- **Contact tracing case management** is provided by Watson Care Manager, a closed-loop customer relationship management (CRM) system that extends care and resources to citizens and employees. IBM Enhanced Discovery offers advanced contact tracing analytics.

- **Mobile app-based proximity tracing** is an opt-in app for users to facilitate contact tracing through the use of the Google/Apple open API framework and Bluetooth Low Energy (BLE) radio signals to detect another device’s BLE signal to register contact.

- **Contact tracer recruitment, onboarding, and training** are major challenges for public health agencies because of the scale at which they need to bring on staff and volunteers. IBM services support in-state staffing and targeted hiring services. IBM’s contact tracing solution leverages IBM’s Learning platform for online training of tracers on the ever-changing guidelines from the CDC, Johns Hopkins, and state and local public health agencies as more clinical information becomes known about COVID-19.

- **Virtual contact center** is enabled with Watson Virtual Assistant and Watson Agent Assist, which can address frequently asked questions and handle routine interactions to free up time for human contact tracers to have empathetic conversations with people who have just learned that they have COVID-19 or may have been exposed to the virus and are concerned about their health and what to do next.

- **Enhanced discovery for contact tracing** features investigative and analytics capabilities to locate relevant contact information for people potentially exposed to COVID-19 by searching public records to pre-populate contact information to minimize call time. Data integration services from IBM connect public health agencies and employers to a managed partner ecosystem.

**Challenges and Market Opportunities**

The challenges that IBM and its customers face can also present opportunities for a company with a strong services offering and a broad product portfolio:

- **Rapidly evolving and competitive market.** Solutions for contact tracing have been developed by a wide range of technology vendors ranging from start-ups and enterprise vendors repurposing their solutions to companies offering purpose-built solutions. The market at the state level for public sector contact tracing by public health agencies will be quickly saturated as they had to move quickly during the early stages of the pandemic to respond
to the public health crisis. Some states that managed the spread of COVID-19 well have reduced the number of contact tracers on hand. Other states had to rehire contact tracers because of a significant uptick in cases upon reopening their states. Public health officials are concerned about a second wave of COVID-19 in the fall and winter months, which in turn could create a replacement market for these solutions.

» **Resistance to proximity contact tracing.** Privacy concerns are a major factor in lack of adoption of proximity tracing apps offered by public health agencies. Employees may find themselves having to use employer-sponsored apps because their use will be a condition of returning to the workplace. Whether these apps are provided by the public or private sector, some people will value their personal privacy over the common good and will resist all contact tracing efforts.

**Conclusion**

Michael O. Leavitt, former Secretary of the U.S. Department of Health and Human Services, made the following statement at the Pandemic Influenza Leadership Forum in 2007: "Everything we do before a pandemic will seem alarmist. Everything we do after a pandemic will seem inadequate. This is the dilemma we face, but it should not stop us from doing what we can to prepare. We need to reach out to everyone with words that inform, but not inflame. We need to encourage everyone to prepare, but not panic." These words are prescient to today's global pandemic crisis.

To effectively contain the spread of COVID-19, the public and private sectors need an effective hybrid approach that emphasizes privacy and empathy and uses technology to scale with agility. A one-size-fits-all approach will not work because public and private sector entities will need different capabilities to serve their respective populations as economies are reopened and employees return to the workplace.

IDC believes that contact tracing solutions will continue to be an imperative for managing the spread of COVID-19, and to the extent that IBM can address the challenges described in this paper, the company has a significant opportunity for success.

**About the Analyst**

**Lynne A. Dunbrack, Group Vice President, IDC Health Insights**

Lynne Dunbrack is Group Vice President for Public Sector, which includes IDC Government Insights and IDC Health Insights. She manages a group of analysts who provide research-based advisory and consulting services for payers, providers, accountable care organizations, IT service providers, and the IT suppliers that serve those markets. Lynne also leads IDC Health Insights’ Connected Health IT Strategies program.
MESSAGE FROM THE SPONSOR

To successfully re-open and continue to rebuild the economy, a thoughtful approach to contact tracing is required. A strategy that puts people first while remaining agile and flexible will prioritize privacy and security as part of the experience design and will apply advanced analytics to anticipate and optimize responses in a highly fluid evolving environment. The significant disruption imposed on lives and economies calls for a safer way to support residents. Learn how to guard the health, safety, and productivity of your people with WatsonWorks.

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