Table of Contents
Version History & Relevant Updates ........................................................................................................ 2
Guidance for Creating and Assigning Clusters .................................................................................... 3
  Criteria for when to create a MAVEN cluster event by facility/exposure type ................................ 3
  Searching for Existing Cluster Events in MAVEN ............................................................................ 4
Naming COVID cluster events in MAVEN .............................................................................................. 6
Question Packages & Required Variables for COVID Cluster Events in MAVEN ................................. 8
Notes Field ............................................................................................................................................. 12
Managing Linked Cases .......................................................................................................................... 13
  How to Link Events: .............................................................................................................................. 13
Tracking Individual Events and Clusters Across the CRM & in MAVEN ............................................. 14
  Contacts that Subsequently Test Positive – How to Address in MAVEN .......................................... 15
    The Contact Event Exists in MAVEN already: ................................................................................. 15
    The Contact Event Was Created in the CRM and May Not Exist in MAVEN: .............................. 16
Notify Associated LBOHs as Applicable. Share Events with LBOHs as Applicable. ......................... 17
Notify MDPH for Newsworthy or High Priority Situations ................................................................ 17
Closing Cluster Events ............................................................................................................................ 18
Special Considerations for Specific Cluster Types .............................................................................. 19
  Clusters in Institutions of Higher Education .................................................................................... 19
  Guidance for Daycare/Childcare Facility Clusters .......................................................................... 20
  Guidance for Hockey Clusters ........................................................................................................... 21
COVID Cluster Assignment Protocol for DPH Staff ............................................................................. 21
High Priority COVID Cluster Identification and Updates .................................................................... 22
Resources and Tip Sheets ....................................................................................................................... 23

Note: This SOP is a living document (always a work in progress) and will be updated as needed to reflect current practices in COVID cluster creation and follow-up.
### Version History & Relevant Updates

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>1. SOP for CTC EIU COVID Cluster Follow-Up</td>
<td>Ver 1.0</td>
<td>11/15/2020</td>
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11/15/2020
## Guidance for Creating and Assigning Clusters

### Criteria for when to create a MAVEN cluster event by facility/exposure type

<table>
<thead>
<tr>
<th>Facility/Exposure Type</th>
<th>Minimum criteria needed to create a cluster event</th>
<th>State Epidemiologist Assigned</th>
</tr>
</thead>
</table>
| LTC facilities (nursing homes and rest homes) | • One confirmed case in a HCP\(^a\), or  
• One facility-acquired\(^b\) confirmed case in a resident | Yes. Clusters are assigned the following business day. |
| Assisted Living Facilities |  |  |
| Adult Day Health | • ≥2 confirmed cases among HCP\(^a\) with epi-linkage or a shared exposure within the facility, or  
• ≥2 confirmed cases among patients with a shared exposure within the facility (i.e. same unit/department, cared for by the same HCP\(^a\)) | Yes (with the exception of other outpatient medical facilities). Clusters are assigned the following business day. |
| Adult Day Health | • ≥2 confirmed cases among HCP\(^a\) with epi-linkage or a shared exposure within the facility, or  
• ≥2 confirmed cases among patients with a shared exposure within the facility (i.e. same unit/department, cared for by the same HCP\(^a\)) | Yes. Clusters are the following business day. |
| Ambulatory Surgical Centers |  |  |
| Dialysis centers |  |  |
| Other outpatient medical offices |  |  |
| Hospitals | • ≥2 confirmed cases among HCP\(^a\) with epi-linkage or a shared exposure within the facility, or ≥2 confirmed cases among patients 7 or more days after admission, for a non-COVID condition, with shared exposure (i.e. same unit, cared for by the same HCP\(^a\)) | Yes. Clusters are the following business day. |
| Long Term Acute Care |  |  |
| Neonatal units |  |  |
| Other inpatient healthcare facilities |  |  |
| Correctional facilities | • One confirmed case in an employee or inmate/client who had close contact to others at the facility while infectious | Yes. Clusters are assigned the following business day. |
| Shelters |  |  |
| Inpatient behavioral health (including other DMH/DDS facilities)\(^c\) |  |  |
| Daycares | • One confirmed case in an employee or attendee who was at the facility during their infectious period | Generally no, unless deemed warranted using criteria below (or LBOH is unable to lead investigation), in which case email Childcare.Covid19@mass.gov with the MAVEN ID number and a very brief summary indicating the cluster situation. |
| All other facility-based clusters, including: Schools | • ≥2 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 | Generally no, unless deemed warranted using criteria below, in which case email Childcare.Covid19@mass.gov with the MAVEN ID number and a very brief summary indicating the cluster situation. |
| Colleges |  |  |
| Businesses |  |  |
| All social or event-based clusters |  |  |

\(^a\) CDC Definition of Healthcare Personnel (HCP): HCP include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, feeding assistants, students and trainees, contractual HCP not employed by the healthcare facility, and persons not directly involved in patient care but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel). For this guidance, HCP does not include clinical laboratory personnel.

\(^b\) Facility acquired: The resident’s symptom onset, or date of positive lab if asymptomatic, was 14 or more days after admission to the LTCF. This would include residents diagnosed at an inpatient facility (i.e. acute care hospital) after transfer from a LTCF.

\(^c\) Inpatient behavioral health facilities licensed by HCQ, DDS, and DMH should be assigned. Others should be reviewed and assigned if warranted.
Clusters should meet the criteria above in order to be created. Clusters of cases that do not meet the criteria should otherwise be investigated using individual Disease Events for the index case and linking their contacts directly (person to person).

- For most cluster settings:
  - ≥2 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
- Only cases that have the shared common exposure should be linked to the cluster event
  - Secondary transmission among household members, workplaces, etc. should not be linked to the cluster event but should be linked to relevant individual disease event(s)
  - If a cluster-linked case ends up leading to a cluster in a workplace or other setting, a new cluster event should be created to link cases tied to the workplace
- A single case can be linked to more than one cluster event, if warranted

A note about clusters where the exposure took place outside of Massachusetts: If a cluster is identified in which the shared exposure setting is outside of Massachusetts, a cluster event should be created if it includes two or more confirmed Massachusetts residents. Indicate in the Exposure Setting Name in the Standard QP the city and state/country where the exposure took place in addition to the exposure name (ex: “Chocolate Factory (Salem, NH)”). When creating the cluster event, please use the naming convention: OOS_FACILITY NAME_TOWN/STATE. (OOS=Out of State)

Searching for Existing Cluster Events in MAVEN

Confirm a Cluster Event does not already exist in MAVEN prior to creating a new Event
Many cluster events already exist in MAVEN, and users should conduct a thorough search in MAVEN for previous Cluster Events prior to creating a new Cluster. LBOHs and MDPH staff frequently create and update cluster events, so it is imperative to not create duplicates.
Searching for Clusters in MAVEN

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”

3) The “Name” field searches on the cluster name that was entered 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.
Naming COVID cluster events in MAVEN

It is recommended that the following naming conventions are used when creating cluster events across all disease types in MAVEN. This updated, standard nomenclature will allow for easier searching of MAVEN cluster events.

The outlined naming conventions should be completed in the “Name” field after selecting “Create Cluster/Outbreak/Aggregate Event” from the MAVEN Dashboard.

1) Naming Convention for Facility-based Clusters

FACILITYTYPE_FACILITYNAME_TOWN

Examples:

- DAYC_HAPPYVILLAGE_SPRINGFIELD
- LTCF_CAREONE_NEWTON
- OTHR_BOSTONCALLING_BOSTON

<table>
<thead>
<tr>
<th>Standard Abbreviations for Facility Types</th>
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<tbody>
<tr>
<td>ALF</td>
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<tr>
<td>BUS</td>
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<td>CORR</td>
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<tr>
<td>DAYC</td>
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<td>GH</td>
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<td>HC_OTHR</td>
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<td>HOMELESS</td>
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<td>SCHLU</td>
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<td>OTHR</td>
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<td>OOS</td>
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**See “Special Designations” for further guidance on the naming of COVID clusters for colleges/universities and boarding schools**
Special Designations
The following naming conventions should be used for COVID clusters in colleges/universities and boarding schools:

- Umbrella Cluster: SCHLU_[SCHOOLNAME]_[TOWN]
- Epi Cluster: SCHL_[SCHOOLNAME]_[EXPOSURESETTING]_[TOWN]
  Examples: SCHL_UMASS-AMHERST_105MAINPARTY_AMHERST
  SCHL_BOSTONUNIV_CLUBBASEBALL_BOSTON

Out of State (OOS) Exposure Clusters: When creating the cluster event, please use the naming convention: OOS_FACILITY_NAME_TOWN/STATE. (OOS=Out of State)
- Indicate in the Exposure Setting Name in the Standard QP the city and state/country where the exposure took place in addition to the exposure name (ex: “Chocolate Factory (Salem, NH)”)

Hockey Clusters: When creating a cluster for an ice hockey team, please use the naming convention: OTHR_Organization_Division_TeamName.
- For example: OTHR_BOSTONADVANTAGE_U18_BRUINS
- See Guidance for Hockey Clusters below for more information
Question Packages & Required Variables for COVID Cluster Events in MAVEN

Admin Question Package: The Admin Question Package in a Cluster Event is where MDPH and LBOH Programs will acknowledge a new Cluster Event and where the reporting source should be noted.

Required Fields when Creating a Cluster Event: Administrative Question Package

- **Reporting Source**
  - Document that CTC investigators are reporting the cluster
  - If a LBOH creates a cluster event and CTC investigators are also involved (linking cases, adding notes), can “Add New” to document CTC involvement

Respiratory/ILI Question Package: The Respiratory/ILI Question Package does not apply to COVID-19 cluster events and should not be completed at this time.

Standard Question Package: The standard Question Package contains the key contact information on the part of investigating agencies (MDPH, LBOH, Institute of Higher Ed, CTC, etc.) as well as cluster
facility-specific information and contact information. It is very important to complete this question package accurately and completely as this is where read/write viewing access is granted to different LBOHs and where facility-specific variables are collected for analysis and reporting.

- **Required variables at time of cluster creation:** exposure setting name, exposure setting type, investigation status (“Open”), and affected town(s). For higher education, complete the “Education Institution” block in addition to the exposure setting name block.
- These need to be completed at the time of cluster creation even if the LBOH/Reporter indicates they will fill them in later. These are essential to daily data analyses and reporting, as well as to ensure associated LBOHs and Higher Ed facilities can see event.

### Required Fields when Creating a Cluster Event: Standard Question Package

- **Investigation Status**
  - When creating a cluster event, this should be answered as “Open”
  - This needs to be completed in order for a LBOH cluster report to display the cluster event

- **Non-MDPH Contact**
  - Document the name and phone number of EIU investigator
  - This needs to be completed so that MDPH and LBOH staff can identify a point person for questions and clarifications and to discuss follow-up activities.
Required Fields when Creating a Cluster Event: Standard Question Package

**Exposure Setting Name**
- Enter facility name or description of shared exposure among cluster-associated cases
- Avoid putting personally identifying information (family name or a private address)
- If exposure happened out of state, note that in Exposure Setting Name
  - There needs to be ≥2 confirmed MA residents with a shared exposure that took place out of state.

**Exposure Setting Type**
- Try to select options in the drop-down menu, if possible
- “Household” should not be used, as cases from the same household do not meet the definition of a cluster. Social gatherings, parties, etc. that take place at an individual’s residence should be captured as “Other.”

---

**Exposure Setting Name**

**Workplaces:** Further define workplaces, if possible, by including in the Exposure Setting Name the type of workplace setting: Office, Retail, Industrial, Manufacturing, or Construction

**Sports:**
- If a team: Include league (if applicable), name of sport, name of team
- If a sporting event (game, tournament): include name of league (if applicable), name of event, name of sport
- MAKE SURE NAME OF SPORT is included in name.
Exposure Setting Type

- If possible, complete Exposure Setting Type using the available options. For example, rather than selecting “Other” to document the type of workplace a cluster took place (i.e., car wash, construction company), select “Work”.

- Please further define workplaces, if possible, by including in the Exposure Setting Name the type of workplace setting: Office, Retail, Industrial, Manufacturing, or Construction.

- “Household” should not be used, as cases from the same household do not meet the definition of a cluster. Social gatherings, parties, etc. that take place at an individual’s residence should be captured as “Other.”
Required Fields when Creating a Cluster Event:
Standard Question Package

• **Affected town(s)**
  - This needs to be completed in order for LBOH users to see the cluster event
  
  **Add New:**
  - Add new towns for each new individual linked event associated with a new town.
  - This is how Cluster Events are “shared” with different LBOHs.

**Affected Town(s)**

- The Affected Towns variable grants viewing access to a LBOH for any jurisdictions selected (based upon Official City). This variable should first and foremost include the affected town of the cluster facility or event location. A LBOH should also be included in this list if they have a resident (Case or Contact) that is linked to the cluster event. (So if 5 different towns have linked events from their residents, all 5 towns should be added to the Affected town(s).)
  - A LBOH will only have access to the Cluster Event and cases and contacts in their jurisdiction (unless additional events are shared).

**Notes Field**

**Notes:** Enter a summary of information known at time of cluster creation, including who reported it/how it was identified. When new cases are identified and linked, status updates should be added to this field. Notes will appear in chronological order – most recent on top. The notes field should include summary updates, and also case management actions taken by CTC or at the local level. Anyone viewing the event should be able to read the notes field to understand a summary of the cluster activity and follow-up investigations.
Managing Linked Cases

Linked events should include any known cases with shared exposure related to the cluster facility or event. Linked events should include first generation cases associated with the shared exposure, and not second generation cases that occur due to future exposure from a subsequent case. Contact events can be linked as well if they share the same cluster exposure, however individual contacts should also be linked directly to their index case.

Example: If a worksite training occurred that 10 employees attended, and 5 employees tested positive the following week.

Yes, link the 5 confirmed cases to the Cluster Event.
No, do not link the household contacts of the confirmed employees, even if those family members test positive and one of the employees is the source. These household contacts did not attend the workplace training (the shared exposure among cases of the cluster event) so should be linked to their index case directly.

How to Link Events:

A detailed Tip Sheet is Located on MAVEN Help here:


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.
Data Completion within Individual Linked Events (Cases and Contacts) is Required
  o For any clusters identified by CTC or a LBOH, completion of variables in individual linked events that tie them back to the cluster (ex: employer information in the Demo QP, facility association in the Risk QP, education institution information, etc.) is required.
  o Utilize the Cluster/Outbreak Linelist Report to review linked events for data completion: This report can be run for a specific cluster and will create a line list with each of the individual events linked to that specific cluster. Great way to get a snapshot summary of data completeness for each linked event. Use an earlier start date like 1/1/2020 to make sure all events are included in the report.

Tracking Individual Events and Clusters Across the CRM & in MAVEN
All laboratory tests for COVID-19 must be reported to MDPH and the MAVEN Surveillance System. Therefore, any individuals who have received laboratory testing for COVID-19 should have a Novel Coronavirus MAVEN Event which tracks each lab result received, even if the reported labs have all been negative so far.

All individual COVID-19 events in MAVEN must have an associated Case Classification Status equal to one of the following: CONFIRMED, PROBABLE, SUSPECT, REVOKED, UNCLASSIFIED, or CONTACT. Detailed definitions for each of these Case Classification Statuses can be obtained from the COVID-19 Case Classification Manual.

The Case Classification Manual gives us nationally recognized definitions for classifying cases and ensures confirmed cases in Massachusetts are comparable to confirmed cases in Mississippi. The manual can be accessed here: http://www.maventrainingsite.com/maven-help/toc.html
Case Classification Manual Folder will have the updated Case Definitions and a list of different labs and how they will look in the MAVEN Lab Tab. This is an Excellent Resource.

**Unclassified Events:** Events created when negative, invalid, equivocal, inconclusive, or unsatisfactory laboratory results are received on an individual who had no existing COVID19 event in MAVEN.

**Contact Events:** Events created for individuals exposed to someone with COVID19. Status should remain as “contact” until supportive, presumptive or confirmatory test results are received.

While the identification of new clusters may occur through case investigation interviews and contact tracing in the CRM, cluster event creation and the linking of associated individual events should occur in MAVEN.

**Contacts that Subsequently Test Positive – How to Address in MAVEN**

Occasionally, contacts identified and followed in MAVEN or the CRM may subsequently test positive for COVID-19, becoming Confirmed or Probable cases themselves. Because EIU staff now have the ability to search for new or existing COVID-19 events in MAVEN, the following steps should be taken to reduce duplication of events across the two systems.

**The Contact Event Exists in MAVEN already:**

If a Contact Event is created in MAVEN and sent to the CRM for follow-up, during which time the Contact self-reports to CTC staff that they have tested positive, the following should occur:

1. **Search for the exiting MAVEN event.**
   a. EIU staff can review the MAVEN Contact Event to confirm if the positive lab has been reported, and update any MAVEN notes accordingly.
   b. **If the positive lab has been reported and received by ISIS,** the Contact Event Classification Status should be updated by MDPH accordingly within the day.
      i. If the Event Classification Status does not eventually update from CONTACT, email isishelp@mass.gov with MAVEN ID# and a request for the update.
      ii. If the positive lab is in a different MAVEN event, email isishelp@mass.gov with both MAVEN IDs of the contact and confirmed/probable/suspect events for deduplication.
      iii. EIU can link the existing MAVEN event to the applicable Cluster Event, even if the Case Classification Status update is pending.
   c. **If the positive lab has NOT yet been reported and received by ISIS,** the Contact Event should remain classified as a Contact.
      i. EIU should update the MAVEN event notes that this Contact has reported a positive result and that confirmation is pending.
         1. Positive labs will append to the Contact Event and the Case Classification Status will be updated automatically when the lab report is received by ISIS.
2. Again, if the labs do not append but create a new event, email isishelp@mass.gov with all MAVEN IDs to be deduplicated.
   ii. EIU should link the existing MAVEN Contact Event to the applicable Cluster Event, even if the Case Classification Status update is pending.

**The Contact Event Was Created in the CRM and May Not Exist in MAVEN:**
If a Contact Event is created through an Index Case Interview in the CRM and did not originate through MAVEN (there is no associated MAVEN ID reported in the CRM), and the CRM Contact Event subsequently self-reports to CTC staff that they have tested positive, the following should occur:

1. **Search for an existing MAVEN event.** EIU staff should search in MAVEN to see if the Contact has an existing MAVEN event (An existing COVID MAVEN event could exit with any status, and could be a Contact Event from a previous exposure, or a Confirmed or Probable event from newly reported positive result, or as an existing Unclassified Event stemming from a previous negative lab report, etc.). Anyone with a previous lab result should have an existing MAVEN event.
   a. **YES, an existing COVID-19 event is located in MAVEN**
      i. EIU should add the MAVEN ID# to the CRM event to ensure the data matches when the CRM event comes back into MAVEN.
      ii. **In MAVEN, if the positive lab has already been reported and received by ISIS,** the Case Classification status will likely be Confirmed or Probable.
          1. EIU should link the confirmed or probable event to the applicable Cluster Event and Index Case (if not linked), even if the Case Classification Status update is pending.
      iii. **In MAVEN, if the positive lab has not yet been reported and received by ISIS,** the located event will likely have an Unclassified Status due to a previously reported negative test.
          1. If the positive lab has NOT yet been reported and received by ISIS, but an unclassified event is identified for the same person, the UNCLASSIFIED event should be changed to a Contact Event.
             a. Email isishelp@mass.gov with the MAVEN ID# and a request to reclassify the UNCLASSIFIED event as a CONTACT event.
             b. EIU should update the notes that this Contact has reported a positive result and that confirmation is pending.
             c. EIU should link the Event to the applicable Cluster Event, even if the Case Classification Status update is pending.
   b. **NO, an existing COVID-19 MAVEN event is NOT located in MAVEN (unclassified or otherwise)**
      i. EIU should CREATE a CONTACT EVENT in MAVEN for the self-reported positive.
          1. Positive labs will append to the Contact Event and the Case Classification Status will be updated automatically when the lab report is received by ISIS.
      ii. EIU should add the MAVEN ID# to the CRM event to ensure the data matches when the CRM event comes back into MAVEN.
iii. **EIU should link the new MAVEN event** to the applicable index case and the applicable Cluster Event, even if the Case Classification Status update is pending.

**Notify Associated LBOHs as Applicable. Share Events with LBOHs as Applicable.**

Any cluster created in a town requires notification to the relevant LBOH.

- All required variables and updated notes should be completed.
- The Affected Town(s) variable must be completed to allow a LBOH viewing access to the cluster.
- SHARE individual events with relevant LBOHs as well, as appropriate.
  - For individual MAVEN cases, only the LBOH of the case’s Official City will be able to access the event. It will need to be shared if the Cluster took place or is located in another town. For example, if a worksite is in Town A, but the confirmed case lives in Town B, the following must be completed:
    - Add Affected Town(s) Town A & Town B to the Cluster Event Standard Question Package. This ensures both LBOH A and LBOH B can access the Cluster Event.
    - Share Case B’s individual MAVEN event with Town A. This ensures the LBOH in Town A (where the cluster is) can see the case’s event even though the case lives in another town.
- **Notify associated LBOHs**, as needed
  - Use MAVEN Communication Events for cities and towns to call or email LBOHs with the MAVEN ID of the cluster event (it does not flow into any LBOH workflows).

**Notify MDPH for Newsworthy or High Priority Situations**

MDPH will identify new clusters daily for reporting purposes through data cleaning and analysis, however newsworthy or emergent situations should be reported to MDPH immediately upon cluster creation if a cluster is identified that meets any of the criteria below.

- Clusters that should be forwarded for evaluation include the following:
  - Complicated cross-jurisdictional events, in-state or out-of-state.
  - Evidence of transmission in the workplace and a large number of positives;
  - Media or elected official involvement (use judgement);
  - Large-scale testing or inappropriate testing is taking place;
  - Situations requiring significant control recommendations;
  - Possible unsafe food-handling practices in food processing facilities or warehouses due to staff absenteeism; or
Email Childcare.Covid19@mass.gov with the MAVEN ID number and a very brief summary indicating the cluster situation.

Closing Clusters

- A cluster investigation is closed once:
  - 28 days have passed since the cluster event was created in MAVEN, and
  - 28 days have passed since the last positive lab among cluster-linked cases

- Clusters are closed on a weekly basis by the Epi Program
  - An analysis is done to identify clusters that meet the definition for closure

- Clusters are documented as being closed by:
  - Completing the Investigation Status in the Standard Question Package
  - Closing out the cluster event (disables notes and fields in question packages)

- If a cluster is closed & new cases have been identified with that setting, a new cluster should be created (if cluster criteria are met)

Closing Cluster Events

With the exception of clusters in LTCFs, ALFs, and correctional facilities, all other cluster types will be closed 28 days (2 incubation periods) from the date of the last lab of the last linked confirmed case.

**MDPH will perform this function on a weekly basis when analyzing cluster data. CTC staff should not close clusters.**

<table>
<thead>
<tr>
<th>COVID Cluster Closure Criteria</th>
<th>Criteria to be closed</th>
<th>Date closed</th>
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</thead>
<tbody>
<tr>
<td>≥1 confirmed cases linked</td>
<td>&gt;28d since cluster creation, AND 28d from last PCR+ specimen</td>
<td></td>
</tr>
<tr>
<td>0 confirmed cases linked</td>
<td>&gt;28d since cluster creation</td>
<td>28d from cluster create date</td>
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</tbody>
</table>
*Some clusters have been created more than 28 days after the last PCR+ of a linked confirmed case. A 28 day grace period will be given to ensure LBOHs & CTC have been able to link all appropriate cases before closing.

In the event that there are new cases associated with a facility that already has a closed cluster event in MAVEN, those cases should not be linked to the closed (old) cluster. Rather, a new cluster event should be created if the situation warrants cluster creation.

With the exception of some institutions of higher education, clusters primarily fall to the responsibility to the LBOH to investigate. If authorized, the CTC may remain involved in an outbreak investigation based on the needs of a LBOH.

Special Considerations for Specific Cluster Types

Clusters in Institutions of Higher Education
While Higher Ed CTC contact tracers are on MAVEN, they are not creating cluster events. CTC higher ed staff should work with Cluster trained staff at the CTC EIU to create relevant clusters in institutions of higher education.

The receiving EIU staff should create the cluster event, following guidance above, and respond to the CTC contact with the MAVEN ID. The EIU staff may need to identify and share cases with the Higher Ed user as applicable. CTC staff will be responsible for linking all associated cases.

Special Considerations for Higher Education Clusters
Case investigation and contact tracing for higher ed associated cases may be conducted by the LBOH, CTC, or representatives from the higher ed institution itself, depending what model the institution and LBOH have chosen for that school. All case investigation will be done in MAVEN. Jurisdiction for a case will be assigned based on city of residence, with access also granted to appropriate users based on “Education Institution” variable (in Risk question package) which can be auto-populated in MAVEN based on reporting lab (if case was tested through school health services).

Every school will have an umbrella cluster MAVEN event, which will be used to track epi clusters at the school (clusters that meet cluster definition, such as clusters associated with school teams or parties). Individual cases should not be linked to umbrella clusters. (Total number of cases at given school can be tracked using case-level variables.) When creating an epi cluster, please link the cluster event to the appropriate umbrella cluster, as well as to the relevant cases. Complete the Education Institution variable and associated child questions in the Standard Questions question package in addition to the other variables.

Higher Ed Resources:
Linelist of MAVEN Umbrella Clusters for Colleges, Universities, and Boarding Schools can be found on the MAVEN Training Site in the COVID-19 Materials/Training Higher Education Folder http://www.maventrainingsite.com/maven-help/toc.html

Guidance for Daycare/Childcare Facility Clusters
Licensed Childcare providers are required to report via a REDCap survey form for every confirmed case in a Daycare Staff, Student, or household member of a student. MDPH Epis receive these reports daily and respond by calling the reporting childcare provider back to provide interim guidance, then create a Daycare cluster event in MAVEN if one does not already exist and the situation warrants a cluster event (for daycare settings, a cluster event can be created if an exposure took place in a facility). See September 22, 2020 MAVEN training on Daycare Clusters and Follow-up.

Because MDPH is receiving reports from Childcare Providers, most often childcare cluster events will have been created by MDPH first and already exist in MAVEN. However, COVID-19 Case investigations of daycare-aged index cases may also reveal a childcare-related situation. Students and staff should have relevant childcare information completed in their individual event Risk Question Packages. Call the MDPH Epi Program if you have additional questions on Daycare cluster creation at 617-983-6800.

   o Document the case’s daycare association in the Risk QP of the case’s event, as well as in the Demographic QP if the case is a staff member.
   o If town of residence is different from the town of the daycare, share MAVEN event with the appropriate BOH.
     ▪ Notify the LBOH of the facility of the new daycare-associated case (and new cluster event, if one was created) so that further contract tracing can be conducted.

1) Defining a Cluster in a Daycare Setting
   In large daycare centers, it should be unlikely that an entire daycare center is impacted by a single COVID case in an attendee or staff member if the facility is adhering to current EEC regulations. Therefore, if there are more than one distinct contact tracing investigations taking place in different classrooms/programs at a center, more than one cluster event may be created to help with management of the distinct exposures.

   It is also possible for multiple classrooms to be impacted at the same time due to siblings across classrooms/programs, etc. In these cases, it is also acceptable to have a single cluster event that spans multiple classrooms/programs.

2) MDPH Notification
   If significant transmission has been identified in a childcare setting, LBOH is unable to provide follow-up, or another issue is identified, email Childcare.Covid19@mass.gov with the MAVEN ID number and a very brief summary indicating the cluster situation.
Guidance for Hockey Clusters
COVID clusters among youth hockey players and teams can become complex given they often do not reside in a single community and they live, play, workout, practice, and go to tournaments throughout Massachusetts as well as other states. LBOHs may need assistance to determine linkages to other teams, facilities, and cases outside of their jurisdiction that they may not see or have access to. When creating a cluster, remember to make the cluster accessible to other LBOHs as necessary by adding them as an “Affected Town” in the Standard QP of the cluster event.

When creating a hockey cluster, use the following naming convention:
OTHR_Organization_Division_TeamName.
For example: OTHR_BOSTONADVANTAGE_U18_BRUINS

The following information should be collected when creating a hockey cluster:
1. Team name and division name (or age group of players e.g. U16, U18, etc...)
2. Ask if this team belongs to a larger organization and/or what league(s) they participate in
3. Coaches name and phone number,
4. Does the case(s) play for multiple teams?
5. Request a roster and a team schedule from the coach
6. When did they play their last games, scrimmages, tournaments?
7. When was their last practice or team workout session? Were players greater than 6ft apart at practices?
8. Are you aware of any group events outside of the rink?

Please reach out to MDPH with any questions.

Hockey Umbrella Cluster Events

<table>
<thead>
<tr>
<th>MAVEN ID</th>
<th>Hockey Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>106912363</td>
<td>Boston Advantage Hockey Group</td>
</tr>
<tr>
<td>107189163</td>
<td>Boston Junior Terriers</td>
</tr>
<tr>
<td>107460310</td>
<td>Islanders Hockey Club</td>
</tr>
</tbody>
</table>

COVID Cluster Assignment Protocol for DPH Staff

MDPH Epidemiologists perform daily data analysis of all cluster events in MAVEN with the goal of identifying priority clusters requiring MDPH Epi assignment, as well as tracking key variables and ensuring proper cluster protocols have been met and existing clusters have not been duplicated among newly created cluster events. The cluster team performs data cleaning to ensure the following key...
variables are completed for all new COVID cluster events in MAVEN: Exposure Setting Name, Exposure Setting Type, Affected town(s).

- **High-priority cluster types identified for MDPH Epi assignment**: Long Term Care Facilities (nursing homes and rest homes), Assisted Living Facilities, Adult Day Health, Ambulatory Surgical Centers, Dialysis Centers, Hospitals, Long Term Acute Care, Neonatal Units, Other inpatient healthcare facilities, Correctional facilities, District Courts, Shelters, Inpatient behavioral health (including other DMH/DDS facilities).

### High Priority COVID Cluster Identification and Updates

If CTC Staff identifies a new cluster for any of the above high priority cluster types:
- Create a cluster only if the ‘minimum criteria’ for the corresponding facility type is met

If CTC staff identify additional cases associated with an existing cluster
- Make a note in the MAVEN cluster event
  - Do not update the cluster question packages
  - Do not link the additional cases
- Notify the assigned MDPH Epidemiologist (look in the Tasks Tab of the cluster event and/or the Standard Question Package for the MDPH Contact).
Resources and Tip Sheets

Consult MAVEN Help for a variety of tips and tool sheets, trainings, and other case investigation and follow-up resources. [http://www.maventrainingsite.com/maven-help/toc.html](http://www.maventrainingsite.com/maven-help/toc.html)

**Cluster Tips & Tools**

- **Creating a Cluster Event in MAVEN**
  - Step-by-step instructions on how to create a cluster event in MAVEN
  - NEW standard naming conventions that will help users when searching for a cluster event
  - How to search for clusters in MAVEN


- **How do I Link Two Existing Events in MAVEN?**
  - MAVEN Tip Sheet: How do I link two existing cases in MAVEN?
  - Step-by-step instructions on how to link two existing events in MAVEN