**Frontline Data from Industry  
Employer-Initiated Contact Tracing Model for Businesses and Non-Healthcare Facilities**

**Abstract**

The outbreak of 2019 novel coronavirus disease (COVID-19) in Wuhan, Hubei Province, China, has spread internationally with the United States now suffering the most cases of any country on earth. COVID-19 is genetically distinct from SARS-CoV and MERS-CoV, yet closely related. Although not as deadly as those two diseases, evidence of COVID-19’s human-to-human transmission suggests it is more contagious than SARS-CoV or MERS-CoV.

Patient characteristics, age distributions and sex ratios, and case fatality and mortality rates are already well-understood by healthcare professionals. This allows them to create meaningful models projecting the “curve” of the viral spread and anticipate the public’s needs regarding beds, equipment, and consumables. A robust testing plan will improve the accuracy of these models and allow for increasingly accurate projections.

There are two essential elements, crucial to easing social distancing restrictions and allowing businesses to re-open and the economy to stabilize: 1) real-time analysis of viral spread through contact investigations and 2) ongoing analysis through persistent testing.

To ensure the public’s safety during this crisis, this paper presents a method to conduct Employer-Initiated Contact Tracing in non-healthcare and business settings to support public health monitoring and improve strategic targeting of limited resources.

**Introduction**

Tracing (aka, “public health surveillance”) is the “systemic, ongoing, collection, management, analysis, and interpretation of data followed by the dissemination of these data to public health programs to stimulate public health action.” (CDC, MMWR, July 27, 2012). Typically used to detect epidemics before they overwhelm a population, this process is also used to define the scope and magnitude of public health threats. It is this latter purpose that will inform and equip political and business leaders with timely information to disrupt the spread of COVID-19. Healthcare professionals are entrusted to use this data to advance public health and protect the confidentiality of all persons represented by the data. Contact tracing followed by treatment or isolation, is a key control measure in the battle against infectious diseases.

Detecting COVID-19 in a workforce or population begins with evaluating individuals. COVID-19 presents unique challenges for businesses and non-healthcare facilities as the 2 to 14-day dormancy period between exposure and symptoms could lead to risky behavior and a false sense of security. Every case of COVID-19 began as a contact, thus it stands to reason that maintaining social distance, consistent use of masks, and handwashing can provide significant protection from contracting and transmitting the virus. Ideally every person in a business would be tested regularly, along with consistent messaging on all preventative measures.

**Challenges in the Workplace**

*Testing*: While testing is essential to reopening businesses, test results reflect only past exposure (in the form of antibodies) or active infection (symptomatic/asymptomatic). A person can be exposed and infected and not yet have antibodies in their system, nor be symptomatic for 48 hours or more. This lag between exposure and a positive test result could lead to a false negative result and possible spread of the virus.

*Clinical Training*: Businesses are not expected to be expert in detecting or identifying symptoms in their employees. This plan recommends evaluating every employee, every day, for any of the recognized COVID-19 symptoms: general flu-like symptoms, fever, cough, shortness of breath or difficulty breathing, chills, repeated shaking with chills, muscle pain, headache, sore throat, new loss of taste or smell. These symptoms may appear 2-14 days after exposure to the virus. An employee with any of these symptoms should be referred for immediate testing. This list is not all-inclusive. Employers are advised to err on the side of caution when referring employees with suspected COVID-19 symptoms to healthcare professionals for testing and direct care.

If an employee develops any of these **emergency warning signs** for COVID-19 get medical attention immediately: trouble breathing, persistent pain or pressure in the chest, new confusion or inability to arouse, bluish lips or face. This list is not all inclusive. Please consult a medical professional for any other symptoms that are severe or cause concern.

**Employer-Initiated Contact Investigation Plan**

The Employer-Initiated Contact Investigation (EICI) can be managed by a human resource professional or administrative personnel advised of employees’ right to privacy regarding medical conditions and treatment. The information gathered is meant solely for the use of public health officials, and should be limited to workplace interactions among employees, vendors, or any other visitors to the work location(s). Interactions outside of the workplace (unless at work-sanctioned events) do not fall under the purview of this investigation and should never be requested by the employer.

1. Data – Have updated contact information for all employees
2. Assessment –Frequent health checks for COVID-19 symptoms can detect cases early
   1. Assess symptoms with every employee
   2. Remove any employee reporting a positive symptom
   3. Request employees self-quarantine according to local and state guidelines until safe to return to work
3. Referral
   1. Refer employees with a possible COVID-19 case for testing and medical treatment
   2. Do not allow employees to return to work without a negative test result, or
   3. Require employees to self-quarantine for 14 days if testing is not available
4. Employer-Initiated Contact Investigation - Contact Investigation begins after identifying an employee with a positive symptom (above) and referral for testing. EICI should be conducted by a human resource or administrative professional aware of employee privacy rights.
   1. *Positive Symptom or Confirmed Positive Test Result* -- DO NOT disclose the identity of the COVID-19 positive employee to co-workers. Inform the employee they are not required to disclose personal contact information to their employer. Personal information shared with an employer should only be shared with public health professionals to notify others in cases of an exposure risk.
      1. Identify all persons in the workplace exposed to infectious cases of COVID-19
         1. Conduct remote interview with employee about workplace contacts (interactions within 6-foot radius) in the previous 14 days
         2. Ask for names (and contact information in the case of vendors) for all persons who may have shared airspace or come within 6 feet of the employee: co-workers, vendors, visitors, anyone on-site during the 14-day period
            1. Compile data into a single document including all available names, addresses, and phone numbers and forward to designated public health professional or contact tracing representative for the area
         3. Cross-reference contacts with co-workers
            1. Assess exposed co-workers for 14 days from date of interaction with positive case
      2. Notify all coworkers who have interacted with employee, within pervious 14 days of a positive result, of their possible COVID-19 exposure. DO NOT disclose the employees’ identity.
      3. Remove any contacts from the work environment if they report a recognized COVID-19 symptom
         1. Begin the entire EICI process again (*return to step 4*) with the contact employee
         2. Refer contacts for testing immediately and monitor their condition daily for 14 days from the time of exposure, or
         3. Require employees to self-quarantine for 14 days if testing is not available
         4. Conduct Contact Investigation for any employee who tests positive for COVID-19
   2. *Negative Test Result* -- DO NOT disclose the identity of the COVID-19 negative employee to co-workers. Inform the employee they are not required to disclose personal contact information to their employer. Personal information shared with an employer should only be shared with public health professionals to notify others in cases of an exposure risk.
      1. Discuss reason(s) for test referral with the employee
      2. Advise of other symptoms the employee may experience and should be alerted to if the test was a false negative
      3. Ask the employee to limit interactions with co-workers for 14 days from the first reported symptom- i.e. reinforce best social distancing practices, wear a mask, wash hands, and other safeguards per OSHA/CDC regulations.
      4. Continually assess the employee for 14 days from date of reported symptom or interaction with positive case, whichever is *longer*