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

Cluster Events in MAVEN

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Topics Today

- **Defining Clusters**
  - What criteria is required to create a cluster?

- **Naming Clusters**
  - Rules for Naming Cluster Events

- **Creating Epi Clusters in MAVEN**
  - Step by Step Process in MAVEN

- **Linking Events to Clusters**
  - Step by Step Process in MAVEN

- **Reviewing/Defining Key Variables** in Cluster Events and linked Case Events
  - Risk QP5 Variables (individual cases)
Tuesday Webinars for COVID-19 Case Investigation and Follow-up

Tuesdays @ 11am

MAVEN Help has Guidance Documents and Previous Webinars:

MDPH Epi Program: 617-983-6800
MDPH MAVEN Help Desk: isishelp@mass.gov
MDPH Food Protection Program: 617-983-6712
CTC Help Desk: 857-305-2828
COVID19CommunityTracingCollaborativeQuestions@mass.gov
Defining Clusters

YOU GET A CLUSTER AND YOU GET A CLUSTER

EVERYBODY GETS A CLUSTER
Clusters: OUTBREAK EVENTS

- As we begin to track more exposures, transmission, and outbreaks in institutions of higher ed (IHEs) and elsewhere (schools, daycares, etc.), we will be talking more about clusters.

- Clusters events can be tracked in MAVEN, and many of you have already seen them in relation to the work we have been doing for COVID-19 in long term care facilities (LTCFs), nursing homes, rest homes, etc.

- MDPH will be issuing ongoing guidance regarding the creation of cluster events in MAVEN to help track these events as we move forward this fall.

- Cluster Events in MAVEN are called “OUTBREAK EVENTS.”
What constitutes a COVID “cluster?”

• In general, DPH defines a COVID cluster as:
  
  • At least two confirmed cases from different households with a shared exposure where close contact is known or suspected to have taken place among a group of five or more people
    • In dormitory settings, roommates are considered “household” members.
  
• We have a lower threshold for creating cluster events for certain settings: LTCFs and other healthcare facilities, correctional facilities, shelters and daycares.

• But for other facilities (schools, colleges, businesses, social or other events) a cluster event only needs to be created if it meets the above definition.
Examples:

- **Clusters (cluster events should be created!)
  - 2 confirmed cases in college students who attended the same 30-person house party
  - 2 confirmed cases in colleagues who were both in the office for a meeting of 10 people on August 31 and later became cases
    - Think about a shared exposure source that resulted in 2 or more cases after the fact.

- **NOT clusters (no cluster events need to be created)
  - 1 confirmed case who attended a 10-person baby shower while infectious
  - 2 confirmed cases in friends who met for lunch (no one else dined with them)
  - 3 confirmed cases in family members all residing in the same household
  - 3 roommates in a triple room in a dorm
  - 2 confirmed cases in students from Elementary School X; cases’ classrooms are in different wings of the building and they did not overlap in the cafeteria or other shared spaces
    - A single confirmed case spreading to one other person does not a cluster make.
Things to think about when considering a cluster:

• Often people may start out as linked contacts to an index case.
  • Example: You are interviewing a case and find out he hosted a birthday party last night with 10 guests (while he was infectious).
    • We do not yet have a cluster, but you should work to create contact events for all the close contacts and link them to your index case.

• Identifying a shared source of exposure for confirmed cases through your interviews can lead to identifying a cluster.
  • Example: 3 of the birthday attendees became cases.
    • The birthday party event now meets our definition of a cluster, and could be created as a cluster event in MAVEN.
    • Notes in the cluster event could include details about the party, risk behaviors, things that help inform our work.
Things to think about when considering a cluster:

- An index case can spread to many contacts, but that doesn’t necessarily constitute a cluster.
  - **Example:** Our birthday boy had a drink with a neighbor the night before the party, had a personal training session with a trainer in the morning, and had coffee with the dog walker afterwards. All three people later became cases.
    - Remember those are all individual contacts and there isn’t an associated sentinel event or shared group exposure that would make that a cluster. Birthday Boy is just a very social index case with a lot of spread because he’s clearly not observing good social distancing practices.

- **Think of a cluster as shared source of infection.**
  - **Typically needs to be more than just one source and one spread.**
    - **Example:** If Birthday Boy went to hockey practice and infected one teammate out of 20 players, that does not constitute the 2 people needed for the cluster.
      - If 2 or more hockey players went to group practice on Monday and became sick and tested positive after the fact, THAT could be a cluster (2 people with a shared exposure in a setting with 5+ people.)
Things to think about when considering a cluster:

• You can always link contacts to their index case. That should be your primary action.
  • Cluster identification may come after further interviews and information gathering, as well as observing outcomes in quarantining contacts.

• If you have questions about what constitutes a cluster, please call Epi Program 617-983-6800. We are happy to discuss the scenario and provide recommendations.

• Remember, the ultimate goal is to stop the spread of COVID-19. Retrospective reviews and cluster identification can be helpful for informing trends and helping to identify risk activities and populations.
  • However we still want to focus on contact identification and appropriate isolation and quarantine implementation.
  • Don’t get caught up with whether the 2 cases you have should be a cluster event or not.
Many new user groups are onboarding with MAVEN, particularly around Institutes of Higher Ed (IHEs).

We anticipate that many of our upcoming cluster identification in MAVEN will be associated with students returning to IHEs this fall (particularly because many are instituting massive surveillance testing programs).

### Responsibility Matrix – Case Investigation, Contact Tracing, Isolation/Quarantine, Monitoring

<table>
<thead>
<tr>
<th>MODEL A</th>
<th>LPH PRIME</th>
<th>MODEL C</th>
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<tbody>
<tr>
<td></td>
<td>• LPH performs all Case Investigation, Contact Tracing, Monitoring</td>
<td>INTEGRATED COLLABORATION (ADD TO MODELS A &amp; B)</td>
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<tr>
<td></td>
<td>• School formally shares Information as available</td>
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<td></td>
<td>• School use of MAVEN for CI</td>
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<td>• Enhanced data integration available for CT</td>
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<th>MODEL B</th>
<th>CTC PRIME</th>
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<td>• CTC performs all Case Investigation, Contact Tracing, Monitoring</td>
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<tr>
<th>MODEL D</th>
<th>School PRIME</th>
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<tr>
<td></td>
<td>• School performs all Case Investigation, Contact Tracing, Monitoring</td>
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<td></td>
<td>• Delegated authority from LPH</td>
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<td></td>
<td>• Must meet LPH and DPH criteria</td>
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<td>• Required use of MAVEN</td>
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How Higher Ed COVID events are linked to clusters

- **Cluster Event**: functionality that allows for linkages of cases associated with a known outbreak/cluster
  - allows collection of aggregate information specific to a situation
- **Umbrella Cluster**: Refers to an organizational institution (higher ed) and will be used to track the number of associated epi clusters by institution
  - each higher education intuition will have a single umbrella cluster (Event IDs will be distributed)
- **Epi Cluster**: Refers to a suspected or known exposure setting with multiple cases and contacts. Risk based epi clusters are defined by MDPH epidemiologists
  - Epi Clusters will be created by MDPH protocol
  - Epi Clusters will be linked to an umbrella cluster
  - COVID individual events will be linked to an epi cluster if appropriate
Example: Clusters at Williams College and Smith College

Note that only epi clusters (not cases) are linked to umbrella clusters.

**Williams College**
- Williams soccer team cluster
  - Stephen Robinson
- Williams dorm cluster (Agard House)
  - Chip Bublé
  - Eleanor Alvarez
  - MJ Edwards

**Smith College**
- Smith on-campus party cluster (Parsons House)
  - Ayana Washington
  - Sally Tucker
  - Evelyn Pham
- Smith journalism club cluster
  - Jessica Rodriguez
  - Abby Smith

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**Key**
- Umbrella clusters
- Epi clusters
- Cases

***Names of folks on this slide are fake names for demonstration purposes***
Umbrella clusters

• Umbrella clusters have been created for all 106 colleges and universities in Massachusetts
• A listing with MAVEN ids is available on MAVEN Help
• Umbrella clusters will be searchable under the following general naming convention:
  • SCHLU_[School Name]_[City/Town]

A full excel document of the official lost of IHE Umbrella Clusters is located in MAVEN Help:

Umbrella Cluster Reference List -Institutions of Higher Education_ver1.0_Sept1
Cluster Naming

“You have a condition whose name is very hard to remember.”
Cluster Naming Convention:

- **Naming Convention for Facility-based Clusters:**
  - `FACILITYTYPE_FACILITYNAME_TOWN`

Examples:
- `DAYC_HAPPYVILLAGE_SPRINGFIELD`
- `LTCF_CAREONE_NEWTON`
- `OTHR_BOSTONCALLING_BOSTON`
- `SCHL_BUWOMENSSOCCERTEAM_BOSTON`
### Standard Abbreviations for Facility Types

- **ALF**: assisted living facility
- **BUS**: any workplace, business, or company not captured in other categories
- **CORR**: correctional facility (prison, jail, etc.)
- **DAYC**: daycare centers
- **GH**: group home
- **HC_OTHR**: other healthcare facility
- **HOMELESS**: Homeless encampment (homeless shelters captured as SHEL T)
- **HOSP**: hospital or medical center
- **IND**: independent living facility
- **LTAC**: long-term acute care
- **LTCF**: long-term care facility
- **SCHL**: school (all types, including elementary, secondary, and colleges/universities)
  - **SCHLU**: special designation for COVID umbrella clusters created for colleges/universities and boarding schools – usually MDPH created
- **SHEL T**: shelter
- **OTHR**: other settings, such as an event (e.g., protest, food truck festival), program (e.g., adult day program, camp), or community resource (e.g., place of worship, community center)
Creating Epi Clusters in MAVEN

We Have A Tip Sheet!

Creating a Cluster Event in MAVEN

In general, it is only recommended that cluster events be created when two or more cases of disease are associated with a common exposure. Please refer to available disease-specific guidance for what defines a cluster.

1) Click on "Create Cluster/Outbreak/Aggregate Event" from the left-hand menu of the MAVEN dashboard.
2) Use the cluster naming conventions that follow to enter a "Name," and select the disease type from the "Event" drop-down menu.

3) Complete the Standard Question Package (SQP)

The Standard SQP is common among all cluster types and should be completed with details of the shared exposure among cases (i.e., why you are creating the cluster event).

At a minimum, the following fields should be completed at the time of cluster creation, across disease types:

- **Exposure Setting Name:** The full name of the affected facility or description of the shared event.
- **Exposure Setting Type:** Select the setting of the exposure, using the available options (if possible).
- **Affected Events:** This field appears conditionally on the cluster event so that impacted forms have access to this event.

4) Complete additional fields, as required by available disease-specific guidance

The remaining variables in the Standard SQP are helpful to track the location of the cluster event, point of contact at the affected setting, and to ensure appropriate regulatory agencies have been notified.

Please refer to available disease-specific guidance for additional required fields in the Standard SQP, as well as other disease-specific question packages that populate based on the cluster type (Respiratory Hot Questions, All Illness, etc.)
Clusters – How to find one that already exists

• Cluster: A facility or location based event - Outbreak Event in MAVEN
  • Schools, LTCF, Rest Homes, Nursing Homes, Group Homes, etc.
  • Can also find your Umbrella Cluster and look for linked Epi Clusters to see if already exists.
• Find one in MAVEN
• Then Link individual people events to cluster

Update Type to “Outbreak” (from Normal)

If you cannot find a Cluster or are not sure if one already exists, you can also call the Epi Program at 617-983-6800.

Try not to create duplicates.
Searching for an existing Cluster

1. Select the “Search Event” icon on the left-hand menu of the MAVEN dashboard.

2. To search for a cluster event, change “Event” from “Normal” to “Outbreak” or use wildcards to search for component parts of a cluster name.

   - Example: all clusters associated with daycare will be populated by searching for “DAYC*”.
   - Example: all clusters that have “party” anywhere in the name can be found by searching for “PART*”.

3. Use the “From” and “To Dates” to narrow the range of your search. These dates search on the date the cluster event was created.
Searching for an existing Cluster

3. The “Name” field searches on the cluster name that is defined upon creating the cluster event, as defined above (i.e., FACILITYTYPE_FACILITYNAME_TOWN). The search functionality is not sensitive to capitalization.

- Use the wildcard function (*) to search for components of a cluster name.
  - Example: all clusters associated with daycares will be populated by searching for “DAYC*”.
- You can search for a key word in the middle of a cluster’s name by using the wildcard before and after your search term.
  - Example: all clusters that have “party” anywhere in the name can be found by searching for “*PARTY*”
- Use the From and To Dates to narrow the range of your search. These dates search on the date the cluster event was created.
Creating a New Cluster

- Click on “Create Cluster/Outbreak/Aggregate Event” from the left-hand menu of the MAVEN dashboard.
- Use the cluster naming conventions that follow to enter a “Name”, and select the disease type from the “Event” drop-down menu.
Creating a Cluster

Complete the Standard Question Package (QP)
The Standard QP is common among all cluster types and should be completed with details of the shared exposure among cases (i.e., why you are creating the cluster event).
Creating a Cluster- Standard QP

NEW to capture CTC and Higher Ed investigators
When creating an epi cluster event for a higher ed institution:

- Complete Education Institution block related to the epi exposure at the college/university
- ALSO complete the exposure setting name block (for now)
  - Given the epi exposure (i.e., dorm, party, sports team) is captured under the Education Institution block, recommend using “College/University” as the setting type
- **These variables** are associated with jurisdiction (whether LBOH or Higher Ed investigator can see event)
- Standard Question Package Variables in the Cluster are VERY Important to fill out as completely as possible.
- Affected Town(s) will give different LBOHs access to the Cluster. Be sure to add towns as different people from different towns get linked.
Cluster Creation Summary - Use the Tip Sheet

• Look for existing events.
  • Tip: If looking for Epi Clusters for a specific school, look up the umbrella event and you can see what Epi clusters are linked.
  • Tip: Remember to change Event Type from ‘Normal’ to ‘Outbreak’ to view clusters in a search.
• Naming Convention: FACILITYTYPE_FACILITYNAME_TOWN
• Fill in Standard Question Package Variables and the Notes. (Other question packages are less applicable for COVID-19 Clusters)
• Remember to add notes and thorough descriptions for these clusters.
• Link relevant events.
  • Are you creating new events or linking to existing events? Make sure to look for existing events first.
Linking Individual Events (Cases) to Cluster Events

I SEE LINKS EVERYWHERE

This View of a COVID event looks the same for cases and contacts. They all have the same Question Packages Available.

- What’s linked? Go here to see/link to contacts or a cluster event.
- Confirmed/Probable/Suspect/Contact
- Lab Tab to see lab tests
- Patient Person Details (address, phone)
- Electronic Trail for this event. Who has entered data? Where did this case come from?
- 6 Question Packages
- View Wizard
- Link all associated cases to the Epi Cluster
  - Encourage completion of the Higher Ed variables in the Risk QP of linked cases
- Link the Epi Cluster to the Umbrella Cluster for the higher ed institution
  - Do not link individual cases to the Umbrella cluster
Linking to Clusters

• Use the tip sheet.

• You can be in either event and link to the other via the Linked Events (View)
  • Keep track of what event you are “in” and what event you are “looking” for.

• Most often, you will be linking to an “existing” event when linking people to clusters.
  • As opposed to often creating and linking to a “new” contact event when linking a contact to an index case.
Every Event has a Linked Events Page

8/4 UPDATE: Link Type should always be Primary when linking events to a cluster event.

- **PRIMARY Link Type**: Use for all links (residents and staff) to clusters
- **SECONDARY Link Type**: Please do not use at this time for linking people to Clusters.
- There are more options for link types when linking contacts to each other. You can use the best link type in that situation (household contact, daycare contact, etc.)
Cluster Events – how to manage the linked people.

Oh my goodness, how many people are linked to this cluster!
MAVEN Reports are the Key
Cluster Events – how to manage the linked people. (Cluster Line List Report)

• You end up with a report (1 line per person).
• The columns are the MAVEN Variables so you can see who is missing information.
• You can sort (pull your confirmed cases and work on updating those events).

This report has been updated! Better (more applicable) data variables will be visible!
Reviewing Key Variables for Cluster Events and Individual Cases

There are two types of people in this world:

Those who can extrapolate from incomplete data
Question Package 5. Risk/Exposure/Control & Prevention has updated variables to capture Risk (and higher Ed information).

Make sure to thoroughly fill out Question Package 5 for all your confirmed cases.
COMPLETING THE COVID RISK QP

THE TOP HALF
All questions pertain to the 14 days prior to case’s infection.

This should be completed with the NAME and location of the facility.

In addition to having exposure to this setting during 14 days prior to infection, did the case also expose others in setting once infectious.

The intent of this question is to identify another group setting that the case may have exposed others, not to list all possible places the case exposed others.
Complete ALL questions related to each exposure

If case had exposure to more than one group setting, ALL should be documented.

There are two places you need to repeat fields if case was exposed to more than one group setting.

Please make sure to complete BOTH repeatable blocks:
1) Facility location
2) Facility type

Please complete these fields in order (i.e., the first facility location corresponds to the first facility type)
If a case is found to be associated with a cluster at one of the listed facilities, you can document the date it was linked to the facility’s cluster event here for your own tracking purposes.

Most important (and relevant) for healthcare workers. “Worker type” options pertain only to healthcare settings.

Please remember to complete Occupation and Employer Information in the Demographic Question Package!
THE BOTTOM HALF

COMPLETING THE COVID RISK QP
### College/University and Boarding School Information

**Education Institution:**
- Boston College

**Add New**

**Date linked to cluster, if applicable:**

**Campus, if applicable:**
- Boston College - Brighton Campus

**Education exposure setting:**

**Association:**
- Undergrad Student

**Please complete the Employer and Occupation Information in the Demographic Question Package**

**Residence Type:**
- On-campus

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**Case-specific Variables (unrelated to any exposure)**

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<table>
<thead>
<tr>
<th><strong>Education Institution:</strong></th>
<th>Boston College</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Add New</strong></td>
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</tr>
</tbody>
</table>

**Date linked to cluster, if applicable:**
- mm/dd/yyyy

**Campus, if applicable:**
- [Dropdown]

**Education exposure setting:**
- Sports Team
  - Specify:
    - Undergraduate Club Football Team

**Association:**
- [Dropdown]

**Residence Type:**
- [Dropdown]
Case-Specific Information

- Education Institution:
  - Boston College
- Date linked to cluster, if applicable:
  - mm/dd/yyyy
- Campus, if applicable:
  - Boston College - Brighton Campus
- Education exposure setting:
- Association:
  - Undergrad Student

Please complete the Employer and Occupation Information in the

Residence Type:
- On-campus

Exposure Information

- Education Institution:
  - Boston University
- Date linked to cluster, if applicable:
  - mm/dd/yyyy
- Campus, if applicable:
- Education exposure setting:
  - Party
  - Specify:
    - Off-campus BU student's house party
- Association:
- Residence Type:
OK, let’s summarize from today....

FELL ASLEEP DURING A LECTURE

WOKE UP IN TIME FOR SUMMARY
Reporting of Higher Ed testing volume, cases and clusters

- Laboratory data will be used to document testing volume and percent positivity
- Cases will be counted via the Education Institution variable
- Contacts will be linked to confirmed index cases
- **If created,** Epi clusters will be linked to a primary umbrella cluster
  - Ex. Boston College is the umbrella cluster
  - All epi clusters such as a classroom, dorm, etc. would be linked to the BC umbrella cluster
  - Individual cases will need to be linked to each epi cluster
  - X number of clusters at Boston College, with X number of associated cases and contacts
  - Individual university students not yet associated with any cluster should not be linked to the umbrella cluster.
If nothing else, remember...

- The investigation and contact tracing of COVID cases associated with higher education institutions are conducted by LBOHS as well as the CTC and the institutions themselves
- New variable in case and cluster events: EDUCATION INSTITUTION
  - Assigns jurisdiction to ensure higher ed investigators can see cases and is used for counting cases
    - Still need to complete Affected Town(s) for relevant LBOH(s) in cluster events
    - Most higher ed cases will not be linked to anything
Reviewing Today

• Defining Clusters
  • At least two confirmed cases from different households with a shared exposure where close contact is known or suspected to have taken place among a group of five or more people
    • In dormitory settings, roommates are considered “household” members.

• Naming Clusters
  • FACILITYTYPE_FACILITYNAME_TOWN - Use Tip Sheet

• Creating Epi Clusters in MAVEN
  • Step by Step Process in MAVEN – Use Tip Sheet

• Linking Events to Clusters
  • Step by Step Process in MAVEN – Use Tip Sheet

• Reviewing/Defining Key Variables in Cluster Events and linked Case Events
  • Risk QP5 Variables (individual cases) – Required for all individual cases, but particularly relevant for higher ed and people who work or attend congregate settings (schools, daycares, jails, etc.).
Let’s go into the training site to practice