Alberta Public Health Disease Management Guidelines

Shigellosis

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Communicable Disease Control Branch

Public Health Delivery Division

Primary and Preventative Health Services

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Table of Contents

Revisions **4**
Case Definition **5**
Confirmed Case 5
Probable Case 5
Suspect Case 5
Reporting Requirements **6**
Physicians, Health Practitioners and Others 6
Laboratories 6
Medical Officers of Health 6
Clinical Assessment and Epidemiology **7**
Etiology 7
Clinical Presentation 7
Diagnosis 7
Treatment 7
Reservoir 8
Transmission 8
Incubation Period 8
Period of Communicability 8
Host Susceptibility 8
Incidence 8
Public Health Management **9**
Key Investigation 9
Management of a Case 10
Management of Contacts 10
Preventive Measures 11
References **13**

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Revisions

Revision Date	Document Section	Description of Revision
October 2026	General	• Entire guideline updated to align with current information.
	Case Definition	• Added statement to clarify purpose of case definitions. • Updated Probable Case definition to include detection of Shigella/Enteroinvasive *E. coli* (EIEC) PCR/NAT. • Reclassified the former Probable Case definition to Suspect Case definition. • Added and revised footnotes to support interpretation of test results.
	Reporting Requirements	• Included reporting requirements for suspect cases.
	Public Health Management	• Updated Sensitive Situations or Occupations (SSO) definition table. • Updated exclusion criteria for cases and contacts.

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Case Definition

This definition is for surveillance, epidemiologic, and public health management purposes only and is not meant to replace clinician judgement in individual patient diagnosis and clinical care.

Confirmed Case

Laboratory confirmation of infection with or without clinical illness [(A)]:

- Isolation of *Shigella* spp. from an appropriate clinical specimen [(B)(C)]

Probable Case

- Detection of *Shigella* spp./Enteroinvasive *E. coli* (EIEC) nucleic acid with or without clinical illness, in an appropriate clinical specimen[(B)] using a nucleic acid test (NAT), such as a polymerase chain reaction (PCR) [(D)]

Suspect Case

- Clinical illness[(A)] in a person who is epidemiologically linked to a confirmed case

[(A)] For more information see Clinical Presentation

[(B)] Refer to the Public Health Laboratory (ProvLab) Guide to Services for current specimen collection and submission information.

[(C)] Culture is important for clinical management, species identification, and to enable molecular typing, required for surveillance, antimicrobial susceptibility testing, and outbreak detection and response. Shigella reflex culture testing is performed on all NAT-positive (NAT+) specimens. Culture must be specifically requested on NAT-negative (NAT -) results if needed (e.g., high index of suspicion, epidemiological context).

[(D)] NAT/PCR testing cannot reliably distinguish *Shigella* from EIEC as they are genetically similar. *Shigella* is technically difficult to recover in culture, and culture is less sensitive than NAT/PCR, therefore, a positive PCR and negative Shigella culture would be considered a probable case. Culture for EIEC is not routinely done but if requested, and positive (along with a negative Shigella culture) would not be considered a probable case.

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Reporting Requirements

Physicians, Health Practitioners and Others

- Physicians, health practitioners, and others shall notify the Medical Officer of Health (MOH) (or designate), of all confirmed, probable, and suspect cases in the prescribed form by mail, fax, or electronic submission (e.g., email) within 48 hours (two business days).

Laboratories

- All laboratories shall report all positive laboratory results by mail, fax, or electronic submission within 48 hours (two business days) to the:
  - MOH (or designate), and
  - Chief Medical Officer of Health (CMOH) (or designate)

Medical Officers of Health

- The MOH (or designate) where the case currently resides shall forward the initial Notifiable Disease Report (NDR) of all confirmed, probable, and suspect cases to the CMOH (or designate) within two weeks of notification and the final NDR (amendment) within four weeks of notification.
- The MOH (or designate) shall report all outbreaks to CMOH (or designate) via the *Alberta Outbreak Report Form (AORF)* as soon as possible using existing processes (e.g., CDOM or fax).
- For out-of-province and out-of-country cases and/or contacts, the MOH (or designate) should forward the following information to the CMOH (or designate) using existing processes (e.g., CDOM or fax) within 48 hours (two business days):
  - name,
  - date of birth,
  - out-of-province health care number,
  - out-of-province address and phone number,
  - positive laboratory report (if applicable), and
  - other relevant clinical/epidemiological information.

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Clinical Assessment and Epidemiology

Etiology

Shigellosis is caused by *Shigella* species, which are divided into four subgroups, each with multiple serotypes:[1,2]

- *Shigella dysenteriae (Group A):* 15 serotypes; serotype 1, the most virulent subtype, produces Shiga-toxin
- *Shigella flexneri (Group B)*: 8 serotypes
- *Shigella boydii (Group C)*: 19 serotypes
- *Shigella sonnei (Group D):* 1 serotype, (most common species in high-income countries)

Clinical Presentation

Shigellosis typically presents with the sudden onset of watery or bloody diarrhea, which may contain mucous.[2,3] Common accompanying symptoms include fever, malaise, nausea, vomiting, tenesmus and abdominal cramps.[2,3]

Illness severity varies widely, from mild or asymptomatic to severe, life-threatening disease.[2,3] Outcomes depend on the infecting *Shigella* species as well as the individual's age and nutritional status.[2]

S. dysenteriae type 1, which has epidemic potential, may cause invasive disease with serious complications such as toxic megacolon, intestinal perforation and hemolytic-uremic syndrome (HUS), with case fatality rates up to 20% among hospitalized cases.[2,3] Other *Shigella* species may cause complications including reactive arthritis, severe dehydration, or septicemia.[1–3]

Diagnosis

Specific to *Shigella,* NAT tests, such as a polymerase chain reaction (PCR) have higher sensitivity than culture, shorter turnaround times, and may detect infections that culture methods may miss.[4] Although positive culture results have a high positive predictive value, *Shigella* is technically difficult to grow, which can lead to false negatives. In comparison, PCR testing has a higher negative predictive value and can produce results more rapidly. However, PCR testing is unable to distinguish *Shigella* species from Enteroinvasive *E. coli (*EIEC) due to shared genetic targets detected by the standard bacterial enteric testing panel.[4,5]

All specimens with positive *Shigella*/EIEC NAT must be submitted for culture to enable molecular typing (e.g., whole genome sequencing) to support surveillance, outbreak detections and public health response; See Canadian Public Health Laboratory Network (CPHLN) for additional information. Given the high prevalence of multidrug-resistant *Shigella,* recovery of a cultured isolate is also required for antimicrobial susceptibility testing (AST) and/or antimicrobial resistance (AMR) prediction to inform clinical treatment and support AMR surveillance.[2,5,6]

Treatment

- Uncomplicated infections are typically self-limiting and antibiotics are not routinely recommended for mild cases.[2,3]
- Management is primarily supportive, with emphasis on fluid replacement and correction of electrolyte imbalance.[1–3]
- Antibiotic treatment, when indicated, may shorten illness duration and reduce pathogen shedding, contributing to transmission control, particularly during an outbreak.[1–3]
- Given increasing antimicrobial resistance, AST is important to guide antibiotic selection.[1,2]

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- Antimotility agents are not recommended, as they may prolong illness and increase the risk of complications.[1,2]

Reservoir

Humans are the only significant and natural reservoir.[1–3]

Transmission

Shigellosis is transmitted primarily via the fecal-oral route, either through direct person-to-person contact or indirectly through contaminated food, water or fomites.[1–3] Transmission may also occur through sexual activities involving exposure to fecal material.[1,2] *Shigella* only survives for a short period outside the human host.[2]

Incubation Period

The incubation period typically ranges from 1 to 7 days.[2,3]

Period of Communicability

Shigellosis is communicable during the acute phase of illness and while the organism is being excreted in feces, which is usually less than 4 weeks after symptom onset.[2] Rarely, asymptomatic carriers may continue to shed the organism for several months.[2] Appropriate antibiotic treatment may reduce the duration of illness and fecal shedding.[1,7]

Host Susceptibility

Infection and death from shigellosis occur most frequently among children less than 10 years of age.[2] Individuals at increased risk of severe disease include older adults, malnourished individuals, or those who are immunocompromised.[2]

Unhoused individuals and men who have sex with men are at higher risk of infection.[2] Outbreaks are more likely to occur in crowded or congregate settings, such as correctional facilities, childcare and mental health facilities, and encampments, including refugee camps.[2]

Incidence

Globally, the greatest burden of shigellosis is among children under 5 years of age in low- and middle-income countries.[2]

In Canada, shigellosis has been nationally notifiable since 1924. For current national case counts, refer to the Notifiable Diseases Online website.

In Alberta, shigellosis cases have been reportable since 1985. For more information on reported cases in Alberta, refer to the Interactive Health Data Application (IHDA).

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Public Health Management

Key Investigation

- Ensure the person meets case definition.
- Obtain history of illness including date of onset of signs and symptoms and determine incubation period and period of communicability.
- Determine the possible source of infection, taking into account the incubation period, reservoir, and mode of transmission and obtain history of:
  - recent consumption of potentially contaminated food, water, or beverages
  - attendance at childcare or other institutional settings
  - exposure to potentially contaminated water (recreationally or otherwise)
  - sexual practices that facilitate fecal-oral transmission,
  - recent travel to, or immigration from, areas with inadequate sanitation or wastewater management in Canada or abroad.
- If contaminated food is suspected as the source, the affected items may be held or destroyed to prevent further consumption and transmission.
- Identify contacts with exposure to the same source and/or to the case, assess for symptoms. Contacts may include:
  - persons living in the household,
  - children and workers at a childcare facility (daycare, day home, or other childcare site),
  - other close, non-household contacts
  - recent co-travellers, and
  - individuals exposed to the same source (if identified).
- Determine the occupation and prioritize public health management for cases and contacts classified as being in sensitive situations or occupations (SSO) (Table 1).

Table 1: Sensitive Situations or Occupations (SSO)

SSO	Activities
Food handler [(E)]	• Touches unwrapped food [(E)] to be consumed, and/or • Handles [(E)] equipment or utensils that touch unwrapped food to be consumed. *
Health care, childcare or other caregiving staff	• Has contact through serving food to patients or persons in whom a gastrointestinal infection would have particularly serious consequences. • Provides direct patient care or is involved in the care of young children, elderly, or dependent persons.
A child who is diapered, incontinent, or requires assistance with toileting or hand hygiene	• Attending a childcare setting

* NOTE: Generally, food handlers who do not touch food, equipment or utensils in this way are not considered to pose a transmission risk; however, circumstances for each case should be assessed on an individual basis.

[(E)] Please refer to the Alberta Food Regulation for definitions of "food," "food handler, and "handle" .

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Management of a Case

- All cases should be advised of the following:
  - how the disease is transmitted and the importance of appropriate personal hygiene, routine infection prevention and control practices, and contact precautions
  - the role of antibiotic treatment (when indicated) in reducing duration of carriage and the risk of transmission
- Advise symptomatic cases to avoid the following until 48 hours after symptoms have resolved:
  - food handling or preparation for others
  - sexual practices that facilitate fecal-oral transmission
  - public recreational water (e.g., swimming pools)
- Hospitalized cases should be managed in accordance with hospital infection prevention and control guidelines.
- Severe cases or cases with complications may require consultation with an infectious disease specialist.
- Refer to Table 2 for exclusion criteria (only applicable to cases in **SSO**).
- Cases (confirmed, probable or suspect) in non-SSO are not excluded; however, symptomatic individuals should remain home from work, school, or daycare until 48 hours after symptoms have resolved.

Table 2: Case Exclusion - SSO

Case Classification	Symptomatic	SSO	Exclusion Criteria
Confirmed	Yes	Yes	The MOH **shall,** by order, exclude the case until two stool samples are reported as negative (culture or PCR), and collected: • 48 hours after symptoms have resolved, • at least 24 hours apart from previous samples, and • 48 hours after completion of treatment (if applicable).
Confirmed	No	Yes	The MOH **shall,** by order, exclude the case until two stool samples are reported as negative (culture or PCR), and collected: • at least 24 hours apart from previous samples, and • 48 hours after completion of treatment (if applicable).
Probable	Yes	Yes	The MOH **may,** by order, exclude the case until one additional stool specimen is reported as negative (culture or PCR), and collected: • 48 hours after symptoms have resolved, • at least 24 hours apart from previous samples, and • 48 hours after completion of treatment (if applicable).
Probable	No	Yes	The MOH **may,** by order, exclude the case until one additional stool specimen is reported as negative (culture or PCR) and collected: • at least 24 hours apart from previous samples, and • 48 hours after completion of treatment (if applicable).
Suspect	Yes	Yes	The MOH **may,** by order, exclude the case until one stool specimen is reported as negative (culture or PCR) and collected: • 48 hours after symptoms have resolved, • at least 24 hours apart from previous samples, and • 48 hours after completion of treatment (if applicable).

Management of Contacts

- All contacts should be advised of how the disease is transmitted and the importance of appropriate personal hygiene, routine infection prevention and control practices, and contact precautions.

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- Symptomatic contacts should be assessed by a health care provider.
- Refer to Table 3 for exclusion of **symptomatic** contacts.
- Asymptomatic contacts are not excluded; however, advise to:
  - self-monitor for gastrointestinal symptoms
  - maintain good hand hygiene and food safety practices
  - seek medical attention if symptoms develop

Table 3: Symptomatic Contact Exclusion

Contact of	Symptomatic (Contact)	SSO (Contact)	Contact Exclusion Criteria
Confirmed Case	Yes	Yes	Meets suspect case definition. Apply exclusions as per Table 2.
Confirmed Case	Yes	No	Meets suspect case definition. Exclusions not required for non-SSO cases or contacts. Instruct contact to be assessed by a health care provider and remain home from work, school, or daycare until 48 hours after symptoms resolve or testing results are negative for disease.
Probable Case	Yes	Yes	The MOH ***may,*** by order, exclude the case until one stool specimen is reported as negative (culture or PCR) and collected: • 48 hours after symptoms have resolved, • at least 24 hours apart from previous samples, and • 48 hours after completion of treatment (if applicable).
Probable Case	Yes	No	None. Instruct contact to be assessed by a health care provider and remain home from work, school, or daycare until 48 hours after symptoms resolve or testing results are negative for disease.
Suspect Case	Yes	Yes	None. Instruct contact to be assessed by a health care provider and remain home from work, school, or daycare until 48 hours after symptoms resolve or testing results are negative for disease.

Preventive Measures

Provide information on disease prevention:

- Personal hygiene
  - Practice thorough hand hygiene with soap and water:
    - after defecation
    - before and after sexual contact,
    - after changing diapers or assisting with toileting
    - before preparing and before eating food
  - Ensure the sanitary disposal of items contaminated with feces
- Sexual practices
  - Use condoms consistently and correctly
  - Advise on the risk of sexual practices that permit fecal-oral contact and ways to reduce this risk
  - Avoid sex while symptomatic
- Safe drinking water
  - Drink only from clean, potable water sources
- Food safety
  - Reduce foodborne risk by following safe food handling and hygiene practices, including:
    - Proper hand hygiene
    - Thorough cooking of foods

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    - Preventing cross-contamination
    - Avoid preparing food for others while symptomatic
- Refer to additional Food Safety information for more guidance.

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