COVID-19

RESOLVE TO SAVE LIVES | Vital Strategies

APRIL 2020

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Contact Tracing Protocol

Overarching issues for jurisdictions to address (Not in priority order)

1 **Decide if legal vs voluntary**

a. Isolation for index cases – status known to be positive

b. Quarantine for close contacts – exposed, status unknown

2 **Establish priority threshold for in-person outreach**

a. Case non-response – known positive

b. Contact in high-risk congregate setting

c. Close contact non-response

3 **Define close contact**

a. Household member

b. Intimate contact

c. High risk / congregate setting

d. Contact ‹6 ft for ›30m (or ›10m?)

4 **Determine how to manage presumptive cases (non lab-confirmed)**

a. Symptomatic, presumed positive

b. Home testing

c. Other missing test info

5 **Define social supports package and eligibility**

a. Hoteling

b. Essentials

c. Incentives

d. Staffing

6 **Arrange clinical linkage for contacts**

a. Telemedicine support for symptoms

b. Testing if symptomatic

TABLE 1. PROTOCOL FOR CONTACT TRACING / COVID-19 INFECTION

Step		Description	Data Elements	Traditional Process	Critical Operational Issues
1	**Index case identification**	DOH receives case report of a confirmed or presumptive case [e.g. NYC today new onset fever or cough or anosmia – presumptive]	Demographics (name, age/DOB, gender), exposure category contact info (all phones, emails, social media, street address), translation needed?	Confirmed lab test reported to DOH, including method of testing and test result, including cycle threshold if PCR And/or Case notification by provider	Report of case • Source? – lab (less info) vs provider (more info, higher proportion w poc increase) • How report received at DOH? Electronic reporting? Manual? • Is case info entered into database? • How to identify case if home testing becomes available? How to prioritize non lab-confirmed cases? • Home testing cases • Presumptive cases (symptomatic, no test)
2	**Index case notification**	Initial notification of a confirmed or presumptive case [e.g. NYC today new onset fever or cough or anosmia – presumptive]		Cascade: • Phone • Email • Mail a letter • In-person outreach	Need to establish contact with case: • Often insufficient locator info with lab reporting. • Phone number reliability estimated around 75% • In-person outreach if no locator info or unreachable? Communicate in patient's language?
2A	**Communicate with index case**	Verify identity of case. If case is deceased, seek out surrogate and use them for contact tracing. Engage and build trust. Explain availability of social supports and clinical linkage.	Updated contact medium and preferences	Phone call	Translation or other language services available to communicate with patient? App as primary contact when human back-up unavailable? App as initial screen with in-person outreach to review and verify information? Note: Simpler during physical distancing since fewer contacts. Much more complicated physical distancing is relaxed.

Step		Description	Data Elements	Traditional Process	Critical Operational Issues
2B	**Supports**	• Send digital thermometer • Review, identify, and connect for social supports, wraparound services – handoff to Care Coordinator • Offer linkage to clinical services, esp if no primary care provider available – provide website/ telephone info			Range and type of wraparound services to be offered (e.g., food, laundry, pharmacy svcs) – include childcare, mental health svcs (incl sud support), support for caregivers (eg, disability svcs) Voluntary offer of non-hospital isolation (hotel, dormitory) with services provided (e.g., food, laundry) if unable to isolate at home safely (e.g., elderly housemate), homeless, or if preferred. Clinical linkage to telemed safety net if no primary care provider Income support for people out of work?
2C	**Interview**	Identify potential infectious period before isolation (48 hours before symptom onset for symptomatic patient)	Epi investigation (definitions for exposure settings, interactions) Nice to have: Lab cycle threshold (CT) value (lower CT correlates w › viral load)		How to establish earliest plausible infectious period for asymptomatic cases reported?

Step		Description	Data Elements	Traditional Process	Critical Operational Issues
2D	**Elicit and obtain locating information about contacts**	Contacts from 48h prior to symptom onset thru beginning of isolation period or thru 7 days after symptom onset and 72h after fever resolved: 1. Household members 2. Intimate partners 3. Individual providing care in a household 4. Individual who has had close contact (‹ 6 feet) for a prolonged period (›30 minutes as an initial threshold)	For each contact, name and nickname, email, all phones, social media handles, address, risk type		All contacts to be notified anonymously – i.e., the identity of the index patient will not be revealed, and will not be confirmed if asked. App opportunity for pt to select contacts from phone to download to contact list, improve accuracy of data. Some jurisdictions ask cases to notify contacts directly. • Ask index case to notify household contacts directly? • Ask index case to notify all known contacts directly? Does HIPAA apply to contact notification/ monitoring? Ie, this is public health work, exempt? Close contact length of time for exposure? (10m v 30m)
2E	**Advice and instructions**	• Isolate • Monitor symptoms – contact caregiver if short of breath • Duration of isolation/ criteria for lifting • Inform might be back in touch in case need more information about either locating contacts or epi investigation			How is case monitoring different from contact monitoring? E.g., closer medical monitoring, reports of contacts that have happened since isolation began Voluntary vs mandatory isolation? Monitor compliance? Need to address question of duration of quarantine for contacts who are household members of case.

Step		Description	Data Elements	Traditional Process	Critical Operational Issues
3	**High risk/ congregate setting investigation**	If contacts include exposure via congregate setting, hand off case to higher level investigation	Index case contact info, high-risk/ congregate exposure setting info (location, date/time, known contact info).		How to hand off from app to traditional DOH investigators? How much information, when to advise case? Media or other public notifications about exposure? (eg, on the 4 train bw 11-1130am Th). Consider only if index confirmed to have transmitted to others? How to handle interjurisdictional communication and handoffs?
4	**Notify contacts**	• Notification of exposure		1. Send SMS/ Email/ Phone/ Letter to notify 2. Received 3. Acknowledgement and response	Speed is essential for this step. App can facilitate. How to handle interjurisdictional communication and handoffs?
4A	**Interview**	Notification of exposure Engage and build trust Assessment of symptoms	Update contact medium and preferences Symptoms?	Email OR Phone call Return to index case if hard to reach or missing info.	App as primary w human back-up? In-person outreach if unreachable? In-person outreach if no locating info? Structure for reaching household contacts, i.e., one point of contact per household vs every household member as separate contact (because HIPAA)

Step		Description	Data Elements	Traditional Process	Critical Operational Issues
4B	**Supports**	• Send thermometer • Wraparound services • Linkage to clinical services			Range and type of wraparound services to be offered (e.g., food, laundry, pharmacy svcs) Relocation for quarantine in exceptional cases? What is threshold for offer, i.e., different from index case or same? Clinical linkage to telemed safety net if no primary care provider. Connect to testing via providers. Income support for people out of work?
4C	**Advice and instructions**	• Quarantine 14d from date of last potential exposure • Monitor symptoms • Call if fever, cough, shortness of breath			Voluntary vs mandatory quarantine? Maybe more efficient to motivate compliance with apps App can give health advice and answer questions, e.g., educ video, chatbot.
5	**Monitor contacts**	Daily report on symptoms (for 14d after last date of contact during infectious interval)	1. Sent 2. Received 3. Acknowledged	Phone call	App only? Digital upload of temperature? Whether and how to monitor compliance with quarantine.
5A	**Follow up: non-response**	Outreach to patient		Email OR Phone call	In-person outreach? How intensive? (e.g., same day home visit if no response by 3pm)
5B	**Follow up: reported illness**	If patient reports illness, linkage to clinical services			Do symptomatic contacts need testing, or just assume positive? – will depend on context. If testing symptomatic contacts, how? E.g., home test kit

Step		Description	Data Elements	Traditional Process	Critical Operational Issues
5C	**Follow up: reported test**	If patient reports testing, follow up to confirm results submitted to DOH/provider? If positive, contact becomes case, return to step 1.			Testing questions - • Any role for testing in asymptomatic contacts? – if resources allow, should be done and evaluated for yield. Perhaps closest contacts, or contacts of pt who has been known to transmit. • How does contact report test results if self-administered? Do the results need to be confirmed?
6	**Close out contact case**	After 14d without symptoms, notify of release from monitoring and instructions, provide general health education		Email OR Phone call	Offer warmline for post-monitoring issues? eg, new case among contact case close contacts

Public health workforce

The essential work of contact tracing (CT) involves four tasks: successful contact and notification of exposure; assessment of symptoms and clinical linkage, if needed; education and instructions for quarantine, and arrangements for social supports, if needed; continued monitoring and close-out. Individuals with customer service skills and experience could fulfill this role with training in basic public health educator skills, including health information confidentiality.

The challenge is to implement this workforce at scale in a jurisdiction. The anticipated number of contacts is potentially massive, given the considerable number of new index cases identified each day and the highly infectious nature of the virus. Many jurisdictions abandoned contact tracing early on in the outbreak, overwhelmed by the sheer volume of contacts to be traced, reliant on traditional time-consuming methods and a limited workforce.

The proposed approach relies on the rapid and efficient recruitment, training, and deployment of a contact tracing workforce to meet the needs of a jurisdiction for containing and suppressing local transmission. This approach can be further augmented with the use of digital applications to facilitate components of the contract tracing work, including contact elicitation, contact notification, and contact monitoring. It is possible, however, to begin with the implementation of a large-scale jurisdiction-level workforce, operating under the management of the local health department.

1 Hiring models

CT workers may be recruited from the community in the jurisdiction, from among the many unemployed workers in the current landscape. The need for rapidity and scale may be best accomplished by contracting with a third party, under the oversight of the local health department. Hiring models might include:

a. Call center company
b. Telehealth company
c. Local health department

2 Training models

a. Standardized vs jurisdiction-designed and mounted
b. Online module-based

3 Workforce projections

a. # CT workers per team
b. # contacts per case
c. # cases per team / # contacts per team
d. # cases at time (t) per jurisdiction population
    i. # CT teams (# CT team supervisors)

4. Public health workforce tasks and roles

Task	Role (descriptive title)	Task expectations
Locating information for case	Locater	Low skill, time intensive
Making connection with case	Locater (Case investigator if connection is field-based?)	Low skill, potentially time intensive
Interviewing case, advising and eliciting contacts	Case investigator	Moderate skill, time intensive
Arranging social supports for case	Care Coordinator	High skill, time intensive
Monitoring case	Case manager	Low skill, brief
Locating information for contact	Locater (Contact investigator if connection is field-based?)	Low skill, time intensive
Making connection with contact	Locater	Low skill, potentially time intensive
Interviewing and advising contact	Contact tracer	Moderate skill, potentially time intensive
Arranging social supports for case	Care Coordinator	High skill, time intensive
Monitoring contact	Contact manager	Low skill, brief
Closing out contact	Contact manager	Low skill, brief

Social supports

Jurisdictions should consider contracting with a local care coordination provider to facilitate social supports for contacts entering quarantine and, where necessary, for cases in isolation. Funding must cover staffing and resource needs, where these cannot be delivered directly by the jurisdiction.

1 Basic resources

For many contacts, a brief intervention may be sufficient, including basic resources and warmline support for follow-up. The basic resources for all contacts entering 14d quarantine must include:

- Daily check-in phone calls
- Instructions of how to keep space clean for those sharing space
- Hotline for counseling, information, social services, and medical support
- Masks
- Thermometers
- Health education materials
- Hand sanitizer & alcohol-based cleanser

2 Eligibility for social supports

Jurisdictions will need to determine eligibility criteria for the provision of social supports. Considerations may include: income level, housing status, occupational status.

3 Social supports are wraparound services, and include:

a. Care package

To control COVID-19 infection and prevent transmission, it is important that contacts maintain the requisite quarantine period. To accomplish this, individuals may require basic social supports for daily living. The care package offered to all contacts entering 14d quarantine should include:

- Food, laundry, pharmacy services
- Garbage removal

b. Hoteling services

Hoteling services for the 14d quarantine period may be necessary for individuals who live with vulnerable individuals, are precariously housed, unsheltered, or homeless, or who otherwise cannot remain in their current residence.

c. Financial support

Jurisdictions should also consider arrangements for providing financial support for individuals to recover lost income during the quarantine period. These could include:

- Stipend from government to those without sick leave or who need to take care of child or elderly dependents
- Work with employers to provide support, with possible tax credits

d. Incentives

Jurisdictions may consider incorporating incentives into the care package to reinforce quarantine, such as:

- Passwords for on-demand movies, e-books, learning channels
- Access to high-speed internet and laptop
- Encouraging note from the mayor

Clinical linkage

The quarantine and monitoring of contacts relies on self-reported information provided by the contact. Contacts will receive basic resources to support symptom monitoring, such as a digital thermometer, but may require symptom management advice and clinical consult services during the 14d quarantine period. Contacts may have telephonic or video access to their regular primary care provider for addressing this need.

1 Telemedicine safety net

For contacts who do not have access to a regular primary care provider, jurisdictions should arrange a telemedicine safety net pool of providers for on-call clinical consult with contacts in quarantine. Given current advice for testing first directs symptomatic individuals to seek clinical advice from their provider, the availability of this service will be indispensable to ensuring contacts in quarantine can be rapidly connected to testing and care.