Outbreak Investigation
December 2025

1. GENERAL CONSIDERATIONS

1.1 Definitions

This document summarizes general guidelines for conducting communicable disease outbreak investigations in Oregon. “ACDP” refers to the Acute and Communicable Disease Prevention Section in the Public Health Division of the Oregon Health Authority (OHA). “Counties” refers to local public health authorities (LPHA). “Outbreak” refers, in general, to an unexpected number of similarly ill persons clustered by place and time. "OSPHL" refers to the Oregon State Public Health Laboratory.

1.2 Laboratory and Physician Reporting Requirements

All outbreaks are immediately reportable to public health. Please consult the ACDP website for *Investigative Guidelines* for specific types of outbreaks (i.e., waterborne disease; respiratory illness; acute gastroenteritis with suspected common source; health care associated infections; hepatitis A; hepatitis B; hepatitis C; norovirus; and norovirus outbreaks in specific settings [i.e., long term care facilities, hospitals, schools, and day care centers]). Please refer to the specific *Investigative Guidelines* for each of these different types of outbreaks for outbreak definitions and descriptions of how they can be investigated.

1.3 Local Health Department Responsibilities

LPHA officials (i.e., county health officers, public health administrators, or communicable disease supervisors) will direct outbreak investigations that occur solely in their jurisdictions; LPHAs are legally responsible for investigating and controlling such outbreaks (see OAR 333-019-0000). They will collect enough information to characterize the outbreak (see Section 4).

1.4 ACDP Responsibilities

ACDP has two persons assigned to assist in outbreak investigations each week (Urgent Epidemiologic Response Team [UERT]). ACDP may assume lead for

single-jurisdiction outbreak investigations when LPHA requests this assistance. See algorithm in appendix. Other examples of when ACDP should assume lead for an outbreak investigation include the following:

Multijurisdictional outbreak (e.g., multistate, multicounty) where federal or cross state coordination is required.

Outbreaks involving widely distributed contaminated commercial products

Outbreaks in state-run facilities (e.g., correctional facilities, state hospitals)

ACDP will, in general, not be able to take on investigation of gastroenteritis outbreaks in which a common or point source is not suspected, and in which the initial symptom profile suggests that norovirus is the likely cause.

1. LPHA INVESTIGATIVE ACTIVITIES

2.1 Outbreaks in Oregon Jurisdictions

Investigate outbreaks in their jurisdictions and support multi-jurisdictional investigations that involve their county. Please see Section 1.4.

Initiate an outbreak investigation and contact ACDP for an outbreak number within 24 hours of receiving the initial report.*

Please refer to Investigative Guidelines for the specific type of outbreak for guidance on specimen and data collection.

2.2 Control Measures

Implement appropriate control measures as soon as possible (e.g., contact precautions, excluding infected food handlers, closing facility, etc.). Refer to Investigative Guidelines specific to outbreak type for guidance on control measures. Document and describe control measures in the Outbreaks database (Methods tab).

2.3 Active Case Finding

As appropriate, conduct active case finding (Refer to Investigative Guidelines specific to outbreak type and consult with UERT Epi as needed).

* On evenings and weekends call 971-673-1111 and ask the answering service to page the on-call epidemiologist.

2.4 Enter and Analyze Data

At the time of the initial report, enter all available preliminary data into the ACDP "Outbreaks Database" (e.g., date of first illness onset, suspected primary mode of transmission, the exposure site, and the total known number of cases). Completion of the highlighted fields in the outbreak database as soon as possible; these data are used for reporting of gastrointestinal outbreaks to CDC.

Use the built-in case logs for gastroenteritis, respiratory, rash, or mixed symptoms when appropriate. Using the case log allows for rapid summary of descriptive data, built in epi curve and reporting features.

The LPHA will enter and analyze outbreak data when they are lead for single jurisdiction outbreaks, consulting with UERT Epi as needed (see Section 3.4).

2.5 Final Outbreak Reports

LPHA will finalize and submit the outbreak investigation report in the ACDP "Outbreaks Database" within 30 working days of the onset date of the last case (exceptions: 2 incubation periods for varicella, mumps, and pertussis outbreaks). Submission will trigger an email for review by the UERT Epi assigned to the outbreak. Submission of outbreak reports is a triennial review metric.

3. ACDP INVESTIGATIVE ACTIVITIES

3.1 Investigation

In general, ACDP (UERT Epi) will support LPHAs with single-jurisdiction outbreak investigations and lead multi-jurisdictional investigations (see Section 1.4) and algorithm in appendix.

3.2 Communication

The OHA on-call epidemiologist will assign an outbreak number within two hours of notification by LPHA and assign an OHA Epi (UERT). The UERT Epi (or their designee) will return calls or e-mail messages from LPHA regarding their assigned outbreak within twenty-four hours.

3.3 Guidance and Tools

The UERT Epi will guide and assist with collecting clinical or environmental specimens, testing coordination, and recommending appropriate control measures. When an investigation includes food product trace back, the UERT Epi will coordinate activities with LPHA and other appropriate agencies and

inform affected LPHA's of the trace back results as information becomes available.

Templates are available from ACDP that facilitate rapid questionnaire design, data entry, and analysis. The UERT Epi will provide questionnaire templates to use in a variety of settings or assist with questionnaire development on request.

3.4 Data Management and Analysis

The UERT Epi will enter and analyze outbreak data when managing an outbreak for a LPHA or when otherwise requested to do so by a LPHA that has used ACDP templates. Preliminary data analysis will be completed no later than 3 working days after data collection is finished.

3.5 Finalize Outbreak Reports

The UERT Epi has 14 working days from when the LPHA submits the outbreak record to ensure that the record is complete and accurate (coordinating with LPHA as needed); at that point, the UERT Epi will submit the completed record to be finalized by the designated OHA subject matter expert.

4. DESCRIPTIVE EPIDEMIOLOGY

4.1 Characterize the Outbreak

This is done by systematically collecting data to answer the following questions:

- Is this really an outbreak?
- Who was the population affected?
- How many people were exposed? How many people were ill?
- What is the suspected infectious agent?
- How was the agent transmitted?
- What environmental or other factors contributed to the outbreak?
- How was the infectious agent transmitted?
- When did the outbreak start and stop?

4.2 Confirmation of Outbreak Etiology

When possible, confirm the outbreak etiology by verifying laboratory reports, collecting information for symptom profile, and other data as needed. Remember that not all initial reports of outbreaks are really outbreaks. Refer to Investigative Guidelines specific to outbreak type and consult with UERT Epi as needed. Consultation with the LPHA health officer or administrator is recommended.

4.3 Steps of Outbreak Investigation

- **Develop a case definition**. Case definitions typically refer to characteristics of person, place, and time (e.g., resident of Nursing Home A with vomiting or diarrhea starting on or after 12-31-2024).
- **Conduct case finding (as appropriate).** This may entail interviewing reported cases, reviewing medical records, or contacting others who were potentially exposed (e.g., patients in an affected hospital wing, credit card receipts from restaurants, surveying exposed persons).
- **Characterize the cases.** Use standardized data collection instruments (i.e. Questionnaires or case logs). Include, at a minimum, demographics (e.g., age, sex), physical location (e.g., classroom, room number); onset date and time; signs and symptoms; illness durations; and measures of severity (i.e. medical visits, hospitalizations, deaths.
- **Assess the mode(s) of transmission.** Use an epidemic curve (i.e., cases by onset date or time) to distinguish point-source from person-to-person outbreaks and to see when the outbreak started and stopped.
- **Collect clinical specimens (as appropriate).** Refer to Investigative Guidelines specific to outbreak type and consult with UERT Epi as needed. Stool and respiratory specimen collection kits can be ordered directly from OSPHL by clicking on “Notify OSPHL” in Etiology tab of Outbreak record or calling (503-693-4100).
- **Evaluate the physical environment (as indicated).** When the setting of the outbreak is known, evaluating the site can provide important information on outbreak source and guide control measures. Depending on outbreak type, Environmental health specialists may take the lead during this component of the investigation. Consult with UERT epidemiologist for testing of environmental or food samples. These services are not available at OSPHL.

5. BASIC ANALYTIC EPIDEMIOLOGY

As appropriate, use tools (usually questionnaires) to assess between potential exposures with illness. Coordination with UERT Epi on questionnaire design, data entry and analytic methods, is recommended. Review outbreak specific guidelines for different types of outbreaks. If the LPHA uses a questionnaire design of their own, they are responsible for data analysis and reporting to the UERT epi.

7. FINAL OUTBREAK REPORTS

LPHAs are responsible for documenting investigations that occur in their jurisdictions unless other arrangements are made with UERT Epi. Attach any relevant records or files in Documentation tab of the Outbreak record.

The minimum information needed for an outbreak report is:

The date of first illness onset, number of presumptive and confirmed cases, etiology, and exposure setting. Supporting documentation. If the built-in case log is not used for the outbreak, attach electronic files of the epidemic curve and supporting documentation to the ACDP “Outbreaks Database”. Typical supporting documentation includes:

- Copy of the questionnaire (if outbreak-specific questionnaire used)
- Completed questionnaires or data files containing questionnaire data; manually completed case logs (for gastroenteritis and respiratory illness outbreaks) when data are entered in a non-ACDP database.
- OSPHL and private laboratory reports, environmental health inspection reports, outbreak notes
- Photographs

Refer to Investigative Guidelines specific to outbreak type for details on any other requirements.

Please refer to Sections 2.5 and 3.5 for guidance on timeline for submitting outbreak reports. Consult UERT Epi if an extension is needed. The proportion of outbreak reports submitted on time is an evaluation criterion for triennial county reviews.

Keep in mind, the outbreak report should never take longer than the investigation. If there wasn’t much of an investigation, there may not be much of a report. Complex or higher profile investigations might merit an additional, more detailed, formal outbreak report. There is no prescribed format for detailed outbreak reports, but the generic outline of outbreak papers published in medical journals may suffice: background, methods, results (including epi curves, symptom profiles, exposure and risk factor analyses), conclusions, and any recommendations or control measures.

Outbreak data are summarized in the Selected communicable disease annual report, and in cases where a public records request is made, an outbreak report must be published before being released.

UPDATE LOG

December 2025 Updated data that can be stored on the outbreak record in the database. Review and edit of for current processes. Updated processes for publishing of reports. (June Bancroft)

June 2017. Clarified submission of final report to be 2 incubation periods for varicella, pertussis and mumps. Updated with procedures for what agency is the lead and specified that identifiable data be excluded from the outbreak database record. Minor edits and corrections of typos and footnotes (June Bancroft)

December 2015. Placed in new template. Minor edits and correction of typos (Leslie Byster, Richard Leman, Melissa Powell)

May 2015. Added to §2.3 ("Starting the Investigation") and §4.3 ("Case Investigation") clarification that OSPHL will not test single fecal specimens. (Paul Cieslak)

January 2014. Updated *County* and *ACDP Investigation Activities* sections; put into standard IG format. (Richard Leman and Melissa Powell)

October 2012. Review and update. (Lore Lee)

April 2004. Created. (Lore Lee)

Outbreak Lead Algorithm