Follow-up for Positive COVID-19 Cases and their Close Contacts

Tools for LBOHs

June 26, 2020

Hillary Johnson, MHS, Infectious Disease Epidemiologist
Scott Troppy, MPH, PMP, CIC, Surveillance Epidemiologist
Bureau of Infectious Disease and Laboratory Sciences
MA Department of Public Health
Topics Today

- MAVEN Overview
- MAVEN Online Status Map – one town to go
- School Immunization Requirements for 2020-2021
- Reminder about Flights – Call Epi Program not CDC Quarantine Station Yourselves (we will do it 😊)

- Key Concepts Worth Discussion
  - Serology (antibody) Testing
  - Antigen Testing
  - Defining Close Contact

- Your Questions
This is Our Last Friday Webinar

Tuesdays @ 11am will continue in July

Isolation of Cases and Quarantine of Contacts is the goal until that strategy changes/evolves.

MAVEN is the main reporting source and where you should document your work.
  • Send Cases to CTC for follow-up if not:
    • Hospitalized, Deceased, or linked to a Cluster Facility

Focusing on Priority Activities

Clusters in Facilities in your community need your help.
  • Call Epi Program to create cluster events.

MAVEN Help has Guidance Documents and Previous Webinars: http://www.maventrainingsite.com/maven-help/toc.html

MDPH Epi Program: 617-983-6800
MDPH MAVEN Help Desk: isishelp@state.ma.us
MDPH Food Protection Program: 617-983-6712
CTC Help Desk: 857-305-2828
Updates for today, Tuesday, 6/26

• MAVEN Status Map – one town to go
• Legionella and COVID co-infection link
• Reminder to review your COVID-19 Immediate Notification Workflow – clear these events out on a daily basis
• Updated LBOH Final Review Workflow – we have removed COVID-19 events
MAVEN Status Map as of 6/26/2020

Massachusetts Virtual Epidemiologic Network

Massachusetts Virtual Epidemiologic Network (MAVEN) is a web-based disease surveillance and case management system that enables MDPH and local health to capture and transfer appropriate public health, laboratory, and clinical data efficiently and securely over the Internet in real-time. The system interfaces with Electronic Laboratory Reporting (ELR) efforts, has automatic 24/7/365 notification of state and local officials of any event requiring their attention and geographic information system (GIS) activities. MAVEN will replace the current paper-based methods of data exchange between MDPH, local public health, and clinicians. For more information please contact isiselpostate.ma.us or by phone at (617) 983-6801.

This map displays 350 out of the 351 cities and towns in Massachusetts receiving disease notifications electronically through the MAVEN System as of May 27, 2020.

*Boston reporting data via BoSS MAVEN.

For more detailed information please zoom in on the map or click on town.

MAVEN Status May 2020

- Online (350)
- Offline (1)
Immediate Notification workflow (COVID-19 Only)

• **UPDATE:** We have updated the **COVID-19 Immediate Notification Workflow**
  • This will allow proper notification of all new COVID-19 events for your jurisdiction.
  • Please review all events/cases in this workflow and complete your **Step 1- LBOH Notification to “Yes”** to clear out this workflow.
  • If you are retaining ownership then complete Steps 2 (Investigation Started) & 3 (LBOH Investigator (name, lboh, phone number))
  • When you are done then complete Steps 4 (CRF Complete) & 5 (Final Review)
LBOH Final Review Workflow

- **LBOH Final Review Workflow**: We have updated the workflow to only show non-COVID-19 cases that are still pending. Please review this workflow and complete or close out any older events/cases.
- Once you complete Step 5 these non-COVID cases will be removed
MAVEN Help Section

How to Contact the Maven help desk in ISIS.
We are available M-F (9-5pm)

- ISIS Help Desk 617-983-6801
- ISIS Fax Number 617-983-6813
- isishelp@state.ma.us
  (do not email names or identifying information - use the MAVEN Event ID)
- Epi-of-the-Day and Epidemiologist on Call 617-983-6800
- Maven Change Request Document (please print, complete and out fax back to ISIS to request changes, enhancements, corrections to the MAVEN database)

MAVEN Online Help

COVID-19 LBOH
General Information
Frequently Asked Questions (FAQs)
Division of Global Populations (DGP)
ePostcards/Webinars
2020-21 School Immunization Requirements

- Immunization requirements maintained for upcoming school year, which include the new MenACWY vaccine requirement for Grades 7 and 11

- Rationale:
  - School requirements are important tools for maintaining a well-vaccinated population
  - Lower vaccination rates increase susceptibility to vaccine-preventable disease
  - We need to reduce overall burden of disease during this ongoing COVID-19 pandemic

- Compliance with school requirements are enforced at the local level
  - We encourage schools to work with families and healthcare providers during the initial months of the school year to satisfy the requirements for students who are not compliant on the first day of school

- We strongly encourage even greater emphasis on flu immunization this fall
  - Flu-visits may be a good time to administer catch-up vaccines
2020-21 School Immunization Requirements

- **School survey:**
  - Childcare/Preschool, Kindergarten, and Grade 7 surveys will be conducted this fall with an extended deadline
  - The new Grade 11 survey (assessing the new MenACWY requirement) will be implemented in the 2021 calendar year

- Assessment Unit epidemiologists are available by email ([immassessmentunit@MassMail.State.MA.US](mailto:immassessmentunit@MassMail.State.MA.US)) or phone (617-983-4330) to assist with interpreting catch-up vaccine schedules.

- Thank you again for everything you are doing to support these important public health activities!
Flights & Cruises While Infectious

If your confirmed or probable case traveled while infectious and may have exposed others via airplane or maritime vessel (cruise or cargo):

1. Update MAVEN notes
2. Call Epi program so MDPH can notify the Quarantine Station.
3. LBOH – please do not call the Quarantine Station Yourself.

**Key Demographic Data Needed:**
- Case Name
- Date of Birth
- Full address
- Clinical Info:
  - Symptom Onset Date & Specific Symptoms

**Travel Information:**
- Airline or cruise company,
- Flight number,
- Seat or cabin number,
- Departure and arrival locations and times,
- Reason for travel and if they traveled alone or with others.

Do the best you can. Travel dates & flight numbers are key even if you don’t have seat number.
Three Key Concepts Worth Review:

- **Serology Testing** – What is our follow-up for positive serologies and what is our messaging around serology testing?

- **Antigen Testing** – What is the appropriate follow-up for antigen positive patients?

- **Close Contact** – What is considered close contact and how do Masks influence this situation?
Use June 1 Results Interpretation Guidance

• Describes what test results likely mean, (combinations of PCR and antibody testing), and the corresponding public health response.

• Big June Update: Remember, now we triage serology results based upon if they have recent symptoms or not.

• Additional Note: Antigen Tests are on this chart and, while still a small % of testing conducted, worth noting for their specific follow-up.

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**Molecular & Antigen Test Results**

<table>
<thead>
<tr>
<th>SARS-CoV-2 PCR or Antigen Test</th>
<th>Antibody Test</th>
<th>Interpretation</th>
<th>Public Health Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Negative</td>
<td>IgM</td>
<td>IgG</td>
</tr>
<tr>
<td>X</td>
<td>Negative antibody results</td>
<td><strong>X</strong></td>
<td>Positive or negative antibody results</td>
</tr>
<tr>
<td>X</td>
<td>Positive antibody results</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Antibody Test Results**

<table>
<thead>
<tr>
<th>SARS-CoV-2 PCR or Antigen Test</th>
<th>Antibody Test</th>
<th>Interpretation</th>
<th>Public Health Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown or Previously PCR or Antigen Negative</td>
<td>+</td>
<td>- or unknown</td>
<td>Likely recent infection</td>
</tr>
<tr>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- or unknown</td>
<td>+</td>
<td></td>
<td>Likely recent or resolving infection</td>
</tr>
<tr>
<td>-</td>
<td>+</td>
<td></td>
<td>Likely resolving or resolved infection</td>
</tr>
<tr>
<td>+</td>
<td></td>
<td></td>
<td>Infection at some undetermined point</td>
</tr>
</tbody>
</table>

**Previously PCR or Antigen Positive**

<table>
<thead>
<tr>
<th>SARS-CoV-2 PCR or Antigen Test</th>
<th>Antibody Test</th>
<th>Interpretation</th>
<th>Public Health Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>-</td>
<td></td>
<td>Confirmed infection at time indicated by PCR or antigen result</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Appropriately symptomatic is defined as: either cough or shortness of breath, OR at least two of the following symptoms – fever, chills, shakiness, headaches, myalgia, oral ulcers, sore throat and new loss of taste or smell.*
Key Concept: Serology (Antibody Tests)

• Serology Testing – What is our follow-up for positive serologies and what is our messaging around serology testing?
  • We started out requiring isolation for all serology positive individuals without a concurrent PCR test out of an abundance of caution.
    • Serology tests measure antibodies, but those antibodies CAN show up fairly quickly after infection, so it isn’t always a guarantee that a patient was infected LONG AGO.
    • Serology tests do not yet tell us if a patient is immune.
      • We don’t yet know how long immunity lasts, or what would be a good measurement of antibodies so we could definitively say, yes, this person is immune.
  • MDPH recommendation still stands to not use serology testing for acute diagnosis, and to obtain a PCR test at the same time if you do get a serology test.
  • June 1, MDPH updated our follow-up and serology interpretation table to begin to focus follow-up only on those serology positive people who say they have had recent symptoms in the last 14 days.
    • (If no symptoms reported = then no isolation & quarantine)
Positive Serology
(with no current PCR result)

Follow-up protocol:
• Obtain symptom information and hospitalization status

• If never symptomatic OR asymptomatic for the last 14 days:
  • no additional testing or follow-up needed

• If recently (within 14 days) appropriately* symptomatic:
  • initiate isolation period based on symptom onset (10 days with at least 3 days fever free and improvement in respiratory symptoms)
    o can consider pursuing PCR testing, if negative can discontinue isolation

• Identify contacts with exposure to case through end of isolation period and institute 14-day quarantine as appropriate
Positive Serology (with no current PCR result)

• How is this follow-up guidance (June) different than initial follow-up guidance?
  • A. Initially, all positive serology by default required isolation of cases and quarantine of contacts (only a PCR result could change that). Updated guidance now says if you have recent symptoms, you should isolate and contacts quarantine, but if you do not have recent symptoms, LBOH can interview case and be done.

• PCRs still trump serology testing. A positive PCR means a confirmed case. A negative PCR means not currently infectious and no isolation needed (but still Probable based upon positive serology).
Your Questions: Serology (Antibody Test)

• Q. Please clarify once again a positive serology with no symptoms, past symptoms months ago, & no PCR. Do they have to isolate?
  • A. No.
  • This would be a probable case that you would call to interview (because you have a positive serology lab).
  • Ask them if they have had symptoms in the last 14 days.
    • If NO, then you complete the interview. No Isolation. No Contact Tracing. (One and done!)
    • If YES, then you determine an infectious period & isolation based upon recent symptom onset date.
      • Symptoms in last 14 days = Yes isolation & Yes Contact Notification (based upon symptom onsets)
Table Review

• If you have a new positive serology
  (And the case had a previous +PCR test a while ago)
  • This was a confirmed case before.
  • New positive results should just attach to the previous event.
  • No new isolation of case or quarantine of contacts required.
  • No New Action.

Just a reminder that new serologies after a previous positive PCR (case was followed up long ago) are potentially expected and require no action.

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<tr>
<th>SARS-CoV-2 PCR Or Antigen Test</th>
<th>Antibody Test</th>
<th>Interpretation</th>
<th>Public Health Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Negative</td>
<td>IgM</td>
<td>IgG</td>
</tr>
<tr>
<td>For patients with nasal swab not done or done at some point prior to blood draw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previously PCR or Antigen Positive</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

- Confirmed infection at time indicated by PCR or antigen result
- No additional follow-up needed assuming appropriate follow-up done associated with original PCR/antigen positive
- If follow-up was not previously done, obtain symptom and hospitalization information

*Appropriately symptomatic is defined as: either cough or shortness of breath, OR at least two of the following symptoms – fever, chills, shaking chills, headache, myalgia, sore throat and new
Key Concepts: Antigen Testing

- **Antigen Testing** – What is the appropriate follow-up for antigen positive patients?
  - A. The follow-up is similar to a positive PCR.
    - Consider this a likely new case. Interview and follow-up according to symptom onset date.
      - If no symptoms, use date of test to determine isolation period and contact exposure for close contacts.
      - Despite considering this a likely new case, this type of lab test will still be classified as a “probable” for surveillance.
    - Antigen testing is still rarer, but we anticipate more to come in terms of both guidance and use.
# Molecular (PCR) and Antigen Testing

<table>
<thead>
<tr>
<th>Molecular Test (PCR)</th>
<th>Antigen Test - Newer (still rare)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Detects genetic material of the virus using a lab technique called polymerase chain reaction (PCR).</td>
<td>• Detects certain proteins that are part of the virus.</td>
</tr>
<tr>
<td>• Nasal, Throat, or Nasopharyngeal Swab or from saliva</td>
<td>• Nasal or Throat swab to get a fluid sample</td>
</tr>
<tr>
<td>• Test can be a Rapid Test (results in minutes on site)</td>
<td>• Rapid Test - results in minutes on site.</td>
</tr>
<tr>
<td>• Or one to two days if sent to an outside lab.</td>
<td>• May be accompanied by additional PCR Test</td>
</tr>
<tr>
<td>• Some home test kits have also been FDA approved.</td>
<td>• Only seeing them with two providers currently:</td>
</tr>
<tr>
<td></td>
<td>• Carewell &amp; SouthCoast</td>
</tr>
</tbody>
</table>

Molecular (PCR) and Antigen Testing

Molecular Test (PCR)
- Listed in Lab Tab as follows:
  - 2019-nCoV Real-time RT-PCR (PCR)
  - SARS coronavirus 2 RdRp gene (PCR RAPID)

Antigen Test - Newer (still rare)
- Listed in Lab Tab as follows:
  - SARS-CoV-2 Ag (Antigen Test)

Positive Molecular Test:
Case Classification = CONFIRMED

Positive Antigen Test:
Case Classification = PROBABLE

Case Classification Manual

- Pages 3&4
- Table on different Lab Reports
  - Test Type
  - Specimen Source
  - Result possibilities
  - What informatics terms to use for each lab (what you see in the Lab Tab & what the technical IT jargon means)

<table>
<thead>
<tr>
<th>Report Type</th>
<th>Test Type</th>
<th>Source</th>
<th>Result</th>
<th>New event or beyond report period?</th>
<th>Data Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Report</td>
<td>PCR</td>
<td>Clinical specimen</td>
<td>Positive</td>
<td>Yes</td>
<td>New event Confirmed</td>
</tr>
<tr>
<td>Select 2019-nCoV Real-time RT-PCR</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>PCR</td>
<td>Clinical specimen</td>
<td>Negative</td>
<td>Yes</td>
<td>New event Unclassified</td>
</tr>
<tr>
<td>Select 2019-nCoV Real-time RT-PCR</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>PCR</td>
<td>Clinical specimen</td>
<td>Unsatisfactory, Inconclusive, Invalid</td>
<td>Yes</td>
<td>New event Unclassified</td>
</tr>
<tr>
<td>Select 2019-nCoV Real-time RT-PCR</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>Rapid molecular or molecular point-of-care tests</td>
<td>Clinical specimen</td>
<td>Positive</td>
<td>Yes</td>
<td>New event Confirmed</td>
</tr>
<tr>
<td>Select SARS coronavirus 2 RdRp gene</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>Rapid molecular or molecular point-of-care tests</td>
<td>Clinical specimen</td>
<td>Negative</td>
<td>Yes</td>
<td>New event Unclassified</td>
</tr>
<tr>
<td>Select SARS coronavirus 2 RdRp gene</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>Rapid molecular or molecular point-of-care tests</td>
<td>Clinical specimen</td>
<td>Inconclusive, Invalid</td>
<td>Yes</td>
<td>New event Unclassified</td>
</tr>
<tr>
<td>Select SARS coronavirus 2 RdRp gene</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>Antibody tests</td>
<td>Clinical specimen</td>
<td>Positive</td>
<td>Yes</td>
<td>New event Probable</td>
</tr>
<tr>
<td>Select SARS-CoV-2 IgM</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Same event</td>
</tr>
<tr>
<td>IgM specific</td>
<td>SARS-CoV-2 IgM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IgG specific</td>
<td>SARS-CoV-2 IgG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antibody Type Unspecified</td>
<td>SARS-CoV-2 IgM + IgG</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

What is the Public Health Follow-up?

- **PCR, Antigen, & Serology NEGATIVE**: (usually unclassified events in MAVEN). No follow-up needed. But if they were a contact they should complete their quarantine.
  - Negative PCR or Antigen doesn’t end quarantine early.

Interpreting Antigen Testing

- This table just describes likely “interpretation” and is not official case classification.
  - PER CDC & CSTE Case definition, Antigen tests are still classified as PROBABLE

- Antigen testing was most likely pursued for acute diagnosis, so we follow-up like we would for PCR test results.

- **PCR or Antigen POSITIVE (serology doesn't matter):** Treat like a new case. Follow-up Accordingly.
Your Questions:

• Q. I have heard both antigen testing and antibody testing referred to on our calls. Are both being done? Do we respond the same?
  • A. Yes, both are being done, but likely for different reasons. Our response is different.
    • In theory, antigen testing is being used for acute diagnosis.
    • Antibody (serology) testing is likely being done for determining previous illness and immunity status.
    • (This is what we WANT antibody testing to tell us, but the data is not yet there to give us this answer.)

• If you get an antigen test, treat it like a new case and proceed with normal interview, isolation, and contact tracing (using symptom onset or date of test if no symptoms).

• If you get an antibody test, interview the patient and determine if they had symptoms in the last 14 days or not.
  • If yes to recent symptoms, treat like a case (isolate case, quarantine contacts, etc.)
  • If no, complete interview and you are all done (update notes, but no isolation or contact tracing).
Your Question: New Labs for Old Contacts

• Q. How do we document contacts who complete quarantine then 2 months later have positive tests and become a probable or confirmed case?

• A. Great Question! This is happening more and more. The answer may evolve if we figure out a different strategy within MAVEN, but currently the process is as follows:

  • New Labs will append to an old matching person event.
    • So a new PCR would merge onto an old Contact Event (even if you already did steps 1-5 long ago).
    • MDPH is updating the Case Classification Status to “Confirmed” or “Probable” from Contact.
    • Your LBOH will receive a MAVEN Task Assignment.

  • You should clear out/update Admin Question Package Steps 1-5 accordingly for new follow-up and tracking. This includes your CTC assistance requested variable to make sure it accurately reflects the current preference.
    • Also update Contact Monitoring Status = In Progress (because you will want to update to COMPLETE when the case now exits isolation).
    • Clinical Information from your interview will go into the Clinical Question Package #3.

    • If you have questions, give MDPH a call or email and we will do our best to help you.
Key Concept: Close Contact & Risk

• Q. Can you go over close contact - is it close contact if you are wearing a mask and more than 15 minutes and closer than 6 ft, etc.?

• A. We give a clear cutoff of >10-15 consecutive minutes within 6 feet of an infectious individual to give us a starting point to work with.

• Cloth masks are a risk reduction tool. They do not completely prevent exposure.
  • If a case and contact wore cloth masks together, you would still consider the contact exposed and need to quarantine – but hopefully they have reduced their chances of developing illness by wearing those masks.

• Timing is linear.
  • The more time you spend with a case, the greater your risk for exposure and infection. The person who sits next to a case for 4 hours is at a greater risk of infection than the person who sat next to the case for 20 minutes, but we would consider them both close contacts that need to quarantine.

• Space is linear as well.
  • The person who sits right next to a case is at greater risk than the person who sits 6 ft away, and that person is at greater risk of exposure than the person who is 8 feet away.

Remember, all these elements are “and” components of risk reduction not “or.” Nothing replaces anything else. They all help, and together help more in reducing risk.
Key Concept: Close Contact & Risk

• There will be scenarios that do not meet the definition of Close Contact per our cutoff, but that does not mean the contact wasn’t exposed. We need a cutoff, and we need guidance to help people reduce risk, which is why we say 6 feet. (Data supports using this metric.)

  • Other things that affect risk:
    • Enclosed vs. Open spaces.
    • Activities that expel droplets (singing, exercising, playing an instrument, yelling, etc.)

  • We focus our follow-up efforts on “close contacts” because they are at the greatest risk.
    • People can reduce their risk by practicing risk minimizing behaviors, but we would still consider them exposed.
      • Ex: A hair dresser and client are masked and gloved, but the hair dresser then tests positive.
        • The client was still exposed and should quarantine (but hopefully has reduced their risk of developing illness by wearing masks and other things)
Your Questions: Antigen & Antibody tests

Q. If an antibody/antigen test comes back positive are you saying that we have to treat it as a current probable case and advise isolation and contact close contacts to quarantine?

• **A.** Both an antibody test or an antigen test are technically PROBABLE for their surveillance case definition, but they are not equal in their follow-up.

  • You would treat the antigen test like a PCR test: the assumption is a new case and (if they are asymptomatic, you go by date of test for isolation and follow-up). They may say they had symptoms before, but we have to go with their only positive test, which is current.

  • The antibody test is what has been updated in terms of our follow-up. You would interview them to determine if they had symptoms in the last 14 days and if not, there is no need for isolation and quarantine and their follow-up is complete. If they DID have recent symptoms, you would respond based upon date of symptoms.

• Consult this document here, and note that they positive PCR and antigen tests are grouped together. The serology antibody tests are grouped differently.

Your Questions:

- **Q.** Is their guidance on who can or can not do contract tracing in a surge?
  - **A.** Contact Tracing is still a core public health function. Partnerships are often required to make that happen.
    - Students in Public Health from MA Schools of Public Health
    - Government designated organization like PIH and the CTC
    - VNAs and regional health groups.

- The question arises – do businesses and schools also participate?
  - They likely have a role. But more on this to come.
I LOVE QUESTIONS

QUESTIONS ARE MY FAVORITE