Effective May 1, 2026 – Post-Exposure Immunoprophylaxis Update (Vaccine Product Change)

Due to updates to the meningococcal immunization program, the meningococcal quadrivalent conjugate vaccine (Men-C-ACYW) replaces the meningococcal C conjugate vaccine for post-exposure immunoprophylaxis following exposure to Neisseria meningitidis serogroup C. This change applies to all age groups.

For individuals under two years of age, follow the Men-C-ACYW schedule for close contacts of serogroups A, Y, and W, as outlined the Canadian Immunization Guide: Meningococcal vaccine chapter Table 2.

Notification Timeline:

From Lab/Practitioner to Public Health: Immediate.
From Public Health to Saskatchewan Health: Within 72 hours.

Public Health Follow-up Timeline: Initiate within 24-48 hours.

Public Health Purpose for Notification of Meningococcal Disease (adapted from British Columbia Center for Disease Control [2017])

- To minimize mortality and serious morbidity from meningococcal disease;
- To rapidly identify close contacts of the case and to provide recommendations for appropriate preventive measures for close contacts so as to prevent further spread of infection and disease;
- To provide information about the disease, its transmission, and methods of prevention;
- To identify clusters or outbreaks of infection and to initiate appropriate prevention and control measures;
- To track epidemiology trends of meningococcal disease in Saskatchewan including risk factors and distribution;
- To monitor the effectiveness of prevention and control measures;
- To plan expansion or introduction of future immunization programs;
- To provide timely clinical care including diagnosis and treatment using current, evidence-based guidelines
- To make timely and evidence informed actions on outbreaks; and
- To inform the public and medical community about meningococcal disease.

Surveillance Case Definition[1] (Public Health Agency of Canada, May 2008)

Confirmed Case	Clinical evidence[1] of invasive disease with laboratory confirmation of infection: • isolation of *Neisseria meningitidis* from a normally sterile site (blood, cerebrospinal fluid (CSF), joint, pleural or pericardial fluid) **OR** • demonstration of *N. meningitidis* DNA by an appropriately validated nucleic acid test (NAT)[2] from a normally sterile site.
Probable Case	Clinical evidence[1] of invasive disease with purpura fulminans or petechiae, with no other apparent cause and with non-confirmatory laboratory evidence: • detection of *N. meningitidis* antigen in the CSF.
[1]Clinical illness associated with invasive meningococcal disease usually manifests itself as meningitis and/or septicaemia, although other manifestations may be observed (e.g., orbital cellulitis, septic arthritis). Invasive disease may progress rapidly to petechiae or purpura fulminans, shock and death. [2]Each jurisdiction will have a validation process for the NAT that they have in place.	

Both confirmed and probable cases of **invasive** meningococcal disease (IMD) are notifiable to the provincial and national level.

At this time, conjunctivitis and pneumonia cases due to *N. meningitidis* are not notifiable nor reported to the Ministry of Health or the Public Health Agency of Canada, however case definitions are as follows:

- A conjunctivitis case requires isolation of *N. meningitidis* from the eye or the conjunctival sac in association with purulent conjunctivitis.
- A pneumonia case is one with a Gram strain (if done) showing Gram-negative diplococci and a polymorphonuclear cell response from sputum or respiratory aspirate, isolation with heavy growth of *N. meningitides*, **and** clinical or radiological evidence of pneumonia.
- Patients with *N. meningitidis* conjunctivitis or pneumonia should be treated by the clinician with appropriate systemic antibiotics (Public Health Agency of Canada, 2005).

[1] Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases.

Epidemiology and Occurrence

Under development

Additional Background Information

Causative Agent

Neisseria meningitidis, the meningococcus, is a Gram-negative, aerobic diplococcus. *Neisseria* are divided into Serogroups including A, B, C, W-135, X and Y (Heymann, 2015).

Symptoms

- Sudden onset of fever, intense headache, nausea and often vomiting, stiff neck, and photophobia.
- Petechial rash with pink macules or, very rarely, vesicles (Heymann, 2015).
- Delirium and coma often appear.
- Occasional fulminating cases exhibit sudden prostration, ecchymoses, and shock.

Complications

10-20% of survivors suffer long-term sequelae:

- Neurological deficits
- Hearing loss
- Limb loss

The case fatality rate is 8-15% (Heymann, 2015)

Reservoir/Source

Humans are the only reservoir. Asymptomatic colonization in the upper respiratory tract occurs in up to 5-10% of people. Less than 1% of colonized individuals develop disease (Heymann, 2015).

Incubation Period

2 to 10 days, commonly 3 to 4 days (Heymann, 2015).

Period of Communicability

As long as 7 days before the onset of symptoms until meningococci are no longer present in discharges from the nose and mouth, usually within 24 hours of the beginning of appropriate antibiotic treatment. Up to 5-10% of people can be asymptomatic carriers; communicability is difficult to determine in carriers (Heymann, 2015).

Mode of Transmission

- Person-to-person by direct contact with respiratory droplets from the nose and throat of an infected person. Can be carried for distances < 1 meter by droplets generated by coughing or sneezing (Public Health Agency of Canada, 2005).
- Fomite transmission is insignificant (Heymann, 2015).
- The likelihood/risk of person-to-person transmission of meningococcal disease is related to the type of contact and length of the contact with the confirmed case (Public Health Agency of Canada, 2005).

Specimen Collection and Transport

- Cultures of blood and CSF are indicated in all patients with suspected invasive disease.
- Cultures of petechial (purpuric lesions) scrapings, synovial fluid, pleural fluid and pericardial fluid are positive in some patients.
- In accordance with the Saskatchewan Disease Control Regulations, section 21.1, all clinical isolates **must** be forwarded to the Roy Romanow Provincial Laboratory (RRPL) for serotyping. Ideally this should be done when the initial gram stain or positive preliminary culture results are available if not ordered sooner by the Medical Health Officer (MHO). Further characterization may be done by National Microbiology Lab.
- **Note:** Since *N. meningitidis* can be part of the normal nasopharyngeal flora, isolation of this organism from the throat is not helpful in determining the cause of the disease.

Refer to the RRPL Compendium of Tests for details on specimen collection and transportation – available online at https://rrpl-testviewer.ehealthsask.ca/.

Risk Factors/Risk Groups

Susceptibility to the clinical disease is low and decreases with age. Persons deficient in certain complement components are especially prone to recurrent disease.

Increased risk of IMD is associated with the following:

- functional or anatomic asplenia;
- underlying immune deficiencies (properdin deficiency, deficiency of terminal complement components or factor D deficiency);
- candidates and recipients of solid organ transplant;
- recipients of hematopoietic stem cell transplant;
- infants, adolescents, and young adults;
- crowded housing/living conditions;

- low socioeconomic status;
- active or passive exposure to tobacco smoke and concurrent upper respiratory tract infections (U.S. Centers for Disease Control and Prevention, 2015);
- young people living in an institutional setting such as military recruits or enlisted personnel and university students in a dormitory setting or at residential camps;
- living in the African meningitis belt (area from Senegal to Ethiopia).

Public Health Investigation

I. Case

Refer to Attachment – Meningococcal Disease (invasive) Data Collection Worksheet to assist.

History

- Determine if case has been laboratory confirmed and if molecular serotyping has been completed.
- Onset of illness, presentation and treatment (with what and when) – to determine incubation period and period of communicability which helps to identify the possible source and contacts to be followed.
- Travel history may be of significance in contact tracing.
- Determine if case has underlying medical conditions or falls into a risk category.
- Try to determine acquisition exposures as well as transmission exposures (e.g. student residence, sporting events, childcare or occupational settings etc.).
- Liaison with school authorities when a case is a student.
- Review immunization history of the case.

Public Health Interventions

Assessment

- Assess for contacts - Aggressive contact tracing, identification, and appropriate management, is the foundation to the prevention of secondary cases. Refer to Table 2 - Contact Definition.
- Obtain names, addresses, and phone numbers of all possible contacts. This information may need to be obtained from someone close to the case.

Communication

- Letters can be sent to classrooms and other group settings where individual contact tracing is not required (i.e. involving school age and adults where there are no vulnerable contacts) to inform them of the exposure, symptom monitoring and when to seek medical attention (see Sample letter).

Education

- All cases should be provided disease information as well as information on prevention and control measures including period of communicability and avoiding contact with vulnerable individuals.

Exclusion

- Individuals with the disease are generally in hospital so are not attending activities. They are isolated until 24 hours after initiation of an appropriate antibiotic (e.g., ceftriaxone, etc.). Otherwise cases or contacts generally do not need to be excluded from any activities.

Immunization

- Case follow-up should be used as an opportunity to recommend immunizations they are eligible for as per the Saskatchewan Immunization Manual. The case should be assessed for underlying risk factors and should be offered vaccine as outlined in the Saskatchewan Immunization Manual, Appendix 7.1.[2]

Referrals

- When clients are hospitalized, communication with hospital staff and or infection control staff is important.
- Refer client to primary caregiver for referrals (physiotherapy, occupational therapy, Home Care) are available if necessary.

Treatment

The public health practitioner should direct any questions regarding the current treatment protocols to the physician or MHO. The following serves as a reference for the public health investigator:

- *Antibiotic treatment is required and should be started as soon as presumptive diagnosis is made. For patient management the client's physician should consult an infectious disease specialist.*
- *In addition to therapeutic antibiotics, the case should receive chemoprophlaxis before hospital discharge unless the infection was treated with an antibiotic that is effective in nasopharyngeal eradication of N. meningitidis (Public Health Agency of Canada, 2005).*

[2] http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7

II. Contacts/Contact Investigation

Contact Definition

Table 2: Definition of Close Contacts (Public Health Agency of Canada, 2005)

- Household contacts of a case.
- Persons who share sleeping arrangements with the case (e.g. shared bedrooms or dorm rooms in residences).
- Persons with intimate contact with the case.
- Persons who have direct contamination of their nose or mouth with the oral/nasal secretions of a case (e.g., kissing on the mouth, shared cigarettes, shared drinking bottles) in the 7 days before onset of illness.
- Health care workers (HCWs) who have had intensive (e.g., intubating, resuscitating or closely examining the oropharynx), unprotected contact (without using droplet precautions) with infected patients in the 7 days before onset of illness and completion of the first 24 hours of treatment.[3]
- Children and staff in childcare and nursery school facilities during the 7 days before onset of illness.
- Airline passengers sitting immediately on either side of the case (but not across the aisle) when the total time spent aboard the aircraft was at least 8 hours during the 7 days before onset of illness.

Chemoprophylaxis is not recommended for close contacts of patients with evidence of *N. meningitidis* only in non-sterile sites such as an oropharyngeal swab, endotracheal secretions, or conjunctival swab. (US Centers for Disease Prevention and Control, 2018).

Prior to the introduction of the routine use of chemoprophylaxis for household contacts, they were 500 to 1,200 times at greater risk of IMD than the general population. There is also an increased risk in child care settings, although the risk is lower than in household settings. Risk is not increased in social contacts, therefore the individual relationship to the case must be considered as outlined in Table 2 for school, transportation, social, and workplace contacts.

[3] HCWs are rarely at risk even when caring for infected patients and chemoprophylaxis is rarely warranted except when they meet the definition of a close contact (Heymann, 2015).

Public Health Interventions

Assessment

- Assess for symptoms.

Communication

- Individual follow-up of contacts in larger daycares, classrooms, schools, teams, workplaces, etc., is generally not recommended. These individuals should be informed by letter from public health, advising them to see their physician if they develop symptoms. These persons, if they become symptomatic, should not be assumed to have pertussis but should be assessed, tested and treated appropriately.

Chemoprophylaxis

The purpose of chemoprophylaxis is to eradicate nasopharyngeal colonization by *N. meningitidis* and thus prevent disease in contacts and further transmission to susceptible persons (Public Health Agency of Canada, 2005).

- Antimicrobial chemoprophylaxis should be administered *as soon as possible*, ideally less than 24 hours, after identification of the index patient but is still recommended for up to 10 days after the last contact with the index case while they were infectious (Public Health Agency of Canada, 2005; U.S. Centers for Disease Control and Prevention, 2011)[4].
- Chemoprophylaxis should be offered for close contacts (as defined in Table 2).
- It should also be considered for close contacts of a case that is strongly suspected to be IMD, if laboratory confirmation cannot be obtained within 24 hours.
- Chemoprophylaxis is not routinely recommended for HCWs including emergency personnel[5]. Only health care personnel who were managing an airway[6] or exposed to respiratory secretions of a patient with meningococcal disease (US Centers for Disease Prevention and Control, 2018).
- For residents of an institutional living or residential camp setting, only contacts that share a room with the case need prophylaxis. If there are other persons who meet the contact definition, they should also receive prophylaxis.
- Refer to Attachment – Meningococcal Chemoprophylaxis Guidelines for details.

[4] Chemoprophylaxis is unlikely to be of benefit if given > 10 days after the most recent exposure to an infectious case (Public Health Agency of Canada, 2005).
[5] HCWs are rarely at risk even when caring for infected patients and chemoprophylaxis is rarely warranted except when they meet the definition of a close contact (Heymann, 2015).
6 intubating, resuscitating or closely examining the oropharynx

Education

- Close contacts of confirmed cases should be educated about meningococcal disease and the signs and symptoms of meningococcal disease (meningitis and meningococcemia).
- They should be advised to seek immediate medical attention if they develop febrile illness or any other signs (see Symptoms).
- They should also be advised about the modes of transmission, period of communicability, and measures that they can take to reduce the risk of acquiring the disease.
- Reinforce proper hand washing and personal protective measures as per Respiratory and Direct Contact Introduction and General Considerations regarding diseases transmitted via respiratory and direct contact.
- Exposed household contacts and daycare contacts should be observed and advised to seek prompt medical attention if they develop a febrile illness.
- Meningococcal Disease (*Neisseria meningitidis*) information sheet can be provided.
- Advise individuals of the increased risk from overcrowding in living quarters and workplaces, such as schools, camps, and ships.

Exclusion

Due to the low secondary attack rate and the short duration of chemoprophylaxis, contacts do not need to be excluded from day care, school, or work.

Immunoprophylaxis

See May 1, 2026 post-exposure immunoprophylaxis update

- Close contacts of individuals with meningococcal infections have an increased risk of developing IMD; this risk is greatest for household contacts. The increased risk of meningococcal disease for household contacts persists for up to one year after disease in the index case and beyond any protection from antibiotic chemoprophylaxis. In general, this prolonged risk is not seen among other contacts that do not have ongoing exposure (Public Health Agency of Canada, 2005).

When the serogroup is vaccine-preventable (i.e., serogroup A, B, C, W-135 or Y), the following individuals should be considered for immunoprophylaxis in addition to chemoprophylaxis:

- household contacts of a case;
- persons who share sleeping arrangements with the case;
- persons who have direct exposure of their nose or mouth with oral/nasal secretions of a case (e.g., kissing on the mouth, shared cigarettes, shared drinking bottles); and
- children and staff in child care and nursery school facilities.

The following individuals are close contacts who **do not** require immunoprophylaxis (they should only receive chemoprophylaxis) as they do not have ongoing exposure:

- HCWs who have managed the airway[7] of a meningococcal case.
- Airline passengers sitting immediately on either side of the case (but not across the aisle) when the total time spent aboard the aircraft was at least 8 hours.

Vaccination history should be reviewed for eligible close contacts (date and type of previous meningococcal vaccine). When indicated, immunization should be carried out as soon as possible. For those who were previously immunized, revaccination should be provided based on the following criteria:

- Individuals with underlying medical risk factors (as per Saskatchewan Immunization Manual, Appendix 7.1[8]) should be revaccinated if it has been **more than four weeks** since a previous meningococcal vaccine was received (Public Health Agency of Canada, 2015).
- Individuals who were immunized at less than 1 year of age should be revaccinated if it has been **more than 4 weeks** since a previous meningococcal vaccine was received (Public Health Agency of Canada, 2015).
- Individuals who were immunized after their first birthday and individuals without underlying medical risk factors should be revaccinated if they have not been vaccinated with a meningococcal vaccine **in the past year** (Public Health Agency of Canada, 2015).

[7] intubating, resuscitating or closely examining the oropharynx
[8] http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7.

To the extent possible, Saskatchewan follows the recommendations in the 2015 Canadian Immunization Guide for post-exposure vaccination of close contacts for vaccine preventable meningococcal serogroups[9].

Special Considerations for Immunoprophylaxis

Serogroup B:
Recommendations for post-exposure use of meningococcal B vaccine are not included in the current version of the evergreen Canadian Immunization Guide (as of April 2015). Refer to Chapter 10 of the Saskatchewan Immunization Manual for the multicomponent meningococcal B vaccine (4CMenB) schedule and complete the series that they are eligible for based on their age.

Serogroup C:
Individuals 11 years of age and older who are contacts to serogroup C can receive either Men-C-C or Men-C-ACYW-135. Saskatchewan parameters for which vaccine to provide are outlined in Attachment – Immunoprophylaxis Guidelines for Serogroup C Contacts Who Are 11 Years of Age and Older.

Testing

- Testing of asymptomatic contacts is of no value and is not recommended.

III. Environment

Child Care Centre/Schools Control Measures

Ensure each parent receives the information sheet about Meningococcal Disease (*Neisseria meningitidis*).

[9] https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-13-meningococcal-vaccine.html

Management of the centre/school:

- Notify and educate staff and parents of contacts of the case to be alert for anyone with sudden onset of fever, intense headache, nausea and often vomiting, stiff neck and photophobia. Seek prompt evaluation by a physician for any ill child.
- The centre director must notify public health if any additional children become ill.
- All children and care providers should be evaluated as to whether they meet criteria for contact definition for meningococcal disease and be given chemoprophylaxis as appropriate.
- Notify parents of all childcare centre attendees of the occurrence of a case of meningococcal disease and provide the Meningococcal Disease *(Neisseria meningitidis)* information sheet.
- Assess immunization status of children and staff and immunize as per Immunoprophylaxis section.

Special Considerations for Funeral Homes

Follow routine infection control practices when handling cadavers.

Traditionally, cadavers with meningococcal disease have been considered a possible source of infection. The risk is likely very low if the deceased person had been treated with an effective antibiotic for at least 24 hours before death.

In instances when the deceased had not been treated with an effective antibiotic before death, it is prudent for those who have occupational contact with a cadaver to follow routine infection control practices with additional droplet and contact precautions (Public Health Agency of Canada, 2005).

IV. Epidemic Measures

Outbreaks

An outbreak is defined as increased transmission of *N. meningitidis* in a population, manifested by an increase in cases of the same serogroup.

Outbreaks can be subdivided into organization-based or community-based outbreaks using the criteria shown in Table 3.

Table 3: Types of Outbreak

Organization-based	Increased transmission of *N. meningitidis* in an organization or institution with two or more cases of the same serogroup occurring within a 4-week interval. This includes restricted populations, such as schools, day cares, sports groups, or social groups, as well as nursing homes or long-term care facilities.
Community-based	Increased transmission of *N. meningitidis* in a community, with three or more confirmed cases of the same serogroup occurring within a three-month interval AND an age-specific incidence OR specific community population incidence of approximately 10/100,000, where there is an absence of an epidemiologic link between cases. This is not an absolute threshold and should be considered in the context of other factors.

Regardless of the type of outbreak, contact tracing, identification of close contacts, and provision of chemoprophylaxis to close contacts need to be conducted as described for sporadic cases.

When evidence suggests that an outbreak is occurring with increased transmission of *N. meningitidis* involving a vaccine-preventable serogroup in a delineated population, vaccination of persons at high risk should be considered. The specific epidemiology of the outbreak needs to be ascertained to define the group at risk. Decisions regarding the use of vaccine in communities with a higher than expected rate of disease should be made in consultation with the chief MHO.

When an outbreak occurs:

1. Communication strategy should be in place to provide timely information to the public. This would include:
   - why some people are being immunized and not others;
   - why some people are being given rifampin and not others;
   - not sharing of drinking equipment, cigarettes, etc. especially at sports and high school events;
   - low risk to people entering outbreak area.
2. A communication strategy aimed at the health care community should also be developed. This includes notification of local hospital emergency departments, labs, infection control departments, and physicians/nurse practitioners.
3. An outbreak advisory committee comprising ministry and local public health representatives, clinicians, and medical laboratory personnel should be established. Keep other jurisdictions informed about the outbreak and related control strategies.

4. A communication strategy is prepared before a decision is made to undertake an outbreak immunization program.

Prevention and Education

Refer to the Respiratory and Direct Contact Introduction and General Considerations section of the manual that highlights topics for client education that should be considered as well as provides information on high-risk groups and activities.

Education

- Educate the public about the disease and the need for active immunization. Immunization information fact sheets can be used to guide discussion.
- Education should be provided regarding respiratory etiquette and measures to prevent transmission.

Immunization

- Immunize infants, children, and adults according to the recommended age-appropriate schedules. Refer to Saskatchewan Immunization Manual.[10]
- Provide the appropriate vaccine to travelers at risk (refer to local travel health consultant for details). The risk to travelers planning to have prolonged contact with the local population in areas experiencing endemic/epidemic meningococcal A or C diseases may be reduced by immunization.
- Consider vaccination/revaccination for individuals at risk in outbreak situations if one of the vaccine preventable serogroups has been confirmed.

[10] http://www.ehealthsask.ca/services/manuals/Pages/SIM.aspx.

Revisions

Date	Change
April 2026	• Added interim statement for post exposure immunoprophylaxis vaccine product change from Men-C-C to Men-C-ACYW vaccine
September 2018	• Updated to align with Panorama configuration; • Incorporated Meningococcal Disease Data Collection Worksheet; • Clarified the purpose for notification of cases to public health; • Incorporated an Epidemiology and Occurrence placeholder into the chapter; • Rearranged and updated the style into the new format of the Manual. • Implemented boxes to draw attention to treatment, chemo and Immunoprophylaxis information. • Removed reference to treatment of conjunctivitis and chemoprophylaxis for contacts to cases with conjunctivitis based on more recent references. • Updated chemoprophylaxis recommendations for HCWs based on more recent references. • References reaffirmed or updated as necessary.

References

Alberta Health and Wellness. (2018). *Public health notifiable disease management guidelines: Meningococcal disease, invasive (IMD)*. Retrieved August, 2018 from http://www.health.alberta.ca/professionals/notifiable-diseases-guide.html.

American Academy of Pediatrics. (2015). *Red Book: 2015 Report of the Committee on Infectious Diseases* (30th ed.). Elk Grove Village, IL: Author.

British Columbia Centre for Disease Control. (2017). *Meningococcal disease.* In *BCCDC Communicable disease control manual.* Retrieved August, 2018 from http://www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual/communicable-disease-control

Health Canada. (2002). Prevention and control of occupational infections in health care: An infection control guideline. *Canada Communicable Disease Report (CCDR), 28S1:1-264.* Retrieved March, 2013 from http://www.collectionscanada.gc.ca/webarchives/20071124130346/http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02pdf/28s1e.pdf.

Heymann, D. L. (Ed.). (2015). *Control of Communicable Diseases Manual* (20th ed.). Washington, DC: American Public Health Association.

Public Health Agency of Canada. (2005). Guidelines for the prevention and control of meningococcal disease*. Canada Communicable Disease Report (CCDR), 31S1:1-20*. Retrieved August, 2018 from http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/05vol31/31s1/index-eng.php.

Public Health Agency of Canada. (2006). Update: Guidelines for the prevention and control of meningococcal disease. *Canada Communicable Disease Report (CCDR), 32(22).* Retrieved March, 2013 from http://www.collectionscanada.gc.ca/webarchives/20061212105411/http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/06vol32/dr3222ec.html.

Public Health Agency of Canada. (2008). Case definitions for communicable diseases under national surveillance*. Canada Communicable Disease Report (CCDR), 35S2*, November 2009. Retrieved August, 2018 from http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/Mening-eng.php.

Public Health Agency of Canada. (2009). Update on the invasive meningococcal disease and meningococcal vaccine conjugate recommendations. *Canada Communicable Disease Report (CCDR),* V35*(ACS-3).* Retrieved August, 2018 from http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/acs-dcc-3/index-eng.php.

Public Health Agency of Canada. (2015). *Canadian immunization guide* (Evergreen ed.). Ottawa, Canada: Public Works and Government Services Canada. Retrieved August, 2018 http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php#toc.

U.S. Centers for Disease Control and Prevention. (2010). Updated recommendations for use of meningococcal conjugate vaccines: Advisory Committee on Immunization Practices. *Morbidity and Mortality Weekly Report (MMWR), 60(03);72-76,* January 28, 2011. Retrieved August, 2018 from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6003a3.htm.

U.S. Centers for Disease Control and Prevention. (2015). *Epidemiology and prevention of vaccine-preventable diseases.* (13th ed.). Atkinson, W., Hamborsky, J., Wolfe, S., (Eds.). Washington DC: Public Health Foundation. https://www.cdc.gov/vaccines/pubs/pinkbook/mening.html

U.S. Centers for Disease Control and Prevention. (2018). *Manual for the surveillance of vaccine-preventable diseases. Chapter 8: Meningococcal disease (2018).* (MacNeil, J., Patton, M.). Atlanta GA: Washington DC. https://www.cdc.gov/vaccines/pubs/surv-manual/chpt08-mening.html

Government of Saskatchewan

PANORAMA

Meningococcal Disease (invasive) Data Collection Worksheet

Panorama QA complete: ☐ **Yes** ☐ **No**
Initials:

Please complete **all** sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name (Goes by):
DOB: YYYY / MM / DD Age: _____	Health Card Province: _____ Health Card Number (PHN): _____	Preferred Communication Method: (specify - i.e. home phone, text): Email Address: ☐ Work ☐ Personal
Phone #: ☐ Primary Home: ☐ Mobile contact: ☐ Workplace:		
Place of Employment/School:	Gender: ☐ Male ☐ Female ☐ Other ☐ Unknown	
Alternate Contact: _____ Relationship: _____ Alt. Contact phone: _____	Address Type: ☐ No fixed ☐ Postal Address ☐ Primary Home ☐ Temporary ☐ Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home): Address at time of infection if not the same:	

B) INVESTIGATION INFORMATION

LHN ->SUBJECT SUMMARY-> RESPIRATORY & DIRECT CONTACT ENCOUNTER GROUP-> CREATE INVESTIGATION

Disease Summary Classification: CASE:	**Date**	**Classification: CONTACT:**	**Date**	**LAB TEST INFORMATION:**
☐ Confirmed	YYYY / MMM / DD	☐ *Contact*	*YYYY / MMM / DD*	*Date specimen collected:*
☐ Does Not Meet Case	YYYY / MMM / DD	☐ *Not a Contact*	*YYYY / MMM / DD*	*YYYY / MMM / DD*
☐ Person Under Investigation	YYYY / MMM / DD	☐ *Person Under Investigation*	*YYYY / MMM / DD*	☐ *Blood* ☐ *Other* ☐ *CSF* ☐ *Joint fluid* ☐ *Pericardial fluid*
☐ Probable	YYYY / MMM / DD			

Disposition:

FOLLOW UP:

☐ In progress	YYYY / MM / DD	☐ Complete	YYYY / MM / DD
☐ Incomplete - Declined	YYYY / MM / DD	☐ Not required	YYYY / MM / DD
☐ Incomplete – Lost contact	YYYY / MM / DD	☐ Referred – Out of province (specify where)	YYYY / MM / DD
☐ Incomplete – Unable to locate	YYYY / MM / DD		

REPORTING NOTIFICATION Name of Attending Physician or Nurse:	Location:
Provider's Phone number:	Date Received (Public Health): YYYY / MMM / DD

Type of Reporting Source: ☐ Health Care Facility ☐ Lab Report ☐ Nurse Practitioner ☐ Physician
☐ Other_____

C) DISEASE EVENT HISTORY

LHN-> INVESTIGATION->DISEASE SUMMARY (UPDATE)->DISEASE EVENT HISTORY

Site / Presentation: ☐ Meningitis ☐ Sepsis ☐ Unknown

Meningococcal Disease (invasive) Data Collection Worksheet

Please complete **all** sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

Meningococcal Disease (invasive) Data Collection Worksheet

Please complete **all** sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

D) SIGNS & SYMPTOMS *(Bold text = part of case definition)*

LHN-> INVESTIGATION-> SIGNS & SYMPTOMS

Description	No	Yes – Date of onset	Description	No	Yes - Date of onset
Arthritis - septic		YYYY / MMM / DD	Neurologic - delerium		YYYY / MMM / DD
Bruising - ecchymoses		YYYY / MMM / DD	Pain - photophobia (sensitivity to light)		YYYY / MMM / DD
Cellulitis - orbital		YYYY / MMM / DD	Prostration		YYYY / MMM / DD
Coma		YYYY / MMM / DD	**Purpura fulminans (coagulation of small blood vessels)**		YYYY / MMM / DD
Fever		YYYY / MMM / DD	Rash - maculopapular		YYYY / MMM / DD
Headache		YYYY / MMM / DD	Rash - petechial		YYYY / MMM / DD
Meningitis		YYYY / MMM / DD	**Sepsis (e.g. bacteremia, septicemia, etc.)**		YYYY / MMM / DD
Nausea		YYYY / MMM / DD	**Shock**		YYYY / MMM / DD
Neck stiffness (nuchal rigidity)		YYYY / MMM / DD			YYYY / MMM / DD
Other s/s					

E) INCUBATION AND COMMUNICABILITY

LHN-> INVESTIGATION->INCUBATION & COMMUNICABILITY

Incubation for Case (period for acquisition):
Earliest Possible Exposure Date: YYYY / MM / DD **Latest Possible Exposure Date**: YYYY / MM / DD

Exposure Calculation details:

Communicability for Case (period for transmission):
Earliest Possible Communicability Date: YYYY / MM / DD **Latest Possible Communicability Date**: YYYY / MM / DD

Communicability Calculation Details:

F) RISK FACTORS (RF followed by + impact the Immunization Forecaster)

LHN-> SUBJECT->RISK FACTORS

DESCRIPTION	Yes Start Date	N, NA, U	Add'l Info
Chronic Medical Condition - Cochlear Implant +			
Chronic Medical Condition Congenital or Acquired, or Functional Asplenia +			
Contact At risk population (international travellers or immigrants) (i.e. risk areas)			
Contact - IMD Case: serogroup A, Y, or W-135 +	YYYY / MM/DD		
Contact - IMD Case: serogroup B +	YYYY / MM/DD		
Contact - IMD Case: serogroup C +	YYYY / MM/DD		
Contact to a known case (Add'l Info)	YYYY / MM/DD		
Immunocompromised – Acquired Complement Deficiency +			
Immunocompromised – Congenital immunodeficiency +			
Immunocompromised - Related to disease or treatment (Add'l Info)			
Immunocompromised - Transplant Candidate or Recipient - Solid Organ/Tissue +			
Occupation - Health care worker - IOM Risk Factor	TE		
Occupation - Child care worker	TE		
Behaviour - Sharing personal items (cigarettes, water bottles, etc)	TE		
Setting - Crowded living conditions (>1 person per room excluding bathrooms)	TE		
Special Population – Attends childcare	TE		
Special Population - Attends school	TE		
Special Population - Lives in a communal setting	TE		

Meningococcal Disease (invasive) Data Collection Worksheet

Please complete **all** sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

DESCRIPTION	Yes Start Date	N, NA, U	Add'l Info
Special Population - Post secondary education institution	TE		
Travel: Outside of Canada (Add'l Info)	YYYY / MM/DD AE		
Travel Outside of Saskatchewan, but within Canada (Add'l Info)	YYYY / MM/DD AE		
Other risk factor (Add'l Info)			

G) COMPLICATIONS

LHN-> INVESTIGATION->COMPLICATIONS

Description	Yes Date of onset	Description	Yes Date of onset
Disseminated intravascular coagulation (DIC)	YYYY / MMM / DD	Gangrene	YYYY / MMM / DD
Other complications			

H) IMMUNIZATION HISTORY INTERPRETATION SUMMARY

LHN -> INVESTIGATION-> IMMUNIZATION HISTORY INTERPRETATION SUMMARY

Interpretation Date: YYYY / MM / DD **serotype: _____**

Interpretation of Disease Immunity: ☐ IOM - Fully immunized (for age) ☐ IOM - Partially immunized

☐ IOM – Unimmunized ☐ IOM - Unclear immunization history **Valid doses received**: _____ **Doses needed**: _____

Reason:

☐ Previous disease ☐ Previous responder/Previous history of immunity ☐ Date Of Birth

☐ IOM – Interpretation of history by investigator

I) TREATMENT

LHN-> INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

Medication ***(Panorama = Other Meds)*** **:** _____

Prescribed by:_____ Started on: YYYY / MMM / DD

J) INTERVENTIONS

INVESTIGATION->TREATMENT & INTERVENTIONS->INTERVENTION SUMMARY

Intervention Type and Sub Type:

Assessment: Investigator name
☐ Assessed for contacts YYYY / MM / DD

Immunization: Investigator name
☐ Eligible Immunization recommended YYYY / MM / DD
☐ Disease-specific immunization recommended YYYY / MM / DD
☐ Disease-specific immunization given YYYY / MM / DD

Communication:
☐ Other communication (see Investigator Notes) YYYY / MM / DD
Investigator name
☐ Letter (See Document Management) YYYY / MM / DD
Investigator name

Immunoprophylaxis
☐ Immunoprophylaxis (Contacts only)

General: Investigator name
☐ Disease-Info/Prev-Control YYYY/ MM / DD
☐ Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/ MM / DD

Isolation:
☐ Facility isolation Investigator name YYYY / MM / DD
☐ Home isolation Investigator name YYYY / MM / DD

Education/counselling:
☐ Prevention/Control measures YYYY / MM / DD
☐ Disease information provided YYYY / MM / DD
Investigator name

Testing:
☐ Lab testing recommended YYYY / MM / DD
Investigator name

Exclusion: Investigator name
☐ Daycare YYYY / MM / DD ☐ Preschool YYYY / MM / DD
☐ School YYYY / MM / DD ☐ Work YYYY / MM / DD

Referral:
☐ Consultation with MHO ☐ Primary Care Provider

Other Investigation Findings:
☐ Investigator notes ☐ Document Management

Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

Meningococcal Disease (invasive) Data Collection Worksheet

Please complete **all** sections.

Panorama Client ID: ___________
Panorama Investigation ID: ___________

YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

K) OUTCOMES LHN-> INVESTIGATION-> OUTCOMES

☐ Not yet recovered/recovering YYYY / MM / DD ☐ ICU/intensive medical care YYYY / MM / DD ☐ Hospitalization YYYY / MM / DD
☐ Recovered YYYY / MM / DD ☐ Intubation /ventilation YYYY / MM / DD ☐ Unknown YYYY / MM / DD
☐ Fatal YYYY / MM / DD ☐ Other __________________YYYY / MM / DD

Cause of Death: (if Fatal was selected) ____________________________

L) Acquisition Event LHN-> INVESTIGATION-> EXPOSURE SUMMARY-> ACQUISITION EVENT SUMMARY -> QUICK ENTRY
Acquisition Event ID:_________

Exposure Name: ____
Acquisition Start YYYY / MM / DD to **Acquisition End:** YYYY / MM / DD
Location Name: ____
Setting Type
☐ Travel ☐ Health care setting ☐ Public facilities ☐ Recreational facilities ☐ Most likely source

M) Transmission Events LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> QUICK ENTRY

Transmission Event ID	Exposure Name	Setting type (Consider the following settings for TE; if >1 select "multiple settings" in Panorama)	Date/Time	# of contacts
		☐Congregate/Communal living ☐Health Care setting ☐Type of community contact ☐ Household Exposure ☐Public facilities (daycare, school, etc)	YYYY / MM / DD to YYYY / MM / DD	
		☐Congregate/Communal living ☐Health Care setting ☐Type of community contact ☐ Household Exposure ☐Public facilities (daycare, school, etc)	YYYY / MM / DD to YYYY / MM / DD	
		☐Congregate/Communal living ☐Health Care setting ☐Type of community contact ☐ Household Exposure ☐Public facilities (daycare, school, etc)	YYYY / MM / DD to YYYY / MM / DD	
		☐Congregate/Communal living ☐Health Care setting ☐Type of community contact ☐ Household Exposure ☐Public facilities (daycare, school, etc)	YYYY / MM / DD to YYYY / MM / DD	
	Meningococcal Contacts – Inv ID# _____	☐Multiple Settings	YYYY / MM / DD to YYYY / MM / DD	

N) TOTAL NUMBER OF CONTACTS
LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> TE HYPERLINK -> UNKNOWN/ANONYMOUS CONTACTS

Anonymous contacts:________ (total number of individuals [including groups that 1:1 follow-up is not required or is not feasible])

Initial Report completed by:		**Date initial report completed:** YYYY / MMM / DD

Meningococcal Disease - invasive
Attachment – Meningococcal Chemoprophylaxis Guidelines

Chemoprophylaxis* for Close Contacts of Individuals with Meningococcal Infection		
Drug* **	**Dosage****	**Comments**
Rifampin	**Adults:** ▪ 600 mg orally every 12 hours for 4 doses **Children ≥ 1 month of age (up to 60 kg):** ▪ 10 mg/kg (maximum 600 mg) orally every 12 hours for 4 doses **Infants < 1 month of age:** ▪ 5 mg/kg per dose orally every 12 hours for 4 doses	Should not be used in pregnancy - Ceftriaxone is a safer alternative. Urine and tears may be stained red. Advise against wearing of soft contact lenses as they can also be stained. Can reduce effectiveness of oral contraceptives. Advise use of alternative/ additional contraceptive measures. Refer to Rifampin Chemoprophylaxis Dosage Guide for *Neisseria meningitidis* for information on dosing.
Ceftriaxone	**Adults and adolescents ≥ 12 years:** ▪ 250 mg IM x 1 dose **Children < 12 years:** ▪ 125 mg IM x 1 dose	Recommended drug for pregnant women. Alternative for persons who cannot tolerate oral medication. Dilute in 1% lidocaine to reduce pain at injection site.
Ciprofloxacin	**Adults ≥ 18 years of age:** ▪ 500 mg PO x 1 dose	Contraindicated during pregnancy and lactation. Only approved for persons > 18 years of age. Not recommended for prepubertal children

*Chemoprophylaxis should be offered to all persons having close contact with an IMD case during the infectious period (the 7 days before onset of symptoms in the case to 24 hours after onset of effective treatment) regardless of their immunization status. Chemoprophylaxis is unlikely to be of benefit if given > 10 days after the most recent exposure to an infectious case.
If antibiotics such as penicillin, which do not reliably eliminate nasopharyngeal carriage, have been used for treatment, the index case should also receive antibiotics that clear nasal carriage before discharge.

**PO, orally; IM, intramuscularly.
*** See Appendix F - Patient Information Sheets for medication fact sheets.

(Source: Public Health Agency of Canada, 2005)

Meningococcal Disease – invasive
Attachment - Rifampin Chemoprophylaxis Dosage Guide for *Neisseria meningitidis*

Please see the following page for the Rifampin Chemoprophylaxis Dosage Guide for *Neisseria meningitidis*.

Rifampin Chemoprophylaxis Dosage Guide for *Neisseria meningitidis*

Dosage Guide based on the noted weight in kg below. Calculate dose based on exact weight. Maximum dose 600 mg.																
Weight in kg ***Dosage by age***	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60** Max or adult dose
<1 mo of age *5 mg/kg/dose (25 mg/ml suspension)* 1 Dose PO q 12 h x 4 doses	1.0 ml	1.2 ml	1.4 ml	1.6 ml	1.8 ml	2.0 ml	3.0 ml	4.0 ml								
>1 mo of age *10 mg/kg/dose (max dose 600 mg)* *1 Dose PO q 12 h x 4 doses*	2.0 ml	2.4 ml	2.8 ml	3.2 ml	3.6 ml	4.0 ml	6.0 ml	8.0 ml	10.0 ml	12.0 ml	14.0 ml	16.0 ml	18.0 ml	20.0 ml	22.0 ml	24.0 ml

Recommendations

1. Use the appropriate weight-specific dose noted in the first column in the chart above for infants and children.
2. Rifampin Pediatric Suspension should be prepared by a pharmacist as follows:
   - **Add contents of 3 (300mg) caps or 6 (150 mg caps) of Ripampin to 36 mls of simple syrup to yield a 25 mg/ml suspension.**
   - **SHAKE WELL.**
3. Store prepared suspension and simple syrup at room temperature because of their tendency to crystallize if refrigerated.
4. Discard prepared suspension after treatment course is completed. Preparation expires after 28 days.
5. As much as possible, use only one preparation form per client (i.e., capsule(s) only, or suspension only).
6. Give client a Rifampin information sheet. See Appendix F - Patient Information Sheets - Rifampin.

Note:

- Rifampin is contraindicated in pregnancy. Discuss Ceftriaxone dose with MHO.
- If necessary, discuss alternative treatments with MHO for non-pregnant adults.

Meningococcal Disease - invasive
Attachment –Immunoprophylaxis Guidelines for Serogroup C Contacts Who Are 11 Years of Age and Older

Individuals 11 years of age and older who are contacts to serogroup C can receive either Men-C-C or Men-C-ACYW-135. Saskatchewan parameters for which vaccine to provide are outlined as follows:

Contact Group	Vaccine	Recommendation
Individuals 11 years and older with underlying risk factors (as per SIM Appendix 7.1[1])	Men-C-ACYW-135	Provide to individuals who: • have not received a previous dose of Men-C-ACYW-135 as part of their routine immunization **OR** • are due for a Men-C-ACYW-135 booster dose as per high-risk immunization schedule.[1]
	Men-C-C	Provide to high-risk individuals who: • have had a dose of Men-C-ACYW-135 **more than 4 weeks ago** **BUT** • are not yet due for their routine Men-C-ACYW-135 booster.[1]
Grade 6 students (regardless of age)	Men-C-ACYW-135	Provide to individuals who: • have not received a dose of meningococcal C-containing vaccine **in the past year** **AND** • are eligible for Men-C-ACYW-135 as part of the routine school immunization program.
	Men-C-C	If Men-C-C is provided at the time of exposure, Men-C-ACYW-135 should be provided a minimum of 4 weeks after Men-C-C to complete the routine immunization Grade 6 program.

[1] http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter7

Meningococcal Disease - invasive
Attachment –Immunoprophylaxis Guidelines for Serogroup C Contacts Who Are 11 Years of Age and Older

Contact Group	Vaccine	Recommendation
Individuals born Jan 1, 2000 or later (up to age 22)[2]	Men-C-ACYW-135	Provide to individuals who: • have not received a dose of meningococcal C-containing vaccine **in the past year** **AND** • have not received a single dose of Men-C-ACYW-135 as part of the routine school immunization program.
	Men-C-C	Provide to individuals who: • have received one dose of Men-C-ACYW-135 **AND** • it has been **more than 1 year** since their last meningococcal C-containing vaccine.
Individuals 11 years and older with no risk factors and not eligible for the Grade 6 program	Men-C-C	Provide to individuals who have not received a dose of meningococcal C-containing vaccine **in the past year.**

[2] http://www.ehealthsask.ca/services/manuals/Documents/sim-chapter5