CHAPTER

8

Performance Indicators for Foodborne Disease Programs

A long-standing goal of CDC and national public health professional organizations has been to build state and local capacity for detecting and preventing foodborne illness. In 1997, CDC convened an expert panel to draft a core competencies report for foodborne disease outbreaks and response, focusing on epidemiologic and laboratory capacity. The panel's report was entitled *Essential Epidemiology* and *Laboratory Components of a State Foodborne Disease Prevention and Control Program*. In 1999, as a follow-up to these activities, CDC funded the Council of State and Territorial Epidemiologists (CSTE) and the Association of Public Health Laboratories to assess states' foodborne investigation capacity with the goal of providing background data by which to determine priority areas for building food-safety program support. Subsequently, CSTE's Enteric Diseases Investigation Timelines Study (EDITS) was developed to objectively assess intervals from disease onset to reporting to CDC for the surveillance of foodborne diseases and investigation of foodborne disease outbreaks.

8.0. Introduction

Surveillance and outbreak response are major components of states' foodborne investigation capacity and are essential for preventing and controlling foodborne illness. Multiple entities—almost 3000 local health departments, more than 50 state and territorial health departments, and several federal agencies—interact in a complex system covering surveillance to detect and respond to enteric and other foodborne diseases.

The occurrence of large and multistate foodborne disease outbreaks and concerns about bioterrorism have increased the need to rapidly detect and distinguish between outbreaks of foodborne disease and possible intentional contamination. Evaluating the timeliness and effectiveness of foodborne disease surveillance is a major step toward assessing and improving U.S. capacity for foodborne disease surveillance and outbreak response.

CDC's Public Health Emergency Preparedness Goals established a general framework and a few specific performance measures relevant to foodborne disease surveillance. However, no comprehensive national performance standards, measures, or models exist for public health agencies to follow to ensure foodborne illness surveillance and outbreak detection and response systems work at maximum efficiency.

8.1. Purpose and Intended Use

CIFOR has developed measurable indicators of effective surveillance for enteric foodborne diseases and for response to outbreaks of such diseases by state and local public health officials. These indicators are intended for use by state and local public health agencies to evaluate the performance of their foodborne disease surveillance and control programs. Specific indicators and subindicators have been identified to support the overall objectives of the foodborne disease surveillance program. Metrics have been developed to standardize evaluation of the indicators.

The use of standardized performance criteria and metrics serves several functions:

- They promote a common understanding of the key elements of foodborne disease surveillance and control activities across local, state, and federal public health agencies;
- They facilitate training of food program staff in the use and interpretation of the performance criteria; and
- They allow for the aggregation of data at state, regional, or national levels to evaluate program effectiveness and to identify specific needs for improvement and additional resource investment.

The indicators are not intended as performance standards. Where specific performance standards have been established (e.g., PulseNet turnaround times, Draft Voluntary National Retail Food Regulatory Program Standards), meeting the performance standard has been adopted as a performance indicator. The development of performance standards depends on the availability of specific indicators such as these to provide a basis for program evaluation. However, defining the level of performance expected from foodborne disease surveillance and control programs exceeds the scope of these Guidelines. Likewise, the performance indicators are not intended to be used for comparing individual local or state programs. The aggregation of data at state, regional, or national levels is intended to provide a comprehensive overview of foodborne disease surveillance and control programs, rather than a system for ranking them.

8.2. Performance Indicators

This chapter contains tables organized to highlight major performance indicators by program function. The roles and responsibilities of foodborne disease surveillance and control programs vary by state according to state law. Individual agencies that wish to evaluate their programs using these indicators should select indicators and metrics that best reflect their activities, regardless of where they fall in the document's table structure.

Overall Foodborne Disease Program Objectives and Indicators

Major Performance Indicators and Metrics for Program Evaluation

Overall Foodborne Disease Program Objectives and Indicators

Table 8.1. Objectives of foodborne disease surveillance program

SHORT-TERM OBJECTIVES	INTERMEDIATE OBJECTIVES	LONG-TERM OBJECTIVES
Detect foodborne disease events of public health importance. Respond to events in a timely manner. Intervene when appropriate to prevent illness.	Determine etiology, vehicle, and contributing factors of foodborne disease outbreaks. Monitor trends to identify emerging foodborne diseases and food-safety problems. Increase knowledge of foodborne disease causes and abatement strategies.	Prevent future outbreaks. Reduce incidence of foodborne illness. Increase health of the general population.

Overall Foodborne Disease Program Objectives and Indicators

Table 8.2. Short-term objectives, indicators, subindicators, and metrics

SHORT-TERM OBJECTIVES	INDICATOR	SUBINDICATOR	METRICS
Detect foodborne disease events of public health importance.	8.2.1. Foodborne complaints investigated	PROCESS • Program maintains logs or databases for all complaint or referral reports from other sources alleging food-related illness, injury, or intentional food contamination. The final disposition for each complaint is recorded in the log or database and filed in or linked to the establishment record for retrieval purposes (Draft Voluntary National Retail Food Regulatory Program Standards, standard 5, part 1.d). • Demographic information obtained • Food history obtained OUTCOME • Disposition, action, or follow-up on complaint or referral report alleging food-related illness or injury within 24 hours • Establishment investigated, where appropriate • Outbreak detected	PROCESS • Draft Voluntary National Retail Food Regulatory Program Standard 5, part 1.d, met, yes/no • % of complaints for which complete demographic information was available • % of complaints for which food history was obtained OUTCOME • % of reports resulting in disposition, action, or follow-up within 24 hours • No. establishments investigated • No. outbreaks detected
Detect foodborne disease events of public health importance.	8.2.2. Reported cases with specified foodborne illnesses interviewed	PROCESS • Demographic information obtained • Exposure history obtained • Case onset date obtained • Date of report documented • Case report maintained in searchable database	PROCESS • % of reported cases for which complete demographic information was available • % of reported cases for which food history was obtained • % of reported cases for which onset date was available

Detect foodborne disease events of public health importance.	8.2.2. Reported cases with specified foodborne illnesses interviewed	OUTCOME • Interval from receipt of report to interview of case • Need for public health intervention identified (e.g., exclusion of workers, conduct of investigation)	• % of reported cases for which report date was available • Searchable database maintained, yes/no OUTCOME • Median no. days from receipt of report to interview of case • % of cases for which an intervention was identified or ruled out
Detect foodborne disease events of public health importance.	8.2.3. Isolates of specified foodborne pathogens submitted to PHL	PROCESS • Stool collection date obtained • Date of clinical laboratory finding obtained • Date of submission to PHL documented • Date of serotyping documented • Date of subtyping by PFGE documented • Isolate report maintained in searchable database OUTCOME • No. reported cases for which isolates submitted to PHL • No. days from clinical laboratory finding to submission of clinical specimen to PHL • No. days from receipt of clinical speciment by PHL to subtyping results • Subtype-clusters identified • For each type of agent, 90% of PFGE subtyping data results submitted to PulseNet database within 4 working days (CDC preparedness goal)	PROCESS • % of cases for which stool collection date was available • % of investigated cases for which date of clinical laboratory finding was available • % of cases for which date of sample submission to PHL was available • % of cases for which PFGE subtyping date was available • Searchable database maintained, yes/no OUTCOME • % of cases for which isolates were submitted to PHL • Median no. days from report of clinical findings to receipt of isolate at PHL • Median no. days from receipt of specimen to serotyping or subtyping results • No. subtype clusters identified • CDC preparedness goal met, yes/no

Overall Foodborne Disease Program Objectives and Indicators

Table 8.2. Short-term objectives, indicators, subindicators, and metrics
Continued

SHORT-TERM OBJECTIVES	INDICATOR	SUBINDICATOR	METRICS
Respond to events in a timely manner.	8.2.4. Foodborne outbreaks investigated	PROCESS • Cases interviewed to determine illness and exposure histories • Stool samples obtained from cases • Controls (non-ill persons) interviewed to determine exposure histories • Environmental health assessment of establishment conducted, where appropriate • Food flow documented • Food workers interviewed • Stool samples obtained from food handlers • Food or environmental samples obtained OUTCOME • No. days from onset of symptoms to initiation of outbreak investigation • No. days from collection of stool samples to confirmed culture results • No. days from collection of environmental or food samples to confirmed culture result • Foodborne disease outbreak source identified	PROCESS • % of investigations for which cases were interviewed • % of investigations for which stool samples were collected from at least 1 case • % of investigations for which controls were interviewed to determine exposure history • % of investigations in which an establishment was investigated, if appropriate • % of environmental investigations that included a food flow, interviews of food workers, collection of stool samples from food handlers, collection of food or environmental samples OUTCOME • Median no. days from onset of symptoms of first/index case to outbreak investigation • Median no. days from submission of stool samples to receipt of results • Median no. days from submission of food or environmental samples to receipt of results • % of foodborne disease outbreaks for which a source was identified

Respond to events in a timely manner.	8.2.5. Case clusters investigated	PROCESS • Cases interviewed to determine exposure histories • Controls or persons with noncluster cases interviewed to determine exposure histories OUTCOME • No. days from cluster recognition to completion of interviews of cases and controls • Cluster source identified	PROCESS • % of case clusters for which at least half the cases were interviewed to determine exposure history • % of clusters in which controls were interviewed to determine exposure history OUTCOME • Median no. days from identification of a cluster to completion of all planned interviews • % of clusters in which a source was identified
Respond to events in a timely manner.	8.2.6 Sentinel foodborne events investigated	PROCESS • Event-specific data collected	PROCESS • % of sentinel events in which cases were interviewed • % of events in which environmental samples were collected, when appropriate • % of events in which stool samples were collected, when appropriate
Intervene when appropriate to prevent illness.	8.2.7. Ill or infected food handlers identified and excluded		OUTCOME • Median no. days from initiation of investigation to implementation of intervention
	8.2.8. Deficient food-handling practice identified and corrected		OUTCOME • Median no. days from initiation of investigation to implementation of intervention
	8.2.9. Advisory issued about outbreak and implicated source		OUTCOME • Median no. days from initiation of investigation to implementation of intervention
	8.2.10. Contaminated food recalled and removed from marketplace		OUTCOME • Median no. days from initiation of investigation to implementation of intervention

Overall Foodborne Disease Program Objectives and Indicators

Table 8.2. Short-term objectives, indicators, subindicators, and metrics
Continued

SHORT-TERM OBJECTIVES	INDICATOR	SUBINDICATOR	METRICS
Respond to events in a timely manner, and intervene when appropriate to prevent illness.	8.2.11. After-action reviews of outbreak investigations conducted within a mean of 60 days after investigation ends (CDC preparedness goal)		PROCESS • CDC preparedness goal met, yes/no
	8.2.12. Staff trained on the agency's outbreak response protocol		PROCESS • % of staff likely to be involved in an outbreak investigation that have received training
	8.2.13. Contact lists of individuals or organizations key to foodborne disease outbreak investigations created and regularly updated		PROCESS • Contact list created, yes/no • Intervals between updates

Table 8.3. Intermediate objectives, indicators, subindicators, and metrics

INTERMEDIATE OBJECTIVE	INDICATOR	SUBINDICATOR	METRICS
Determine etiology, vehicle, and contributing factors of foodborne disease outbreaks.	8.3.1. Etiology of outbreak identified	PROCESS • Clinical characteristics of outbreak characterized • Stool samples collected and tested for likely agents • Food and environmental samples collected and tested for likely agents OUTCOME • Etiology of outbreak identified	PROCESS • % of outbreaks for which clinical characteristics were described • % of outbreaks for which at least 1 stool sample was tested for likely agents • % of outbreaks for which food or environmental samples were tested for likely agents OUTCOME • % of outbreaks for which etiology was identified

Determine etiology, vehicle, and contributing factors of foodborne disease outbreaks.	8.3.2. Vehicle of outbreak identified	PROCESS • Suitable epidemiologic study conducted to identify vehicle • Informational traceback conducted to subtype exposure histories • Regulatory traceback conducted to confirm production source of implicated food vehicle • Isolates from case specimens and potential vehicles subtyped OUTCOME • Vehicle of outbreak identified	PROCESS • % of outbreaks for which epidemiologic study was conducted to identify a vehicle • % of outbreaks for which informational traceback was conducted to help elucidate exposure histories • % of outbreaks for which regulatory traceback was conducted to confirm production source of implicated food vehicle • % of outbreaks for which subtyping of isolates from cases and potential vehicles was conducted OUTCOME • % of outbreaks for which vehicle was identified
Determine etiology, vehicle, and contributing factors of foodborne disease outbreaks.	8.3.3. Contributing factors identified	PROCESS • Preparation of implicated food items reviewed • Food-preparation review guided by identification of suspected agent • Possible contributing factors to the illness, injury, or intentional food contamination identified in each on-site investigation report OUTCOME • Contributing factors identified	PROCESS • % of outbreaks for which food-preparation flow was reviewed for implicated food item • % of outbreaks for which food-preparation flow was reviewed, with specific agent suspected • Draft Voluntary National Retail Food Regulatory Program Standard 5, part 2.a, met, yes/no OUTCOME • % of outbreaks for which contributing factors were identified

Overall Foodborne Disease Program Objectives and Indicators

Table 8.3. Intermediate objectives, indicators, subindicators, and metrics
Continued

INTERMEDIATE OBJECTIVE	INDICATOR	SUBINDICATOR	METRICS
Monitor trends to identify emerging foodborne diseases and food-safety problems.	PROCESS • At least annually, data in complaint log or database and illness and injury investigations reviewed to identify trends and possible contributing factors most likely to cause illness or injury. These reviews may suggest a need for further investigations and steps for illness prevention (Draft Voluntary National Retail Food Regulatory Program Standards, standard 5, part 7.a) • Routine review of cases of reported foodborne diseases for trends in emerging foodborne diseases • Routine review of outbreak investigation findings for trends		PROCESS • Draft Voluntary National Retail Food Regulatory Program Standard 5, part 7.a, met, yes/no • Analysis of foodborne disease case reports, yes/no • Analysis of outbreak reports, yes/no
Increase knowledge of foodborne disease causes and abatement strategies.	Incorporation of results of outbreak investigation summaries into food-safety training activities		• Training activities updated annually, yes/no • % of staff that receive training related to foodborne disease outbreak investigations

Table 8.4. Long-term objectives, indicators, subindicators, and metrics

LONG-TERM OBJECTIVE	INDICATOR	SUBINDICATOR	METRICS
Prevent future outbreaks.	8.4.1. Decrease in no. outbreaks attributable to previously identified sources and contributing factors		Change in no. and % of outbreaks with specific sources and contributing factors, from baseline
Reduce incidence of foodborne illness.	8.4.2. Trends in no. confirmed foodborne outbreaks	OUTCOME • No. outbreaks reported to individual state health departments • Outbreaks per million population • Outbreaks per 1000 reported cases of specified foodborne disease agents • Outbreaks in restaurants per 1000 restaurants • No. outbreaks reported to eFORS	OUTCOME • % of outbreaks reported to state health department by year and type of agent, compared over time
Reduce incidence of foodborne illness.	8.4.3. Trends in incidence of specified foodborne illnesses	OUTCOME • Statewide annual summaries of reported foodborne diseases with trend analysis • FoodNet trend analyses	
Increase health of population.	Beyond scope of project		

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.5. Local health department: overall foodborne disease surveillance and control programs*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.5.1. Foodborne complaints investigated.	Disposition of, action on, or follow-up of complaint or referral report alleging food-related illness or injury within 24 hours	% of reports resulting in disposition, action, or follow-up within 24 hours
8.5.2. Reported cases with specified foodborne illnesses interviewed.	Case report maintained in searchable database	Searchable database maintained, yes/no
	Time interval from receipt of report to case interview	Median no. days from receipt of report to interview of case
8.5.3. Isolates of specified foodborne pathogens submitted to PHL.	Reported cases for which isolates submitted to PHL	% of cases for which isolates were submitted to PHL
8.5.4. Foodborne disease outbreaks investigated.	Time from onset of symptoms to initiation of outbreak investigation	Median no. days from onset of symptoms of the first/index case to outbreak investigation
8.5.5. Appropriate control measure initiated.		Median no. days from initiation of investigation to implementation of intervention
8.5.6. Etiology of outbreak identified.	Etiology of outbreak identified	% of outbreaks for which etiology was identified
8.5.7. Vehicle of outbreak identified.	Vehicle of outbreak identified	% of outbreaks for which vehicle was identified
8.5.8. Contributing factors identified.	Contributing factors identified	% of outbreaks for which contributing factors were identified
8.5.9. Trends in no. confirmed foodborne disease outbreaks.	No. outbreaks reported to eFORS	% of outbreaks reported to state health department by year and type of agent, compared over time

* Includes functions variously assigned to communicable disease or environmental health programs, depending on local jurisdiction.

ABBREVIATIONS:
PHL = public health laboratory; eFORS = CDC's electronic Foodborne Outbreak Reporting System.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.6. Local health department: communicable disease program*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.6.1. Reported cases with specified foodborne illnesses interviewed.	Demographic information obtained	% of reported cases for which complete demographic information was available
	Exposure history obtained	% of reported cases for which exposure history was obtained
	Case onset date obtained	% of reported cases for which onset date was reported
	Date of report documented	% of reported cases for which a report date was available
	Need for public health intervention identified	% of cases for which intervention was identified or ruled out
8.6.2. Foodborne disease outbreaks investigated.	Cases interviewed to determine illness and exposure histories	% of investigations for which cases were interviewed
	Stool samples obtained from cases	% of investigations for which stool sample were collected from at least 1 case
8.6.3. Etiology of outbreak identified.	Clinical characteristics of outbreak characterized	% of outbreaks for which clinical characteristics were described
8.6.4. Vehicle of outbreak identified.	Suitable epidemiologic study conducted to identify vehicle	% of outbreaks for which an epidemiologic study was conducted to identify a vehicle
	Informational traceback conducted to subtype exposure histories	% of outbreaks for which an informational traceback was conducted to help elucidate exposure histories

* Includes functions typically assigned to communicable disease programs, not included in overall foodborne disease surveillance and control program indicators.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.7. Local Health Department: Environmental Health Program*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.7.1. Foodborne complaints investigated.	Logs or databases maintained for all complaint or referral reports from other sources alleging food-related illness, injury, or intentional food contamination. Final disposition for each complaint recorded in log or database and filed in or linked to establishment record for retrieval purposes	Draft Voluntary National Retail Food Regulatory Program Standards, standard 5, part 1.d, met, yes/no
	Demographic information obtained	% of complaints for which complete demographic information was available
	Food history obtained	% of complaints for which food history was obtained
	Outbreak detected	No. outbreaks detected
8.7.2. Foodborne disease outbreaks investigated.	Environmental health assessment of establishment conducted, where appropriate	% of outbreaks for which an establishment was investigated, if appropriate
	Food flow documented	% of environmental assessments that included a food flow
	Food workers interviewed	% of environmental assessments that included food worker interviews
8.7.3. Ill or infected food handlers identified and excluded.		Median no. days from initiation of investigation to implementation of intervention
8.7.4. Deficient food-handling practice identified and corrected.		Median no. days from initiation of investigation to implementation of intervention
8.7.5. Contributing factors identified.	Possible contributing factors to the illness, injury, or intentional food contamination identified in each on-site investigation report	Draft Voluntary National Retail Food Regulatory Program Standard 5, part 7.a, met, yes/no

* Includes functions typically assigned to environmental health programs, not included in overall foodborne disease surveillance and control program indicators.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.8. Local health department: public health laboratory*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.8.1. Isolates of specified foodborne pathogens submitted to PHL.	Stool collection date obtained	% of cases for which stool collection date was available
	Date of submission to PHL documented	% of cases for which date of submission to PHL was available
	Date of serotyping documented	% of cases for which serotype date was available
	Date of subtyping by PFGE documented	% of cases for which PFGE subtyping date was available
	Isolate report maintained in searchable database	Searchable database maintained, yes/no
	Turnaround time from submission to serotyping result determined	Median no. days from submission of specimen to serotyping results
	Turnaround time from submission to subtyping result Determined	Median no. days from submission of specimen to subtyping results
8.8.2. Foodborne disease outbreaks investigated.	Turnaround time from collection of stool samples to confirmed culture results detemined	Median no. days from submission of stool samples to receipt of results
8.8.3. Etiology of outbreak identified.	Stool samples collected and tested for likely agents	% of outbreaks for which at least 1 stool sample tested for likely agents
	Food and environmental samples collected and tested for likely agents	% of outbreaks for which environmental samples tested for likely agents

* Includes functions typically assigned to public health laboratory programs, not included in overall foodborne disease surveillance and control program indicators. Many local health departments do not perform culture, serotyping, or subtyping and should focus only on the indicators that apply to them.

ABBREVIATIONS:
PHL = public health laboratory; PFGE = pulsed-field gel electrophoresis.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.9. State health department: overall foodborne disease surveillance and control programs*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.9.1. Reported cases with specified foodborne illnesses interviewed.	Case report maintained in searchable database	Searchable database maintained, yes/no
8.9.2. Isolates of specified foodborne pathogens submitted to PHL.	Reported cases for which isolates submitted to PHL	% of cases for which isolates submitted to PHL
	Turnaround time from submission to PFGE subtyping result	Median no. days from submission of specimen to PFGE subtyping results
8.9.3. Foodborne disease outbreaks investigated.	Time from onset of symptoms to initiation of outbreak investigation	Median no. days from onset of symptoms of the first/index case to outbreak investigation
8.9.4. Case clusters investigated.	Cluster source identified	% of clusters for which source identified
8.9.5. Sentinel foodborne events investigated.	Event-specific data collected	% of sentinel events for which data collected
8.9.6. Appropriate control measures initiated.		Median no. days from initiation of investigation to implementation of intervention
8.9.7. After-action reviews of outbreak investigations conducted within a mean of 60 days after investigation ends (CDC preparedness goal).		CDC preparedness goal met, yes/no
8.9.8. Trends in no. confirmed foodborne disease outbreaks.	No. outbreaks reported to eFORS	% of outbreaks reported to state health department by year and type of agent, compared over time
8.9.9. Trends in incidence of specified foodborne illnesses.	Statewide annual summaries of reported foodborne diseases	Annual summary prepared, yes/no

* Includes functions that may be variously assigned to communicable disease or environmental health programs, depending on local or state jurisdiction.

ABBREVIATIONS:
PHL = public health laboratory; PFGE = pulsed-field gel electrophoresis; eFORS = electronic Foodborne Outbreak Reporting System; CDC = Centers for Disease Control and Prevention.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.10. State health department: communicable disease program*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.10.1. Reported cases with specified foodborne illnesses interviewed.	Cases interviewed following receipt of report.	Median no. days from receipt of report to case interview
8.10.2. Foodborne disease outbreaks investigated.	Cases interviewed to determine illness and exposure histories	% of investigations for which cases interviewed
	Stool samples obtained from cases	% of investigations for which stool samples collected from at least 1 case
	Controls interviewed to determine exposure histories	% of investigations for which controls interviewed
8.10.3. Case clusters investigated.	Cases interviewed to determine exposure histories	% of case clusters for which at least half the cases interviewed to determine exposure history
	Time from cluster recognition to completion of case and control interviews determined	Median no. days from identification of cluster to completion of all planned interviews
8.10.4. Etiology of outbreak identified.	Clinical features of outbreak characterized	% of outbreaks for which clinical characteristics described
8.10.5. Vehicle of outbreak identified.	Suitable epidemiologic study conducted to identify vehicle	% of outbreaks for which epidemiologic study conducted to identify a vehicle
	Information traceback conducted to subtype exposure histories	% of outbreaks for which information traceback conducted to help elucidate exposure histories
8.10.6. Trends in no. confirmed foodborne disease outbreaks identified.	Outbreaks per million population determined	Agent-specific outbreak rate determined

* Includes functions typically assigned to communicable disease programs, not included in overall foodborne disease surveillance and control program indicators.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.11. State Health Department: Environmental Health Program*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.11.1. Foodborne complaints investigated.	Complaints maintained in searchable database	Searchable database maintained, yes/no
8.11.2. Foodborne disease outbreaks investigated.	Environmental health assessment conducted of food establishment	% of investigations for which establishment investigated, if appropriate
8.11.3. Ill or infected food handlers identified and excluded.		Median no. days from initiation of investigation to implementation of intervention
8.11.4. Deficient food-handling practice identified and corrected.		Median no. days from initiation of investigation to implementation of intervention
8.11.5. Source of outbreak identified.	Regulatory traceback conducted to confirm production source of implicated vehicle	% of outbreaks for which regulatory traceback conducted to confirm production source of implicated food vehicle
8.11.6. Contributing factors identified.	Preparation of implicated food items reviewed	% of outbreaks for which food-preparation flow reviewed on implicated food item
	Food-preparation review guided by identification of suspected agent	% of outbreaks for which food-preparation flow reviewed, with specific agent suspected
8.11.7. Trends in no. confirmed foodborne disease outbreaks identified.	No. outbreaks in restaurants per 1000 restaurants determined	Restaurant-specific outbreak rate determined
8.11.8. Results of outbreak investigation summaries incorporated into food-safety training activities.		Training activities updated annually, yes/no
8.11.9. Future outbreaks prevented.	Decrease in no. outbreaks attributable to previously identified sources and contributing factors	Change from baseline in no. and % of outbreaks with specific sources and contributing factors

* Includes functions typically assigned to environmental health programs, not included in overall foodborne disease surveillance and control program indicators.

8.2. Performance Indicators

Major Performance Indicators and Metrics for Program Evaluation

Table 8.12. State health department: public health laboratory*

PERFORMANCE INDICATOR	SUBINDICATOR	METRIC
8.12.1. Isolates of specified foodborne pathogens submitted to PHL.	Date of submission to PHL documented	% of cases for which date of submission to PHL was available
	Date of serotyping documented	% of cases for which serotyping date was available
	Date of subtyping by PFGE documented	% of cases for which PFGE subtyping date was available
	Isolate report maintained in searchable database	Searchable database maintained, yes/no.
	Turnaround time from submission to serotyping result determined	Median no. days from submission of specimen to receipt of serotyping results
	Subtype clusters identified	No. subtype clusters identified
	For each type of agent, 90% of PFGE subtyping data results submitted to PulseNet database within 4 working days	CDC preparedness goal met, yes/no
8.12.2. Foodborne disease outbreaks investigated.	Turnaround time from collection of stool samples to confirmed culture results determined	Median no. days from submission of stool samples to receipt of culture results
8.12.3. Etiology of outbreak identified.	Stool samples tested for likely agents	% of outbreaks for which at least 1 stool sample tested for likely agents
	Food and environmental samples tested for likely agents	% of outbreaks for which environmental samples tested for likely agents

* Includes functions typically assigned to public health laboratory programs, not included in overall foodborne disease surveillance and control program indicators.

ABBREVIATIONS:
PHL = public health laboratory; PFGE = pulsed-field gel electrophoresis.

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Major Performance Indicators and Metrics for Program Evaluation

Table 8.13. Benchmark data established by Enteric Diseases Investigation Timelines Study (EDITS)

SHORT-TERM OBJECTIVE	INDICATOR	SUBINDICATOR	METRIC
Detect foodborne disease events of public health importance.	8.13.1. Reported cases with specified foodborne illnesses interviewed	PROCESS • Exposure history obtained • Case onset date obtained • Date of report documented OUTCOME • Time from receipt of report to interview of case determined	PROCESS • 49% of reported cases had some exposure history obtained • 66% of reported cases had an onset date given • 42% of reported cases had a report date OUTCOME • 0 = Median no. days from receipt of report to interview of case
Detect foodborne disease events of public health importance.	8.13.2. Isolates of specified foodborne pathogens submitted to PHL	PROCESS • Stool collection date obtained • Date of submission to PHL documented • Date of subtyping by PFGE documented OUTCOME • Reported cases for which isolates submitted to PHL determined • Turnaround time from submission to subtyping result determined	PROCESS • 82% of cases had stool collection date available • 98% of cases had a date of submission to PHL • 100% of cases had PFGE subtyping date OUTCOME • 68% of cases had isolates submitted to PHL • 3 = Median no. days from submission of specimen to receipt of subtyping results

ABBREVIATIONS:
PHL = public health laboratory; PFGE = pulsed-field gel electrophoresis. PHL = public health laboratory; PFGE = pulsed-field gel electrophoresis.