



# Alaska Division of Public Health

## *Prevention Promotion Protection*

### **Enteric Illness Investigation Policies and Procedures** Foodborne, Waterborne, and Person-to-Person Enteric Illness

This policies and procedures (P&P) document is intended to provide an overview of the investigation policies and procedures of the Infectious Disease Program, Alaska Section of Epidemiology when responding to reports of enteric illness. This P&P document is a working draft, focused more on general guiding principles; additional specific information for individual pathogens may be available elsewhere.

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### **Purpose:**

To ensure all reports of gastrointestinal (GI) illness received from laboratories, health care providers, and the public are investigated to find the possible source(s) of illness, investigate clusters or outbreaks, and reduce secondary transmission.

### **Roles:**

<b>SOE</b>	Section of Epidemiology
<b>Epi Team</b>	Epidemiology Infectious Disease Program Team
<b>NOW</b>	Epi or MOA Nurse of the Week
<b>PHN</b>	Public Health Nurse
<b>RNM</b>	Regional Nurse Manager
<b>EHO</b>	Environmental Health Officer
<b>IP</b>	Infection Preventionist (Hospital)
<b>MOA</b>	Municipality of Anchorage
<b>DEC</b>	Alaska Department of Environmental Conservation
<b>ASPHL</b>	Alaska State Public Health Laboratory – Anchorage
<b>ASVL</b>	Alaska State Virology Laboratory – Fairbanks

### **Responsibilities:**

The primary agencies/persons responsible for conducting enteric illness investigations are the Section of Epidemiology Infectious Disease team (Epi Team) and local Public Health Nurses (PHN). The Epi Team designates an Epi Nurse of the Week (NOW) each week to assign and follow on lab reports received that week.

### **Procedures:**

- I. Receiving Reports of Enteric Illness
  - Reportable pathogen-specific foodborne, waterborne, and person to person (P2P) enteric illnesses are reported by laboratories, health care providers and individuals through:
    - Electronic Laboratory Reporting (ELR) into AKSTARS database
    - Rapid Telephone Reporting (RTR) at 907-561-4234 or 800-478-1700
    - Confidential fax 907-561-4239
    - Section of Epidemiology phone 907-269-8000 or 800-478-0084 (after hours)
    - ‘How to Report a Suspected Foodborne Illness’ link  
<http://www.epi.alaska.gov/id/dod/foodwater/HowToReportSuspectedFoodborneIllness.pdf>
    - ‘How to Report a Cluster of GI Illness or Request Norovirus Testing’ link  
<http://www.epi.alaska.gov/id/dod/norovirus/NorovirusReportRequestTest.pdf>
  - Reports received automatically via ELR into AK-STARS are managed by the NOW each day.
  - Faxes are placed in ‘The Box’ and managed by the NOW.
  - Routine disease reports that are called to SOE are recorded on Confidential Infectious Disease Report Forms. The report is investigated by the Epi Team Nurse who took the call or placed in ‘The Box’ for follow up by the NOW.

- A list of enteric pathogen reports entered into AKSTARS is sent weekly from the AKSTARS database manager to the ASPHL microbiologist to reconcile isolate submission.
- A list of pathogen reports for clients living in the Municipality of Anchorage (MOA) DHHS jurisdiction is faxed each week from the AKSTARS database manager to the MOA NOW RN for reconciliation.
- A list of reportable conditions is available at <http://www.epi.alaska.gov/pubs/conditions/ConditionsReportable.pdf>
- Alaska follows the CSTE/CDC case definitions, available at: <http://wwwn.cdc.gov/nndss/conditions/search/>

## II. Distributing to Local Public Health Centers

- All laboratory reports of GI illness are faxed to the Public Health Center (PHC) in the jurisdiction of the reported case for interview.
- Faxes are sent as reports are received; not batched. If there is a suspected cluster, the NOW and Epi Team work with the local PHN and EHO to interview and further investigate.

## III. Interviewing Cases

- All cases are interviewed within one business day of receipt of report using the disease-specific questionnaire found on the Foodborne and Waterborne Disease Information webpage: <http://www.epi.alaska.gov/id/dod/foodwater/default.htm>
- The 'GI Illness' questionnaire is used if no pathogen has yet been identified.
- PHNs begin the investigation within one business day and complete within one week of receipt of report.
- PHNs will first ensure that the health care provider has informed the patient of lab results and diagnosis, prior to contacting the client.
- If unable to locate client, a clinic or hospital note is returned with lab report. Three attempts should be made through telephone calls (2) and letter (1) to client. If no response, the lab report is returned to SOE with clinic notes.
- If it appears that the case is part of a cluster or outbreak, PHNs notify the Epi Team for assignment to a team leader.

## IV. Single GI Illness Reports

- Single GI illnesses are reported to SOE by phone or email from health care providers, Department of Environmental Conservation Food Safety and Sanitation (DEC), Municipality of Anchorage Health Department (MOA), and the public.
- Single GI illness reports are investigated using the 'GI Illness' questionnaire on the Foodborne and Waterborne Disease webpage.
- Reports are collated on the GI illness complaints spreadsheet tab located in the Excel workbook available at: P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet.

- Specimens for single GI illnesses are not required or requested, unless more widespread illness is suspected.
- DEC or MOA food safety programs are notified of all GI illness complaints associated with a food or venue for follow up at their discretion.

#### V. Cluster/Outbreak Investigations

- Cluster/outbreak investigations inside of the MOA jurisdiction are led by the MOA team with assistance from SOE as requested.
- Cluster/outbreak investigations outside of the MOA jurisdiction are led by the SOE team with assistance from the local PHNs, DEC, and EHO.
- All clients reporting illness from a common source or event are interviewed using the generic questionnaire or an outbreak-specific questionnaire developed by SOE.
- ‘Go teams’ will travel to site of outbreak per direction from a SOE Medical Epidemiologist.
- GI / BOT ‘Go kit’ supplies:
  - stored in SOE
  - stocked for immediate use
  - restocked at the completion of onsite investigation
  - reviewed for completeness and expired supplies every 6 months by foodborne program coordinator
  - Supply list is found at P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet [file name “GI and BOT Go Kit”]
- Outbreaks (2 or more illnesses from a known common exposure) are recorded on the Outbreaks and Investigations spreadsheet P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet
- The Foodborne Program Manager attends and contributes to CDC-facilitated outbreak teleconferences when Alaska has associated cases.

#### VI. Collecting Stool Specimens

- Stool specimens are requested of all complaints of possible foodborne illness where two or more ill people from separate households are ill from a common exposure.
- One stool specimen per client is collected in Enteric Transport Media (ETM) for enterics testing; 2-5 bulk raw stool or vomitus specimens for norovirus testing per outbreak are collected in clean specimen cups. Kits are available through the PHCs and ASPHL.
- Collection, shipping, and supply request information can be found at the Foodborne and Waterborne Disease Information webpage:  
<http://www.epi.alaska.gov/id/dod/foodwater/default.htm>
- No single individuals stool or vomitus specimens are tested for norovirus at ASVL; single specimens may be sent by the provider to an outside lab for testing.
- Report a Cluster of GI Illness or Request Norovirus Testing:  
<http://www.epi.alaska.gov/id/dod/norovirus/NorovirusReportRequestTest.pdf>
- Specimens are shipped to ASPHL or ASVL for processing or forwarding to the ‘sister’ lab as needed.

- ‘Patient Instruction Sheet for Stool Collection’ is located on the Foodborne and Waterborne Disease Information webpage:  
<http://www.epi.alaska.gov/id/dod/foodwater/PatientInstructionsStoolCollection.pdf>

#### VII. Requesting Food Specimens

- Food suspected to have caused botulism is collected per instructions and sent to ASPHL for testing: <http://www.epi.alaska.gov/id/botulism/BotulismChecklistPHN.pdf>  
<http://www.dhss.alaska.gov/dph/Labs/Documents/LaboratoryTests.pdf>
- Food suspected to have caused Paralytic Shellfish Poisoning (PSP) is shipped to the DEC laboratory for testing [http://www.epi.alaska.gov/pubs/mmm/MMM\\_Chapter\\_PSP.pdf](http://www.epi.alaska.gov/pubs/mmm/MMM_Chapter_PSP.pdf)
- The decision to test food specimens is made in collaboration with the DEC. Food is forwarded to appropriate testing laboratories.
- Food implicated in other illnesses or outbreaks is collected at the discretion of SOE and EHOs.

#### VIII. Reviewing Completed Questionnaires

##### PATHOGEN-SPECIFIC QUESTIONNAIRES:

- All questionnaires are reviewed by the Epi Nurse for completeness, high-risk occupations, common exposures, and other linked cases indicating a possible cluster or outbreak.
- Upon receipt of client’s questionnaire or clinic note at SOE, the client’s AKSTARS record is updated to reflect:
  - completion by changing the status field to ‘completed’
  - outbreak name
  - serogroup / serotype
  - PFGE and WGS information
- Questionnaires are matched to lab reports and filed alphabetically in the Infectious Disease files in the rolly bins by the Administrative or Office Assistants.
- Individual records are retained for 2 years plus current year. Outbreak records are retained for 7 years plus current year. All records are shredded after the required retention time.

##### GI ILLNESS QUESTIONNAIRES:

- All public complaints of GI illness are interviewed by the Epi Nurse or local PHN using the GI Illness questionnaire.
- GI Illness questionnaires are placed in ‘The Box’ pending file if specimen results are anticipated.
- GI illness complaints are forwarded to MOA or DEC for venue / food inspection or follow-up.
- GI illness complaints are entered onto the spreadsheet at:  
P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet [file name “outbreak and investigations spreadsheet, GI Illness complaints tab].

- GI Illness questionnaires with no specimens are filed by year in the ‘GI Illness Reports’ file, in the Foodborne Program Coordinator’s office.

#### IX. Notifying Sanitarians/Environmental Health Officers (EHOs)

- MOA or DEC Food Safety EHOs (outside of Anchorage jurisdiction) are notified of foodborne illness complaints that involve a restaurant or food in commerce.
- Anchorage EHOs  
<http://www.muni.org/departments/health/environment/fss/Pages/default.aspx>
- Non-Anchorage EHOs <http://dec.alaska.gov/eh/fss/Food/sanstaff.htm>
- Regional ANTHC EHOs <https://www.anthc.org/cs/dehe/envhlth/ehc/cehc.cfm>
- Food or drug issues are communicated to FDA/USDA through DEC as needed.
- Designated Epi Team / DEC Food Safety and Sanitation members are FDA Commissioned Officers as appointed by FDA.
- The State Veterinarian is notified of issues associated with raw milk or local meat consumption.

#### X. Notification/Communication/Media

- Section of Epidemiology is notified of GI illness calls to Public Health Centers and DEC.
- Reports of clusters are reported to Epi, MOA/DEC, and RNM for further investigation.
- Reports of public complaints of food products or venues are forwarded to the Lead EHO in that jurisdiction:
  - MOA for Anchorage jurisdiction including communities from Girdwood to Eklutna.
  - DEC offices for all other regions of the state.
- Reports of unusual or clusters of illness are reported to local jurisdictions.
- Communication is conducted through confidential and HIPAA compliant email systems i.e., DSM or faxing records between jurisdictions. State of Alaska email is not considered secure and should not include protected health information (PHI).
- Quarterly meetings with SOE/DEC/MOA/Labs are conducted to review recent activities, collaborations, and needed improvements. SOE and DEC lead and facilitate meetings on a rotating basis.
- The Foodborne Program Coordinator is a member of the Alaska Food Safety Advisory Committee (AFSAC) and attends quarterly DEC–facilitated meetings.
- All team members from all agencies share information during an outbreak response by email.
- As appropriate, Division Emergency Preparedness staff are informed if an outbreak or incident involves large numbers of ill persons; there’s a need for additional resources or logistics assistance; or when there are other aspects of the pathogen or incident for which they should be aware. Similarly, law enforcement would be contacted if there was an indication that an intentional poisoning event occurred.
- Publications including press releases, Public Health Alerts (PHAN) and Epi *Bulletins* regarding foodborne illness are published and distributed at the discretion of the SOE team.

- Media teams are notified of outbreaks; Sit-reps for outbreaks or other situations affecting residents community-wide are developed per the Epi Team discretion.
- Confidentiality standards are adhered to with regard to naming specific venues, individuals and other PHI.

#### XI. Control Measures

- Control measures are implemented as soon as sufficient information is available to do so.
- Controlling an outbreak by removing the infected food worker or vehicle of consumption, cleaning the environment, modifying food preparation, or closing a venue are under the jurisdiction of MOA and DEC EHOs with consultation from SOE.
- Food workers may be excluded or restricted from working with symptoms including vomiting, diarrhea, jaundice, sore throat with fever, and infected wound or pustular boil per DEC Food Code 18 AAC 31.300  
<https://dec.alaska.gov/commish/regulations/pdfs/18%20AAC%2031.pdf>
- SOE may exclude ill food workers and require negative stool cultures before returning to work in some situations. Guidance is provided through the American Public Health Association *Control of Communicable Diseases Manual* per Alaska Regulations 7 AAC 27.010.
- Diseases for which there are specific control measures including follow-up client testing for high-risk occupations include:
  - Typhoid
  - Shigellosis
  - Salmonellosis
  - STEC infections

#### XII. Educating Patients

- Clients are educated about the source and transmission of enteric pathogens and control measure to prevent transmission.
- Fact sheets for the enteric pathogens are found at:  
<http://www.epi.alaska.gov/id/dod/foodwater/default.htm>

#### XIII. Pulsed Field Gel Electrophoresis (PFGE)

- PFGE is performed by Microbiologists at ASPHL on enteric pathogens including *Campylobacter*, *E. coli* O157:H7, *Listeria*, *Salmonella*, *Shigella*, and *Vibrio*.
- PFGE is completed within ~14 days of onset of illness.
- Results are compared to entries in the Alaska database for matches.
- Results are entered into the CDC PulseNet database to determine matches to multi-state and national cases involved in outbreaks. Reports are sent from ASPHL to the Foodborne Program Coordinator by email using the secure 'DSM' file sharing program.
- PFGE files are posted at P:\Infectious\TDrive\INF\_Apps\PFGE files by pathogen and date uploaded.
- PFGE information is entered into the client record in AKSTARS.

- Draft version of “Interpreting PFGE Results” is posted at P:\Infectious\TDrive\INF\_Apps\PFGE files

#### XIV. Linking Cases through PFGE Data

- All cases linked by indistinguishable PFGE patterns are reviewed for common exposures.
- Outbreaks consisting of two or cases from a confirmed common source are reported to the National Outbreak Reporting System (NORS) by the designated state NORS Administrator.
- Outbreaks including all single cases of Botulism, PSP, and Trichinellosis are recorded on the Foodborne and Enterics Outbreaks linelist located at P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet [file name “outbreak and investigations spreadsheet”]; list by onset date of first illness.

#### XV. Whole Genome Sequencing (WGS)

- WGS is a type of advanced molecular detection by gene sequencing.
- Requires pure culture.
- Will replace PFGE by 2019; advantages include:
  - Fast turnaround time for real-time information
  - More economical than PFGE
  - Detects more outbreaks with less surveillance
  - Aligns human specimens with food / environmental specimens allowing for more focused investigations
- ASPHL will conduct sequencing on cultures of human specimen.

#### XVI. Culture Independent Diagnostic Testing (CIDT)

- PCR testing on raw specimens.
- Can detect dual infections.
- CIDT is faster, cheaper than previous methods.
- Does not require culture for pathogen identification.
- Rapid tests conducted at hospital/clinic settings.
- Does not give serogroup, serotype, or PFGE information.
- ASPHL requires pure culture for identification and PFGE, WGS.
- Isolate submission of certain reportable pathogens or aliquots of original specimen material must be submitted to ASPHL per Alaska Regulations 7 AAC 27.007. See also: <http://www.epi.hss.state.ak.us/pubs/conditions/ConditionsReportablePg11.pdf>
- Pathogen-specific interviews by PHNs are conducted following positive CIDT results.

#### XVII. Palantir (SEDRIC) Database

- Real-time CDC foodborne outbreak tracking database <https://palantir-orpb.cdc.gov/>
- PFGE data uploaded through PulseNet
- EPI data is entered into Line List Editor to aid in real time outbreak investigation

- Palantir training PowerPoints are located at P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet

#### XVIII. Reporting to the National Outbreak Reporting System (NORS)

- [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov)
- State NORS Administrators are allowed access to NORS data entry.
- Outbreaks are reported to NORS by the designated state NORS Administrator. These are:
  - two or cases from a confirmed common source
  - single cases that are part of a multistate outbreak
- Alaska outbreaks are numbered by year and sequential number, i.e., AK15-001 etc.
- Outbreaks from food, water, environment, and P2P exposures are reported to NORS.
- Outbreaks are entered within 60 days of first onset of illness at <https://www.cdc.gov/nors/Login.aspx?ReturnUrl=%2fnors%2f>
- Guidance documents are located at P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet and through CDC at <http://www.cdc.gov/outbreaknet/nors/>

#### XIX. Reporting Requirements

##### ALL REPORTABLE CONDITIONS

- AKSTARS
  - Enter all lab-confirmed cases and epi-linked cases.
  - Assign an outbreak name and number; link cases to the outbreak name/number per AKSTARS guidelines.
- Outbreaks are recorded on the Foodborne and Enterics Outbreak Linelist P:\Infectious\TDrive\INF\_Apps\Outbreaks and Investigations Spreadsheet
- Summarize investigations of outbreaks in collaboration with MOA PHNs and MOA/DEC EHOs even if no pathogen is identified. Use existing templates for certain outbreaks, e.g., PSP, botulism.

##### INSTRUCTIONS FOR SPECIFIC PATHOGENS

(Note: information about specific forms is also available in *Epidemiology Procedure Manual* chapters, available at: <http://epi.alaska.gov/pubs/mmm/toc.htm>).

No protected personal identifiers (PPI) are faxed to CDC; all case surveillance forms are redacted before emailing or faxing to CDC. If CDC is serving as a diagnostic laboratory and evaluating specimens, PPI may be included along with the specimen test request forms.

- COVIS (Cholera and Other Vibrio Illness Surveillance Report)
  - All cases of vibriosis are reported to CDC COVIS Surveillance
  - Complete the COVIS form including investigation information from DEC Shellfish Program <http://www.cdc.gov/nationalsurveillance/PDFs/cdc5279-covis-vibriosis-508c.pdf>
  - Fax form to CDC at 404-639-2205.

- Typhoid/Paratyphoid
  - All cases of Typhi and Paratyphi are reported to CDC Typhoid/Paratyphoid Surveillance
  - Complete the Typhoid and Paratyphoid Fever Surveillance Report found here <http://www.cdc.gov/nationalsurveillance/PDFs/typhi-surveillance-form.pdf>
  - Fax form to CDC at 404-639-2205.
- Botulism
  - Botulism case data are reviewed and reconciled with SOE yearly by the CDC Botulism Team.
- Trichinellosis
  - All cases of trichinellosis are reported to CDC using the Trichinellosis Surveillance Report Form found here [http://www.cdc.gov/parasites/trichinellosis/resources/pdf/trichinellosis\\_case\\_report\\_form.pdf](http://www.cdc.gov/parasites/trichinellosis/resources/pdf/trichinellosis_case_report_form.pdf)
  - Fax form to CDC at 404-718-4816.
- Brucellosis
  - All cases of brucellosis are reported to CDC using the Brucellosis Case Report Form found here <http://www.cdc.gov/brucellosis/pdf/case-report-form.pdf>
  - Fax form to CDC at 404-929-1590.

XX. After Action/Lessons Learned

- Agencies routinely collaborate to debrief following each outbreak response and refine response protocols based on lessons learned.

XXI. References

American Public Health Association. *Control of Communicable Diseases Manual*, 20<sup>th</sup> Edition 2015.

Council to Improve Foodborne Outbreak Response (CIFOR). *Guidelines for Foodborne Disease Outbreak Response*. Atlanta: Council of State and Territorial Epidemiologists, 2014 2<sup>nd</sup> edition.