CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement Performance Measures

Quick Reference Fact Sheets Public Health Surveillance (SURV) and Epidemiological Investigations (EI)

CDC has contracted with John Snow, Inc., to develop and implement technical assistance and training materials for CDC's Public Health Emergency Preparedness (PHEP) Performance Measures under Reference #HCG-2008-53920

Performance Measure Quick Reference

Overview of Public Health Surveillance (SURV) and Epidemiological Investigations (EI) Performance Measures

The Public Health Surveillance (SURV) and Epidemiological Investigation (EI) **capability**:

The ability to create, maintain, support and strengthen routine surveillance and detection systems and epidemiological investigation processes, as well as to expand these systems and processes in response to incidents of public health significance.

This capability consists of the ability to perform the following **functions**:

1. Conduct Public Health Surveillance and Detection
2. Conduct Public Health and Epidemiological Investigation
3. Recommend, Monitor, and Analyze Mitigation Actions
4. Improve Public Health Surveillance and Epidemiological Investigation Systems

There are six (6) performance measures associated with Public Health Surveillance (SURV) and Epidemiological Investigation (EI) capability. The chart below demonstrates the relationship between the performance measures and the SURV and EI capability.

PHEP Capability	PHEP Function	PHEP Performance Measure(s)
Public Health Surveillance and Epidemiological Investigation	Conduct Public Health Surveillance and Detection	SURV – Disease Reporting
	Conduct Public Health and Epidemiological Investigation	EI – Outbreak Investigation Reports EI – Exposure Investigation Reports EI – Outbreak Investigation Reports with Minimal Elements EI – Exposure Investigation Reports with Minimal Elements
	Recommend, Monitor, and Analyze Mitigation Actions	SURV – Disease Control
	Improve Public Health Surveillance and Epidemiological Investigation Systems	At present there are no CDC-defined performance measures for this function.

Performance Measure Quick Reference

Overview of Public Health Surveillance (SURV) and Epidemiological Investigations Performance Measures

PHEP Performance measure	Definition	Submission Timeline	Requires data collection from a sample of local health departments
SURV – Disease Reporting	Proportion of reports of selected reportable diseases received by a public health agency within the awardee-required timeframe	Annually	Yes
SURV – Disease Control	Proportion of reports of selected reportable diseases for which initial public health control measure(s) were initiated within the appropriate timeframe	Annually	Yes
EI – Outbreak Investigation Reports	Percentage of infectious disease outbreak investigations that generate reports	Annually	Yes
EI – Outbreak Reports with Minimal Elements	Percentage of infectious disease outbreak investigation reports that contain all minimal elements	Annually	Yes
EI – Exposure Investigation Reports	Percentage of epidemiological investigations of acute environmental exposures that generate reports	Annually	No
EI – Exposure Reports with Minimal Elements	Percentage of epidemiological investigations of acute environmental exposures that contain all minimal elements	Annually	No

Performance Measure Quick Reference

SURV: Disease Reporting:

Proportion of reports of selected reportable diseases received by a public health agency within the awardee-required timeframe

Reporting Criteria

1. Reported by 50 states, DC and NYC.
2. Self-report data submitted **annually.**
3. Awardees are required to report data on case reports with CDC notification dates between MMWR Week 33 and Week 31.
4. Awardees are required to provide data on the following diseases according to the specified case classification criteria noted in parentheses. Awardees must use CDC/CSTE case definitions for these diseases.
   - Diseases associated with the following CDC Category A agents:
     - Botulism (*Clostridium botulinum*), all types *excluding* infant botulism (confirmed) .
     - Tularemia (*Francisella tularensis*) (all reports)
   - *Escherichia coli* (*E. coli*), shiga-toxin (STEC) producing (all reports) - Awardees that only require reporting of *E. coli O157:H7* (not all shiga-positive E. coli) may report on those data instead
   - Hepatitis A, Acute (confirmed)
   - Measles (confirmed and unknown)
   - Meningococcal disease (*Neisseria meningitides*) (confirmed) - Isolated from a sterile site (e.g., blood or CSF)
5. Awardees should calculate the numerator and denominator for this performance measure at the **public health system level** (i.e., to include reports first received by the awardee health department and reports first received by local health departments). Reports received by non-sampled local health departments should be excluded.
6. Awardees should ensure counts exclude duplicate cases.
7. Awardees may be asked to provide information on local health departments reporting for this measure.

Measurement Specifications

Numerator: Number of reports of selected reportable disease received by a public health agency within the awardee-required timeframe

Denominator: Number of reports of selected reportable disease received by a public health agency

Helpful Hints

- The intent of this measure is to capture the timeliness of disease report to any level of the public health system (e.g., local, state, regional, county) from reporting entities (e.g., hospital, labs, providers).
- Reporting data for this performance measure is **separate from, and requires no change to**, notifiable disease reporting to CDC's Nationally Notifiable Disease Surveillance System (NNDSS).
- It is understood that in many jurisdictions, there may be few or no cases of certain diseases.

Key Terms

Awardee-required timeframe: State-mandated timeframe either by law or regulation for healthcare providers and, in some states, laboratories, to report cases (or positive test results) of specific reportable diseases.

Case: Awardees should provide aggregate data solely on cases that meet the classification criteria for each disease described below (e.g., meningococcal disease: confirmed cases only). These criteria meet CDC's most recent Morbidity and Mortality Weekly Report (MMWR) print criteria for each disease. Due to the provisional nature of some case data and the likelihood of eventual rule-outs of some cases, it is understood that case counts may change following awardee reporting for this performance measure. Awardees are not required to reconcile this performance measure to final National Notifiable Disease Surveillance System (NNDSS) data. Provisional case counts for this performance measure are acceptable.

Case event date types: Case events mark the occurrence of specific clinical or laboratory activities or milestones that, in the context of the SURV – Disease Reporting performance measure, serve as the "start time" (measured via the "case event date") against which timeliness of reporting for cases of disease can be calculated. There are five options for case event date types. Awardees may utilize only one type of case event date for all cases of a given disease, but are free to use that same type for multiple diseases

- Date of diagnosis – lab-confirmed: Date of medical determination of a disease state following confirmation of the presence of an organism or toxin (e.g., positive blood or stool culture, antigen test, botulinum toxin test, etc.) or physiological effects (e.g., presence or increase in antibodies associated with a disease, etc.) from laboratory testing. This refers to definitive, as opposed to preliminary, laboratory results.

SURV: Disease Reporting

Reported Data Elements

1. Do the awardee-required reporting timeframes differ for **providers** and **laboratories** for any of the selected diseases? [Y/N] If no, please skip to question 4.

2. For each of the selected diseases, please indicate the awardee-required reporting timeframe for providers [select one] : Immediately, 24 hours, 48 hours, 72 hours, 7 days, or Other – specify

3. For each of the selected diseases, please indicate the awardee-required reporting timeframe for **laboratories** [select one] – Please skip to Question 5. Immediately, 24 hours, 48 hours, 72 hours, 7 days, or Other – specify

4. For each of the selected diseases, please indicate the awardee-required reporting timeframe [select one]: Immediately, 24 hours, 48 hours, 72 hours, 7 days; or Other – specify

5. Case event date type selected for each disease [select one]
   - Date of diagnosis – lab-confirmed
   - Date of diagnosis – presumptive/clinical
   - Date of laboratory report
   - Date of laboratory result
   - Date of specimen collection

6. Total number of disease reports received within the awardee-required reporting timeframe (**numerator**) - Please aggregate reports received by awardee **and** local health department sample – do not include reports from non-sampled jurisdictions
   - By disease

7. Total number of disease reports received (**denominator**) - Please aggregate reports received by awardee **and** local health department sample – do **not** include reports from non-sampled jurisdictions
   - By disease

8. Does the awardee health department have in place processes, procedures, etc., for periodic (e.g., annual) review of data related to timeliness of disease reporting for the purposes of program improvement? [**Y/N**] – If no, skip to Question 10.

9. Please describe processes, procedures, etc., the awardee health department has in place for periodic (e.g., annual) review of data related to timeliness of disease reporting for the purposes of program improvement. [text box]

10. Total number of local health departments (from the reporting sample) that has a process, procedure, etc., in place for periodic (e.g., annual) review of data related to timeliness of reporting for the purposes of program improvement.

11. Please describe the key barriers to timely reporting of select disease for this performance measure by hospitals, providers and labs [text box].

Key Terms

- Date of diagnosis – presumptive/clinical: Date of medical determination indicating suspected presence of a particular disease for which initial interventions can be initiated and/or further testing undertaken. By definition, a presumptive diagnosis has not (yet) been confirmed. Instead, this type of diagnosis may be based on empirical observations by a clinician, patient histories, establishment of epidemiological linkages, preliminary laboratory findings (e.g. Gram's stain), or special diagnostic procedures (e.g. using an EMG test on a person with suspected botulism).
- Date of laboratory report: Date that the first positive laboratory test result is either posted or communicated to an appropriate clinical or organizational entity (i.e., a provider, not the public health agency). The laboratory report date can refer to communication of preliminary (if applicable or necessary) or confirmed lab results.
- Date of laboratory result: Date that a laboratory test, assay or other procedure is first determined to be either positive for the existence of an organism or otherwise significantly indicative of a disease state relevant to this performance measure.
- Date of specimen collection: Date that a clinical specimen is collected for analysis and/or testing. Specimen collection generally refers to the collection of blood, feces, or cerebrospinal fluid.

First report to a public health agency: Awardees should use the time that a public health agency was first alerted to a case of selected disease whether by phone, fax, online surveillance system, case report form, or another means of notification. Note: for cases in which both a provider and a lab report the same case of disease, awardees should count the first instance of reporting the case for the purposes of this performance measure.

Performance Measure Quick Reference

SURV: Disease Control

Proportion of reports of selected reportable diseases for which initial public health control measure(s) were initiated within the appropriate timeframe

Reporting Criteria

1. Reported by 50 states, DC and NYC.
2. Self-report data submitted **annually.**
3. Awardees are required to report data on case reports with CDC notification dates between MMWR Week 33 and Week 31.
4. Awardees are required to provide data on the following diseases according to the specified case classification criteria noted in parentheses. Awardees must use CDC/CSTE case definitions for these diseases.
   - Diseases associated with the following CDC Category A agents:
     - Botulism (*Clostridium botulinum*), all types *excluding* infant botulism (confirmed) .
     - Tularemia (*Francisella tularensis*) (all reports)
   - *Escherichia coli* (*E. coli*), shiga-toxin (STEC) producing (all reports) - Awardees that only require reporting of E. coli O157:H7 (not all shiga-positive E. coli) may report on those data instead
   - Hepatitis A, Acute (confirmed)
   - Measles (confirmed and unknown)
   - Meningococcal disease (*Neisseria meningitides*) (confirmed) - Isolated from a sterile site (e.g., blood or CSF)
5. Awardees should calculate the numerator and denominator for this performance measure:
   - By disease
6. Awardees should ensure counts exclude duplicate cases.
7. Awardees may be asked to provide information on local health departments reporting for this measure.

Measurement Specifications

Numerator: Number of reports of selected reportable diseases for which public health control measure(s) were initiated within an appropriate timeframe

Denominator: Number of reports of selected reportable diseases received by a public health agency

Helpful Hints

- This measure is meant to capture initiation of public health control measures, not completion, nor to capture the first phone call to a health care provider to discuss a case patient, unless it entails recommendations and/or education regarding specific control measures.
- If a health department documents timely initiation of either (a) an appropriate control measure, (b) a recommendation for a control measure, (c) a decision not to initiate a control measure, or (c) inability to initiate a control measure despite an effort to do so, this will meet the intent of the measure and count toward the numerator.
- Cases reported beyond the period appropriate for control measures should *not* count towards the numerator, but must be counted as part of the denominator.
- Reporting data for this performance measure is **separate from, and requires no change to**, notifiable disease reporting to CDC's Nationally Notifiable Disease Surveillance System (NNDSS).

Key Terms

Assessing control measures timeliness: For a given case to count toward the numerator, awardees will need to compare case data with the Public Health Control Measures Table to determine whether a control measure(s) was initiated within the appropriate timeframe. Awardees should use the time that the first report of a selected disease was received by a public health agency as the start time (Note that this time should be the same as the stop time used to calculate timeliness for the Disease Reporting performance measures).

Case: Awardees should provide aggregate data solely on cases that meet the classification criteria for each disease described below (e.g., meningococcal disease: confirmed cases only). These criteria meet CDC's most recent Morbidity and Mortality Weekly Report (MMWR) print criteria for each disease. Due to the provisional nature of some case data and the likelihood of eventual rule-outs of some cases, it is understood that case counts may change following awardee reporting for this performance measure. Provisional case counts for this performance measure are acceptable.

Initiation of a control measure: Initiation of a control measure refers to the first substantive activity by public health staff to prevent or control the spread of disease. Please See Public Health Control Measures Table.

SURV: Disease Control
Reported Data Elements

1. Total number of reports for which a control measure was initiated within the appropriate timeframe (**numerator**)
- By disease
- By awardee health department
- By sample of reporting local health departments

2. Total number of disease reports received (**denominator**) - Please aggregate reports received by awardee **and** local health department sample – do **not** include reports from non-sampled jurisdictions
- By disease

3. Does the awardee health department have in place processes, procedures, etc., for periodic (e.g., annual) review of data related to timely initiation of public health control measures for the purposes of program improvement? [**Y/N**] – If no, skip to Question 5.

4. Please describe processes, procedures, etc., the awardee health department has in place for periodic (e.g., annual) review of data related to timely initiation of public health control measures for the purposes of program improvement.

5. Total number of local health departments (from the reporting sample) that has a process, procedure, etc., in place for periodic (e.g., annual) review of data related to timely initiation of public health control measures for the purposes of program improvement.

6. Please describe the key barriers faced by health departments in the timely control or mitigation of select diseases for this performance measure. [text box]

Public Health Control Measures Table

For a given case to "count" toward the numerator for the SURV – Disease Control performance measure, awardees will need to compare case data with this table below. Awardees should use the time that the first report of a selected disease (was received by a public health agency as the "start time" for this performance measure. Note that this time should be the same as the "stop time" used to calculate timeliness for the Disease Reporting performance measures.

Disease Agent	Botulism	E. coli (STEC)	Hepatitis A, Acute	Measles	Meningococcal Disease	Tularemia
Example control measures	*Identification of potentially exposed individuals*; *Identification / recovery of suspected source of infection*, as applicable	*Contact tracing*; *Education:* contacts as applicable; *Exclusions*: childcare, food handling, as applicable	*Contact tracing*; *Education*: contacts; *Immunization* (active/passive) administered or recommended to contacts, as appropriate	*Contact tracing*; *Education*: contacts; *Immunization* (active/ passive) administered or recommended for susceptible individuals; *Isolation:* confirmed cases	*Contact tracing*; *Education*: contacts; *Prophylaxis* administered or recommended for susceptible individuals	a) *Identification of potentially exposed individuals*; b) *identification of source of infection*, as applicable
Initiation timeframe	Within 24 hours of initial case identification	Within 3 days of initial case identification	Within 1 week of index case identification	Within 24 hours of initial case identification	Within 24 hours of initial case identification	a) Within 48 hours; b) within 48 hours of initial case identification

Performance Measure Quick Reference

EI: Outbreak Investigation Reports

Percentage of infectious disease outbreak investigations that generate reports

Reporting Criteria

1. Reported by all awardees.
2. Self-report data submitted **annually.**
3. Awardees are required to report summary data generated from **real** infectious disease outbreak investigations and investigation reports *only* (i.e., not drills or exercises).
4. Draft reports are acceptable for inclusion in the numerator for this measure under select circumstances, including:
    - The completion of an investigation near the end of the reporting period for this performance measure, with insufficient time to complete an investigation report
    - Completed investigations for which a draft investigation report has not yet been finalized or approved.
    - Long-term or ongoing investigations for which the timeline for completion of a final investigation report is unknown
5. Awardees should calculate the numerator and denominator for this performance measure:
    - At the awardee level **and**
    - For the sample of local health departments reporting data for this performance measure.
6. Awardees may be asked to provide information on local health departments reporting for this measure.

Measurement Specifications

Numerator: Number of infectious disease outbreak investigation reports generated

Denominator: Number of infectious disease outbreaks investigated

Key Terms

Infectious Disease Outbreak: An increase in the number of observed cases (over expected) of a given disease or illness of public health importance caused by a specific infectious agent.

Key Terms

Infectious disease outbreak reporting: Only reported outbreaks, which should include notifiable disease cases and clusters – and might include other unusual cases – should be included in this performance measure. Food-borne outbreaks should be included here. HIV, STDs, and tuberculosis are not included in this definition.

Investigation: For the purpose of these performance measures, initial investigative activity of a more preliminary or exploratory character that results in either a decision not to investigate further or referral to another agency without further significant involvement by the health department, should not count as an investigation. Referrals to other agencies that do entail further significant involvement by the health department should count as an investigation. Investigations that take place across reporting periods for this performance measure may, at the awardees discretion, be included in the denominator for the following reporting period.

Investigation report: Written or electronic documentation describing the event, methods of investigation (e.g., lab, epidemiological, and statistical methods), findings, recommendations, etc., produced as a result of an epidemiological investigation of an infectious disease outbreak or acute environmental exposure(s). Although in practice elements of a report vary, generally all should contain each of seven main "minimal elements" (see below). Further, while reports are often generated in traditional "report" style, other formats can be included for the purpose of this performance measure. Examples include memoranda, e-mails, written correspondence, templates, forms, etc.

Joint investigation: Any investigation involving the awardee and at least one other agency. Awardees can lead or support joint investigations. Examples include investigations conducted by both the awardee and CDC or investigations conducted by multiple agencies (e.g., the awardee, CDC, and a local health department).

Supporting role (in an investigation): Technical assistance or consultation provided by the awardee health department to a local health department or other agency. The term generally does not refer to routine involvement by a state public health laboratory in support of a local investigation or to aid in establishing a diagnosis (e.g., to conduct rule-out or confirmation testing). In some awardee jurisdictions, support in an investigation occurs as a function of an outbreak crossing jurisdictional lines; in others, it may be initiated upon request from a single, typically local level agency.

EI: Outbreak Investigation Reports

Reported Data Elements

Questions 1 through 7 refer to **awardee-level** investigation activities only (i.e., no data from the reporting sample of LHDs should be reported in these questions).

1. Total number of infectious disease **outbreaks** reported to the **awardee** by all sources

2. Total number of infectious disease outbreak **investigations** in which the **awardee**

   a. **led** the investigation – solely or as part of a joint investigation (denominator for *awardee* metric)

   b. **supported *any local health department investigation*** (irrespective of whether LHD is in reporting sample)

   c. **supported any other type of joint investigation** (.e., not a LHD; may include CDC or other state)

3.The total number of infectious disease outbreak investigations for which **a report was generated**

   a. in which the **awardee led** the investigation (numerator for *awardee* metric)

   b. in which the **awardee supported any *local health department* investigation** and contributed to the investigation report

   c. in which the **awardee supported** any other type of joint investigation (.e., not a LHD; may include CDC or other state) and contributed to the investigation report

4. Rank the **key** factors that accounted for the awardee health department **not** conducting investigations of infectious disease outbreaks. [Rank only those that apply]

- **Inter**agency collaboration and coordination challenges (i.e., **between** a health department and another government agency or department)
- **Intra**agency collaboration and coordination challenges (i.e., **within** the health department)
- Insufficient resources (e.g., funding, staffing, time) – If selected, please describe, to extent feasible, how this impacted awardee's ability to investigate outbreaks. (e.g., numbers or types of outbreaks not investigated, etc.)
- Major or unexpected shifts in priorities due to emergent events, changes in mission or organization, etc.
- Policy decision not to investigate certain types of infectious disease outbreaks (e.g., norovirus): please elaborate.
- Other – specify

5. Does the **awardee health department** have in place processes, procedures, etc., for review of its epidemiological investigations of infectious disease outbreaks for the purposes of program improvement? [**Y/N**]

6. What type(s) of processes, procedures, etc., does the **awardee health department** have in place for review of its epidemiological investigations of infectious disease outbreaks for the purposes of program improvement? [Check all that apply]

- Periodic or annual reviews
- Episodic reviews or hotwashes
- After-action reports
- No procedure in place
- Other – specify

The following questions refer to the **sample of local health departments reporting data for this performance measure**. Specifically, these questions concern outbreak investigations *led by a local health department* within the sample, *without any support from the awardee or federal agencies*.

7. The total number of infectious disease **outbreaks** reported by or occurring within **the sample of local health jurisdictions** reporting data for this measure

8. The total number of infectious disease outbreak **investigations** led by **local health departments in the reporting sample** (denominator for local metric)

9. The total number of infectious disease outbreak investigations for which **a report** was generated (LHD must have **led** the investigation) (numerator for local metric)

10. What were the **key** factors that accounted for not investigating infectious disease outbreaks across the **sample of local health departments** reporting data for this performance measure? [Check all that apply]

- **Inter**agency collaboration and coordination challenges (i.e., *between* a health department and another government agency or department)
- **Intra**agency collaboration and coordination challenges (i.e., *within* a health department)
- Insufficient resources (e.g., funding, staffing, time)
- Major or unexpected shifts in priorities due to emergent events, changes in mission or organization, etc.
- Policy decision not to investigate certain types of infectious disease outbreaks (e.g., norovirus)
- Other – Specify

11. Please identify the total number of local health departments (from the reporting sample) that has a process, procedure, etc., in place for review of their epidemiological investigations of infectious disease outbreaks for the purposes of program improvement. Examples can include, but are not limited to, periodic or annual reviews, hotwashes, after-action reports, etc.

Performance Measure Quick Reference

EI: Outbreak Reports with Minimal Elements

Percentage of infectious disease outbreak investigation reports that contain all minimal elements

Reporting Criteria

1. Reported by all awardees.
2. Self-report data submitted **annually.**
3. Awardees are required to report summary data generated from *real* infectious disease outbreak investigations and investigation reports *only* (i.e., not drills or exercises).
4. Draft investigation reports are acceptable for inclusion in the numerator for this measure under select circumstances, including:
    - The completion of an investigation near the end of the reporting period for this performance measure, with insufficient time to complete an investigation report
    - Completed investigations for which a draft investigation report has not yet been finalized or approved
    - Long-term or ongoing investigations for which the timeline for completion of a final investigation report is unknown
5. Awardees should calculate the numerator and denominator for this performance measure:
    - At the awardee level **and**
    - For the sample of local health departments reporting data for this performance measure.
6. Awardees may be asked to provide information on local health departments reporting for this measure.

Measurement Specifications

Numerator: Number of infectious disease outbreak investigation reports containing all minimal elements

Denominator: Number of infectious disease outbreaks reports generated

Key Terms

Minimal Elements: A core set of elements that are necessary for an investigation report to be considered complete. Generally, all sub-bullets below, or their equivalent, must be part of a report for it to be considered complete.

1. **Context / Background** – Information that helps to characterize the incident, including:
    - Population affected (e.g., estimated number of persons exposed and number of persons ill)
    - Location (e.g., setting or venue)
    - Geographical area(s) involved
    - Suspected or known etiology

2. Initiation of Investigation – Information regarding receipt of notification and initiation of the investigation, including:

- Date and time initial notification was received by the agency
- Date and time investigation was initiated by the agency

3. Investigation Methods - Epidemiological or other investigative methods employed, including:

- Any initial investigative activity (e.g., verified laboratory results)
- Data collection and analysis methods (e.g., case-finding, cohort/case-control studies, environmental, etc.)
- Tools that were relevant to the investigation (e.g., epidemic curves, attack rate tables, questionnaires)
- Case definitions (as applicable)
- Exposure assessments and classification
- Reviewing reports developed by first responders, lab testing of environmental media, reviews of environmental testing records, industrial hygiene assessments, questionnaires

4. Investigation Findings/Results - All pertinent investigation results, including:

- Epidemiological results
- Laboratory results (as applicable)
- Clinical findings (as applicable)
- Other analytic findings (as applicable)

5. Discussion and/or Conclusions – Analysis and interpretation of the investigation results, and/or any conclusions drawn as a result of performing the investigation. In certain instances, a Conclusions section without a Discussion section may be sufficient (this is left to awardees' discretion).

6. Recommendations for Controlling Disease and/or Preventing/Mitigating Exposure– Specific control measures or other interventions recommended for controlling the spread of disease or preventing future outbreaks.

7. Key investigators and/or report authors – Names and titles are critical to ensure that lines of communication with partners, clinicians and other stakeholders can be established.

EI: Outbreak Reports with Minimal Elements

Reported Data Elements

1. The total number of infectious disease outbreak investigations **for which a report was generated**
   a. in which the **awardee led** the investigation (denominator for *awardee* metric)
   b. in which the **awardee supported any local health department** investigation and contributed to writing the investigation report (irrespective of whether the LHD is in the reporting sample).
   c. in which the **awardee supported any other type of joint investigation** (i.e., not a local health department may include CDC or other state)

2. Total number of infectious disease outbreak reports containing **all minimal elements**
   a. in which the **awardee led** the investigation (numerator for *awardee* metric)
   b. in which the **awardee supported any local health department** investigation and contributed to writing the investigation report
   c. in which the **awardee supported any other type of joint investigation** (i.e., not a local health department may include CDC or other state) and contributed to writing the investigation report

3. For the reports identified above that do **not** contain all of the minimal elements, please identify the elements that were most frequently missing. [Check all that apply]
   - Context/Background
   - Initiation of Investigation
   - Investigation Methods
   - Investigation Findings/Results
   - Discussion and/or Conclusions
   - Recommendations
   - Key Investigators and/or Report Authors

3a. Briefly explain why this element(s) was most frequently missing.

The following questions refer to the **reporting sample of local health departments only**. Specifically, these questions concern **outbreak investigations led by a local health department** from the reporting sample without any support from the awardee or federal agencies.

4. The total number of infectious disease outbreak investigations **for which a report was generated** (local department must have **led** the investigation) (denominator for local metric)

5. The total number of infectious disease outbreak investigation **reports containing all minimal elements** (numerator for local metric)

6. For the reports identified above that do **not** contain all of the minimal elements, please identify the elements that were most frequently missing. [Check all that apply]
   - Context/Background
   - Initiation of Investigation
   - Investigation Methods
   - Investigation Findings/Results
   - Discussion and/or Conclusions
   - Recommendations
   - Key Investigators and/or Report Authors

6a. Briefly explain why this element(s) was most frequently missing.

Key Terms

Infectious Disease Outbreak: An increase in the number of observed cases (over expected) of a given disease or illness of public health importance caused by a specific infectious agent.

Investigation: The systematic collection and analysis of facts or data to determine the scope of an incident and the cause(s) of illness as well as identify a means of intervention or prevention strategy. In general, the term refers to systematic investigative activity *beyond* that required for routine follow-up and basic documentation. It may (but is not required to) call for the allocation of additional organizational resources such as staff, funding, etc.

Investigation Report: Written or electronic documentation describing the event, methods of investigation (e.g., lab, epi and statistical methods), findings, recommendations, etc., produced as a result of an infectious disease outbreak. Although in practice elements of a report vary, generally all should contain each of seven main "minimal elements." Further, while reports are often generated in traditional "report" style, other formats can be included for the purpose of this measure.

Joint Investigation: Any investigation involving the awardee and at least one other agency. Awardees can lead or support joint investigations. Examples include investigations conducted by both the awardee and CDC or investigations conducted by multiple agencies (e.g., the awardee, CDC and a local health department).

Supporting role: Technical assistance or consultation provided by the awardee health department to a local health department or other agency. It generally does *not* refer to routine involvement by a state public health laboratory in support of a local investigation or to aid in establishing a diagnosis (e.g., to conduct rule out or confirmation testing). In some awardee jurisdictions, support in an investigation occurs as a function of an outbreak crossing jurisdictional lines; in others, it may be initiated upon request from a single, typically local level agency.

Performance Measure Quick Reference

EI: Exposure Investigation Reports

Percentage of epidemiological investigations of acute environmental exposures that generate reports

Reporting Criteria

1. Reported by all awardees.
2. Self-report data submitted **annually.**
3. Awardees are required to report summary generated from real epidemiological investigations of acute environmental exposures and investigation reports **only** (i.e., not drills or exercises).
4. Draft reports are acceptable for inclusion in the numerator for this measure under select circumstances, including:
    - The completion of an investigation near the end of the reporting period for this performance measure, with insufficient time to complete an investigation report
    - Completed investigations for which a draft investigation report has not yet been finalized or approved
    - Long-term or ongoing investigations for which the timeline for completion of a final investigation report is unknown
5. Awardees should calculate the numerator and denominator for this performance measure at the **awardee level only**.
    - Submission of local health department data (individual or aggregate) is **not** required for this performance measure.
6. Awardees that do **not** conduct epidemiological investigations of acute environmental exposures of public health significance are expected to have access to information, from other jurisdictional partners, pertaining to these investigations, and the reports generated therefrom, for the purpose of reporting for this performance measure.
7. Awardees that do **not** conduct epidemiological investigations of acute environmental exposures of public health significance are **not** required to provide information for Reported Data Elements #6 and #7.

Measurement Specifications

Numerator: Number of epidemiological investigation reports of acute environmental exposures generated

Denominator: Number of epidemiological investigations of acute environmental exposures

Key Terms

Acute Environmental Exposure: Discrete, sudden and/or generally unexpected exposure to a **non-infectious** agent that could potentially cause adverse symptoms, conditions, illness, or disease in a human population within either an immediate or relatively short timeframe. Food-borne outbreaks should not be reported in this performance measure; these should be reported in the EI-Outbreak Investigation Reports performance measure. See page 16-17.

Incident of public health significance: A discrete, sudden and/or generally unexpected real event marked by human exposure to a toxic, poisonous or otherwise harmful *non-infectious* agent for which (a) acute and immediate adverse symptoms, conditions, illness, or disease can feasibly be expected, and (b) additional exposure beyond the initial exposure case can feasibly be anticipated.

Investigation: For the purpose of these performance measures, initial investigative activity of a more preliminary or exploratory character that results in either a decision not to investigate further, or referral to another agency without further significant involvement by the health department, should not count as an investigation. Referrals to other agencies that do entail further significant involvement by the health department should count as an investigation.

Investigation Report: Written or electronic documentation describing the event, methods of investigation (e.g., lab, epi and statistical methods), findings, recommendations, etc., produced as a result of an epidemiological investigation of an infectious disease outbreak or acute environmental exposure (s). Although in practice elements of a report vary, generally all should contain each of seven main "minimal elements." Further, while reports are often generated in traditional "report" style, other formats can be included for the purpose of this performance measure.

Joint Investigation: Any investigation involving the awardee and at least one other agency. Awardees can lead or support joint investigations. Examples include investigations conducted by both the awardee and CDC or investigations conducted by multiple agencies (e.g., the awardee, CDC and a local health department).

Supporting role: Technical assistance or consultation provided by the awardee health department to a local health department or other agency. It generally does *not* refer to routine involvement by a state public health laboratory in support of a local investigation or to aid in establishing a diagnosis (e.g., to conduct rule out or confirmation testing). In some awardee jurisdictions, support in an investigation occurs as a function of an outbreak crossing jurisdictional lines; in others, it may be initiated upon request from a single, typically local level agency.

EI: Exposure Investigation Reports

Reported Data Elements

1. Is the awardee health department responsible for conducting, in either a lead or supporting role, **epidemiological investigations of acute environmental exposure incidents of public health significance**? [Yes / No] – If yes, skip to #2. If no, please answer 1a through 1e in reference to your jurisdiction before continuing to #2.

a. Which agency (or agencies) is responsible for conducting epidemiological investigations of acute environmental exposures? [text box]

b. Is the awardee health department typically notified of epidemiological investigations of acute environmental exposures conducted by that agency? [Yes / No]

c. Does the awardee health department typically receive investigation reports documenting epidemiological investigations of acute environmental exposures conducted by that agency? [Yes / No]

d. What barriers, if any, does the awardee health department face in being notified of acute environmental exposure incidents of public health significance, epidemiological investigations of these exposures, and/or receiving investigation reports from that agency?

e. What steps, if any, has the awardee health department taken to address these barriers?

2. Total number of **acute environmental exposure incidents of public health significance** that occurred in the awardees' jurisdiction.

3.Total number of **epidemiological investigations** of acute environmental exposures in which

a. the **awardee led** the investigation – solely or as part of a joint investigation (denominator)

b. the **awardee supported** another agency's investigation [Skip to #4, below]

c. **another agency** conducted the epidemiological investigation(s) of an acute environmental exposures, but reported the investigation to the awardee (for awardees with **no role** in these investigations)

4. If the awardee assumed a supporting role in the epidemiological investigation of acute environmental exposure(s), please identify the types of organizations that the awardee health department supported. [Check all that apply]

- Local health department
- State environmental health agency
- State occupational safety and health agency
- State department of natural resources
- State law enforcement agency
- Hazardous materials agency
- Other – specify [text box]

5. Total number of investigations for which **a report was generated** in which

- the **awardee led** the investigation – solely or as part of a joint investigation (numerator)
- the **awardee supported** another agency's investigation and contributed to writing the investigation report
- **another agency** conducted the epidemiological investigation(s) of an acute environmental exposures, but reported the investigation to the awardee (for awardees with **no role** in these investigations)

6. (Applies only to awardees with a lead or supporting epidemiological investigation role for acute environmental exposures) Rank the key factors that account for the awardee health department **not** conducting epidemiological investigations of acute environmental exposures (this question refers exclusively to acute environmental exposures for which it is the general policy and/or usual practice of the awardee to investigate). [Rank only those that apply]

- **Inter**agency collaboration and coordination challenges (i.e., **between** a health department and another government agency or department)
- **Intra**agency collaboration and coordination challenges (i.e., **within** the health department)
- Insufficient resources (e.g., funding, staffing, time)
- Major or unexpected shifts in priorities due to emergent events, changes in mission or organization, etc.
- Other – specify

7. What type(s) of processes, procedures, etc., does the awardee health department have in place for review of its epidemiological investigations of acute environmental exposures for the purposes of program improvement? [check all that apply]

- Periodic or annual reviews
- Episodic reviews or hotwashes
- After-action reports
- No procedure in place
- Other – specify

Performance Measure Quick Reference

EI – Exposure Reports with Minimal Elements

Percentage of epidemiological investigation reports of acute environmental exposures that contain all minimal elements

Reporting Criteria

1. Reported by all awardees.
   - **This performance measure is optional** for awardee health departments that are **not** responsible for conducting epidemiological investigations of the human health impact(s) of acute environmental exposures *of public health significance*
1. Self-report data submitted **annually.**
3. Awardees are required to report summary generated from **real** epidemiological investigations of acute environmental exposures and investigation reports **only** (i.e., not drills or exercises).
4. Draft reports are acceptable for inclusion in the numerator for this measure under select circumstances, including:
   - The completion of an investigation near the end of the reporting period for this performance measure, with insufficient time to complete an investigation report
   - Completed investigations for which a draft investigation report has not yet been finalized or approved.
   - Long-term or ongoing investigations for which the timeline for completion of a final investigation report is unknown
5. Awardees should calculate the numerator and denominator for this performance measure at the **awardee level only**.
   - Submission of local health department data (individual or aggregate) is **not** required.

Measurement Specifications

Numerator: Number of epidemiological investigation reports of acute environmental exposures containing all minimal elements

Denominator: Number of epidemiological investigation reports of acute environmental exposures generated

Key Terms

Minimal Elements: A core set of elements that are necessary for an investigation report to be considered complete. Generally, all sub-bullets below, or their equivalent, must be part of a report for it to be considered complete.

1. Context / Background – Information that helps to characterize the incident, including:
- Population affected (e.g., estimated number of persons exposed and number of persons ill)
- Location (e.g., setting or venue)
- Geographical area(s) involved
- Suspected or known etiology

2. Initiation of Investigation – Information regarding receipt of notification and initiation of the investigation, including:
- Date and time initial notification was received by the agency
- Date and time investigation was initiated by the agency

3. Investigation Methods - Epidemiological or other investigative methods employed, including:
- Any initial investigative activity (e.g., verified laboratory results)
- Data collection and analysis methods (e.g., case-finding, cohort/case-control studies, environmental, etc.)
- Tools that were relevant to the investigation (e.g., epidemic curves, attack rate tables, questionnaires)
- Case definitions (as applicable)
- Exposure assessments and classification
- Reviewing reports developed by first responders, lab testing of environmental media, reviews of environmental testing records, industrial hygiene assessments, questionnaires

4. Investigation Findings/Results - All pertinent investigation results, including:
- Epidemiological results
- Laboratory results (as applicable)
- Clinical findings (as applicable)
- Other analytic findings (as applicable)

5. Discussion and/or Conclusions – Analysis and interpretation of the investigation results, and/or any conclusions drawn as a result of performing the investigation. In certain instances, a Conclusions section without a Discussion section may be sufficient (this is left to awardees' discretion).

6. Recommendations for Controlling Disease and/or Preventing/Mitigating Exposure– Specific control measures or other interventions recommended for controlling the spread of disease or preventing future outbreaks and/or for preventing/mitigating the effects of an acute environmental exposure.

7. Key investigators and/or report authors – Names and titles are critical to ensure that lines of communication with partners, clinicians and other stakeholders can be established.

EI – Exposure Reports with Minimal Elements

Reported Data Elements

1. Is the awardee health department responsible, in either a lead or supporting role, for conducting ***epidemiological investigations* of the human health impact(s) of acute environmental exposures of public health significance**? [Yes / No] If yes, proceed to question #2. If no, all following data elements are optional.

2. The total number of epidemiological investigations of acute environmental exposures **for which a report was generated** in which

   a. the **awardee led** the investigation – solely or as part of a joint investigation (denominator)

   b. the **awardee supported** another agency's investigation

   c. **another agency** conducted the epidemiological investigation(s) of an acute environmental exposures, but reported the investigation to the awardee (for awardees with **no role** in these investigations) [optional reporting]

3. Total number of epidemiological investigation reports of acute environmental exposures **containing all minimal elements** in which

   a. the **awardee led** the investigation (numerator)

   b. the **awardee supported** another agency's investigation and contributed to writing the investigation report

   c. **another agency** conducted the epidemiological investigation(s) of an acute environmental exposures, but reported the investigation to the awardee (for awardees with *no role* in these investigations) [optional reporting]

4. For the reports identified above that do **not** contain all of the minimal elements, please identify the minimal elements that were most frequently missing. [check all that apply]

- Context/background
- Initiation of investigation
- Investigation methods
- Investigation findings/results
- Discussion and/or conclusions
- Recommendations
- Key investigators and/or report authors

4a. Briefly explain why this element(s) was most frequently missing.

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Performance Measure Quick Reference

Inclusion and Exclusion Criteria for Acute Environmental Exposures

This table outlines illustrative inclusion and exclusion criteria for determining which environmental exposures to include for the epidemiological investigation performance measures. Meeting any one criterion is sufficient for inclusion/exclusion. For incidents that are judged to meet both inclusion *and* exclusion criteria, inclusion will be at the discretion of the awardee.

Inclusion	Exclusion
Incidents that **directly impact human health immediately or with a short latency period** (< 1 week) in which the signs and **symptoms of acute toxicity** are present or anticipated. These could include respiratory (e.g., constricted airway, shortness of breath), dermatological (e.g., itching, burning, redness of the skin), gastrointestinal (e.g., nausea, vomiting), and neurologic (e.g., disorientation, seizures) effects. Incidents in which **two or more persons are ill with signs/ symptoms of acute toxicity, are exposed, or a combination of both**. Examples could include: • Organophosphate exposures • Substantial heavy metal exposure, such as children playing with mercury Any poisoning that is considered non-medicinal, unintentional or to be of unknown etiology.	Exposures, including sustained or repeated low level exposures, that result in diseases and conditions with long latencies such as: • Cancers • Disorders of organ systems, or • Long term neurological, behavioral and/or developmental disabilities. (e.g., reports of abnormal blood levels of lead).
Incidents necessitating **contact tracing**, such as for secondary exposures, or for tracking the movement or spread of toxic substances away from the incident site. Examples include: • Persons exposed to pesticides in the field having residual amounts in their clothing, leading to exposure and illness to EMS and emergency department healthcare workers. • A person with traces of mercury driving his vehicle back to his home resulting in the contamination of both vehicle and domicile.	Incidents related to occupational hazards involving only those in the workplace setting.[2] This can include incidents that occurred at a non-occupational setting (e.g. a hazardous waste spill on a public road) with either no direct impact on human health or impact only to persons directly working with the hazardous materials (e.g. workers).
Acute exposure incidents that lead to the activation of the public health agency's Department Operations Center (DOC) or the jurisdiction's Emergency Operations Center (EOC), the formation of a task force, or the assignment of personnel to another agency's DOC or EOC.	Incidents that fall under the purview or jurisdiction of another state and/or federal agency for which the public health agency has no definable role.
Incidents that are suspected or proven to be intentional, malicious or criminal. *A notable exception includes incidents involving the transport or delivery of an alleged biological agent or toxin ('white powder') which are deemed* ***non-credible*** *('hoax'). If such an incident occurs and non-credibility* ***cannot*** *be established (e.g., a false-positive preliminary test) leading to the initiation of a public health response, then such incidents should be included.*	Exposures or injuries related to light, noise or transfers of energy other than radiation.

Performance Measure Quick Reference

Inclusion and Exclusion Criteria for Acute Environmental Exposures

Inclusion	Exclusion
Any large scale or disaster incident in which public health agencies have a defined or prominent role in the response. Examples include, but are not limited to: • Conflagrations • Explosions leading to the release of hazardous or toxic substances • "Natural disasters" including but not limited to hurricanes, earthquakes, tornadoes, etc.	Ongoing "incidents" with a low level of exposure. These can include issues surrounding air quality and concerns about water quality such as taste and odor problems, presence of low levels of contaminants that can be chemical (e.g. nitrates), microbiological (e.g. coliforms), or biotoxic (e.g., decaying harmful algae), etc.
Any incident involving an acute illness or disease state that has either the significance or interest to the public health agency to initiate an investigation. The presumed cause(s) can be either identified substances known to have adverse health effects or unknown substances yet to be identified and linked to that incident.	Incidents for which an investigation is deemed neither warranted nor appropriate, or for which site visits are made only to assess a setting for regulatory violations, gaps in proper procedures, or for mitigation or educational purposes.
	Clusters of chronic diseases or exacerbated medical conditions (e.g., cancer or asthma, respectively).