



**GUIDELINE FOR MANAGEMENT
OF
INVASIVE GROUP A STREPTOCOCCAL DISEASE
ACROSS THE
CONTINUUM OF CARE**

**Department of Health & Community Services
Disease Control Division**

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DEFINITIONS: INVASIVE GROUP A STREPTOCOCCAL DISEASE**Table 1 Notifiable Cases**

| | |
|--|---|
| Confirmed Case* | <ul style="list-style-type: none"> Laboratory confirmation of infection with or without clinical evidence of invasive disease¹. Laboratory confirmation requires the isolation of group A streptococcus (<i>Streptococcus pyogenes</i>) from a normally sterile site². |
| Probable Case* | <ul style="list-style-type: none"> Invasive disease¹ in the absence of another identified etiology and with isolation of group A streptococcus (GAS) from a non-sterile site |
| <p>¹Clinical evidence of invasive disease may be manifested as several conditions. These include:</p> <ul style="list-style-type: none"> Streptococcal toxic shock syndrome (STSS), which is characterized by hypotension (systolic blood pressure ≤ 90 mmHg in adults or $<5^{\text{th}}$ percentile for age in children) and at least two of the following signs: <ul style="list-style-type: none"> Renal impairment (creatinine level ≥ 177 $\mu\text{mol/L}$ for adults) Coagulopathy (platelet counts $\leq 100,000$ mm^3 or disseminated intravascular coagulation) Liver function abnormality (SGOT [AST], SGPT [ALT]³ or total bilirubin ≥ 2 x upper limit of normal) Adult respiratory distress syndrome (ARDS) Generalized erythematous macular rash that may desquamate; Soft-tissue necrosis, including necrotizing fasciitis, myositis or gangrene; Meningitis; or A combination of the above <p>²A normally sterile site is defined as blood, CSF, pleural fluid, peritoneal fluid, pericardial fluid, deep tissue specimen taken during surgery (e.g., muscle collected during debridement for necrotizing fasciitis), bone or joint fluid. It does not include middle ear or superficial wound aspirates</p> <p>³SGOT=serum glutamic oxaloacetic transaminase; AST=aspartate aminotransferase; SGPT=serum glutamate pyruvate transaminase; ALT=alanine aminotransferase</p> | |

***Confirmed cases are notifiable at the national level. Confirmed and probable cases are notifiable to the Province.**

Table 2 Definition of Cases

| | |
|------------------------|---|
| Sporadic Case | A single case of invasive GAS disease occurring in a community where there is no evidence of an epidemiologic link ⁴ (by person, place or time) to another case |
| Index Case | The first case identified in an organization or community based outbreak. Identifying the index case in an outbreak is important for the characterization and matching of GAS isolate strains. |
| Subsequent case | A case with onset of illness occurring within 21 days and caused by the same strain as another case (including sporadic or index cases) and with whom an epidemiologic ⁴ link can be established. Most subsequent cases in the community will occur within 7 days of another case. |

| | |
|--|---|
| | |
| Severe case | Case of STSS, soft-tissue necrosis (including necrotizing fasciitis, myositis or gangrene), meningitis, GAS pneumonia, other life-threatening conditions or a confirmed case resulting in death. |
| GAS Pneumonia Case | Pneumonia with isolation of GAS from a sterile site, or from a bronchoalveolar lavage when no other cause has been identified. Public health follow up as for other invasive GAS disease. It is not nationally notifiable. It is provincially notifiable. |
| ⁴ An epidemiologic link can be established when a person has one or both of the following in common with a confirmed case: <ul style="list-style-type: none"> • contact with a common, specific individual (including confirmed or probable cases); • presence in the same location (e.g. school, long term care facility [LTCF], child care centre) at or around the same time | |

Table 3 Definition of Close Contacts

| Type of Contact |
|--|
| Household contact of a case who have spent at least 4 hours/day on average in the previous 7 days or 20 hours/week with the case |
| Non-household persons who share the same bed with the case or had sexual relations with the case |
| Persons who have had direct mucous membrane contact with the oral or nasal secretions of a case (e.g. mouth-to-mouth resuscitation, open mouth kissing) or unprotected direct contact with an open skin lesion of the case |
| Injection drug users who have shared needles with the case |

Routine Practices – Routine practices are infection prevention and control practices for use in the routine care of a patient and are dependent on the task being performed and the health care setting. Routine practices include:

- hand hygiene before and after patient contact
- gown, gloves and mask use when exposure to the excretions or secretions of another person is anticipated
- cleaning of patient care equipment and the patient’s environment on a regular basis

Droplet transmission occurs when droplets containing microorganisms generated from an infected person are spread to another person during coughing, sneezing, and during the performance of intubation and bronchoscopy. The droplets are expelled up to two meters through the air and are deposited on the nasal or oral mucosa of the new host.

Contact transmission includes direct contact and indirect contact. Direct contact occurs when the transfer of microorganisms results from direct physical contact between an infected or colonized individual and a susceptible host. Indirect contact involves the passive transfer of microorganisms to a susceptible host via an intermediate object such as contaminated hands that are not washed between patients, contaminated instruments or other inanimate objects.

PURPOSE

This guideline has been developed to assist in the investigation and management of invasive Group A Streptococcal disease in the Province of Newfoundland Labrador. It will include strategies for case and contact management using the Public Health Agency of Canada (2006) guidelines.

BACKGROUND

Group A streptococci (*Streptococcus pyogenes*) are bacteria commonly found in the throat or on the skin. The vast majority of Group A Streptococci (GAS) infections are relatively mild illnesses, such as strep throat and impetigo. Occasionally, these bacteria can cause much more severe and sometimes life-threatening infections in which the bacteria invade parts of the body such as the blood, deep muscle and fat tissue, or the lungs. The most severe cases of GAS include streptococcal toxic shock syndrome (STSS), soft tissue necrosis (including necrotizing fasciitis, myositis or gangrene), meningitis, and GAS pneumonia. Invasive GAS can occur with both systemic and focal (throat, skin, lung) infections. Onset is often abrupt and the progression of the disease is rapid with fever, chills, malaise, and prostration. Prompt diagnosis and treatment is critical and contact tracing is essential to the prevention of secondary cases.

EPIDEMIOLOGY**Occurrence**

Since the 1980s there has been a worldwide resurgence of GAS infection as well as an apparent increase in virulence. The rate of invasive disease has increased in recent decades to more than 3 per 100,000 persons per year, and the case-fatality rate remains approximately 15%. In Canada invasive GAS became nationally notifiable in January 2000. On average, 938 cases are reported annually in Canada. In Newfoundland Labrador 20 cases of invasive GAS have been reported since 2000. The highest reported incidence rates occurred among adults ≥ 60 years of age, followed by children < 1 year of age and children 1 to 4 years of age.

Transmission is primarily by large droplet contact of the oral or nasal mucous membranes with infectious respiratory secretions or with exudates from wounds or skin lesions, or by direct or indirect contact of non-intact skin with exudates from skin or wounds or infectious respiratory secretions.

Incubation period for GAS infection has not been determined. In one study the median interval between the first and second case was 4.5 days (range, 0-30 days) and a median interval between any 2 subsequent cases of 2 days (range, 0-11 days). The incubation period for non-invasive GAS infection varies according to the clinical syndrome, usually 1 to 3 days.

Period of Communicability is from the onset of symptoms until 24 hours of effective antibiotic treatment has been completed.

Diagnosis is based upon the case definitions.

MANAGEMENT OF INVASIVE GROUP A STREPTOCOCCUS DISEASE

Case Management

Emergency care

- Invasive GAS disease is a medical emergency and requires prompt assessment, rapid diagnosis and initiation of appropriate therapy. The treatment is not within the scope of this guideline.
- Interview the case or proxy to determine close contacts

Infection Control

- Cases presenting with symptoms of invasive GAS should be managed on Droplet Precautions and Contact Precautions until 24 hours after initiation of effective antimicrobial therapy or an alternate diagnosis has been made.
- Droplet Precautions include:
 - Accommodation – a private room with handwashing and toilet facilities
 - A procedure/surgical mask and eye protection – this should be worn when providing care within 2 meters of the patient
 - Patient and family teaching regarding the disease and the precautions
 - Visitor information regarding the disease
- Contact Precautions include:
 - Hand hygiene before and after patient contact
 - Gown and glove use for direct patient care
 - Single patient care equipment
 - Enhanced environmental cleaning

Additional information on Contact and Droplet Precautions is available in the guideline on Routine Practices and Additional Precautions for preventing transmission of infection in health care (Health Canada, 1999).

- Information on the disease and the transmission should be provided to the patient and family (Appendix 1 – fact sheet)

Contact Management

Contact tracing is a Public Health role and will be coordinated by the Medical Officer of Health. The Communicable Disease Control Nurse will collaborate with the Infection Control Practitioner and the Community Health Nurse to generate a close contact list (Appendix 4).

Close Contacts

Close contacts must be identified as soon as possible

- given information on the signs and symptoms of GAS

- advised to seek medical attention immediately should they develop febrile illness or any other clinical manifestations of GAS infection within 30 days of diagnosis in the index case

Chemoprophylaxis

- Chemoprophylaxis should only be offered
 - to close contacts of a confirmed **severe case**, that is a case of STSS, soft-tissue necrosis (including necrotizing fasciitis, myositis or gangrene), meningitis, GAS pneumonia, other life threatening conditions or a confirmed case resulting in death;
 - if the close contacts have been exposed to the case during the period from 7 days prior to onset of symptoms in the case to 24 hours after the case's initiation of antimicrobial therapy
- Chemoprophylaxis of close contacts should be administered as soon as possible and preferably within 24 hours of case identification but is still recommended for up to 7 days after the last contact with an infectious case
 - The choice of prophylactic agent will be at the advice of the MOH or an Infectious Disease Specialist (Appendix 6)

Long Term Care Facilities

When a confirmed case of invasive GAS disease occurs in a LTC facility surveillance should be initiated to determine if any further cases have occurred in the previous 4 to 6 weeks. If an excess of GAS infections are identified, advice on management should be discussed with the MOH.

Child Care Centers

If one severe case of GAS occurs in a child attending a child care center the following action is recommended:

- Inform parents and/or guardians of attendees of the case
- Provide information on the signs and symptoms of invasive GAS disease
- Advise them to seek immediate medical attention should their child develop febrile illness or any other clinical manifestation of GAS within the following 30 days
- Provide chemoprophylaxis for all children and staff in family or home day care settings
- Chemoprophylaxis is generally not warranted in group or institutional child care centers and pre-schools,

Health Care Workers

An occupational exposure of a health care worker (HCW) is defined as secretions from the nose, mouth, wound or skin infection of the infected case comes in contact with the mucous membranes or non-intact skin of the HCW from within 7 days before the onset of GAS until 24 hours of effective antibiotic therapy.

Recommendations for the HCW with an occupational exposure include:

- Give information on the signs and symptoms of GAS

- Advise to seek care immediately if symptoms of GAS disease develop in the 21 days after exposure
- Work restrictions are not required
- Consider chemoprophylaxis if the case has had a **severe GAS infection**

OUTBREAK MANAGEMENT

Regardless of the type of outbreak; contact tracing, identification of close contact, provision of information on the disease and prevention strategies, and chemoprophylaxis to close contacts of severe cases are key strategies that must receive immediate attention. The impetus for action for organization-based outbreaks or clusters is defined in Table 4.

Table 4. Impetus for action for organization-based outbreaks or clusters

| | |
|-------------------------|---|
| Long-term care facility | An incidence rate of culture-confirmed invasive GAS infections of >1 per 100 residents per month or at least two cases of culture-confirmed invasive GAS infection in 1 month in facilities with fewer than 200 residents or an incidence rate of suggested invasive or non-invasive GAS infections of >4 per 100 residents per month |
| Child care centre | One severe case of invasive GAS disease in a child attending a child care centre. |
| Hospital | One or more linked invasive or non-invasive GAS cases in either patients or staff occurring within 1 month of an invasive case. |

When an outbreak of invasive GAS is suspected, an outbreak management team (OMT) should be assembled to determine and coordinate the course of action necessary. The management of an outbreak is a regional responsibility unless more than one region is involved or the scope of outbreak requires additional resources from the provincial or other health authorities. The functions of the OMT include:

- Reviewing the cases and confirming the diagnosis
- Search for additional cases and asymptomatic carriers
- Developing a communication strategy
- Determining prevention and control measures
- Assigning responsibilities

Communication Strategy

It is important to have a communication strategy prepared in advance in order to address issues that arise among those concerned with control measures. There should be one spokesperson responsible for communicating with the media within each organization.

Sporadic Case Communication

There is usually no need to inform the general public of a sporadic case even if there is a fatality. However, the following documents may assist with providing consistent information to the staff and public about the disease:

- Invasive Group A Streptococcal Disease Fact Sheet (Appendix 1)
- Non invasive GAS Syndromes – Fact Sheet for Health Professionals (Appendix 2)
- Invasive GAS Syndromes – Fact Sheet for Health Professionals (Appendix 3)
- Letter to Parents of Close Contacts – Appendix 7

Outbreak communication

The communication of clear and prompt policy decisions to the affected community, the wider public and to partner agencies is a key component of outbreak management. The information should be cascaded as widely as possible by various routes including the local news media and through a hot line. The establishment of a hotline can serve as an important means of providing consistent advice and reassurance to the public and reduce the burden of calls to hospitals and public health units. Essential elements of a communication strategy include:

- Wide consultation, including public health representatives, clinicians and laboratory personnel, before any decision are made
- Clearly designated responsibilities

PREVENTION

The spread of all types of group A streptococcal infections may be reduce by good hand hygiene, especially after coughing and sneezing, and before preparing foods and before eating. Other preventive measures include:

- Keep wounds clean
- Watch wounds for possible signs of infection which include redness, swelling and pain at the wound site
- Seek medical attention for potentially infected wounds
- Individuals with open lesions that cannot be kept covered should be excluded from contact with others until the wound has healed or drainage can be contained
- Individuals who have open skin lesions should be excluded from common whirlpools or saunas
- Persons with skin lesions should not share equipment that is in contact with the skin
- Provide routine childhood varicella vaccination

PROCEDURE FOR REPORTING

Invasive Group A streptococcal disease is reportable to the regional Medical Officer of Health (MOH), to the Provincial Department of Health and Community Services and to the Public Health Agency of Canada (PHAC). When a clinical case is suspected or a case is laboratory confirmed the following procedure must be followed for reporting purposes:

- Physicians, laboratories and communicable disease control nurses (CDCNs), and infection control practitioners (ICPs) must **report immediately** any suspect or confirmed cases of invasive GAS to the Regional Medical Officer of Health (RMOH) - Appendix 5
- RMOH office will notify local physicians, nurse practitioners, environmental health officers, community health nurses, CDCNs, and ICPs, in the particular region as required for follow-up and case investigation
- RMOH reports to provincial office as per list A
- The CDCN is responsible for ensuring the data is entered into the database
- Information required for the case report is included in Appendix 8
- Provincial Disease Control
 - reports the identified case to other health regions
 - reports the identified case to Public Health Agency of Canada
 - provides an analysis of the case/s with reports in the Communicable Disease Report (CDR)

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APPENDICES**Invasive Group A Streptococcal Disease Fact Sheet****What is group A streptococcus?**

Group A streptococci (GAS) are bacteria commonly found in the throat and on the skin. The vast majority of GAS infections are relatively mild illnesses, such as strep throat and impetigo. Occasionally, these bacteria can invade the blood, deep muscle, fat tissue or the lungs and cause severe and even life threatening diseases.

What are the invasive group A streptococcal diseases?

Two of the most severe forms of invasive GAS disease are called necrotizing fasciitis (infection of muscle and fat tissue) and streptococcal toxic shock syndrome; a rapidly progressing infection causing low blood pressure/shock and injury to organs such as the kidneys, liver and lungs.

How common is invasive group A streptococcal disease?

There was an average of 877 cases per year reported in Canada from 2000 to 2004. In 2004 Newfoundland & Labrador reported 4 cases of invasive GAS.

Why does invasive group A streptococcal disease occur?

Invasive GAS infections occur when the bacteria get past the defenses of the person who is infected. This may occur when a person has sores or other breaks in the skin that allow the bacteria to get into the tissue, or when the person's ability to fight off the infection is decreased because of chronic illness or an illness that affects the immune system. Also, some virulent strains of GAS are more likely to cause severe disease than others.

Who is most at risk of getting invasive group A streptococcal disease?

Few people who come in contact will develop invasive GAS disease. Most people will have a throat or skin infection, and some may have no symptoms at all. Persons with skin lesions (such as cuts, chicken pox, and surgical wounds), the elderly, and adults with a history of alcohol abuse or injection drug use have a higher risk for the disease.

Can invasive group A streptococcal disease be treated?

Prompt medical attention and antibiotics are recommended for the treatment of invasive GAS. Severe cases may require supportive care in the intensive care unit. Treatment of necrotizing fasciitis usually requires surgical interventions.

Should contact of individuals with invasive group A streptococcal disease be tested and treated?

The risk of secondary cases of invasive GAS disease is very small. The medical officer of health will provide recommendations for the follow-up of contacts.

What can be done to prevent invasive group A streptococcal infections?

The spread of all types of GAS infections may be reduced by good hand hygiene practices. All wounds should be kept clean. Wounds should be watched for possible signs of infection which include redness, swelling and pain at the wound site. If these signs occur, especially in a person with a fever, consult a doctor immediately. Routine childhood immunization with varicella (chicken pox) vaccine is also recommended.

Non invasive GAS Syndromes - Fact Sheet for Health Professionals

Group A streptococcus bacterium (*Streptococcus pyogenes*) is responsible for most cases of streptococcal illness. Some of the syndromes associated with group A streptococcus include:

- Streptococcal pharyngitis or “strep throat”
- Scarlet fever, most often preceded by a sore throat
- Skin infections (impetigo, cellulitis/erysipelas)
- Focal infections, limited to a particular body site, e.g., pneumonia, septic arthritis
- Bacteremia, sepsis streptococcal toxic shock syndrome
- Necrotizing fasciitis
- The complications of streptococcal infections, acute rheumatic fever and post streptococcal glomerulonephritis

Table 5 Overview of non invasive Group A Streptococcal Syndromes

| Syndrome | Signs & symptoms | Transmission | Diagnosis & Treatment |
|----------------------|--|---|---|
| Strep Throat | <ul style="list-style-type: none"> ▪ Red, sore throat with white patches on tonsils ▪ Swollen lymph nodes in neck ▪ Fever, and headache ▪ Nausea, vomiting and abdominal pain are more common in children. | <ul style="list-style-type: none"> ▪ Direct, close contact with respiratory droplets (through coughing or sneezing) ▪ Casual contact rarely results in transmission ▪ Incubation period is 2-4 days ▪ No longer infectious within 24 hours after treatment begins | <ul style="list-style-type: none"> ▪ Throat swab ▪ Antibiotic treatment |
| Scarlet Fever | <ul style="list-style-type: none"> ▪ Occurs most often in association with a sore throat ▪ Fever ▪ Rash – characteristic rash that is fine, red, rough-textured (sand paper) and blanches on pressure ▪ Bright red tongue “strawberry tongue” ▪ Skin often peels after recovery, usually on tips of fingers and toes ▪ | <ul style="list-style-type: none"> ▪ As above | <ul style="list-style-type: none"> ▪ As above |

| Syndrome | Signs & symptoms | Transmission | Diagnosis & Treatment |
|---|---|---|--|
| <p>Superficial skin infections</p> <ul style="list-style-type: none"> ▪ Impetigo | <ul style="list-style-type: none"> ▪ Most common in children 2-6 years ▪ Pimple like lesions surrounded by reddened skin ▪ Lesions fill with pus, then break down over 4-6 days and form a thick crust ▪ Often associated with insect bites, cuts and other forms of trauma to the skin ▪ Itching is common ▪ Scratching may spread the lesions | <ul style="list-style-type: none"> ▪ Spread by direct contact with the lesions or with nasal carriers ▪ Incubation period is 1-3 days | <ul style="list-style-type: none"> ▪ Clinical presentation ▪ Topical or oral antibiotics are usually prescribed |
| <ul style="list-style-type: none"> ▪ Cellulitis/Erysipelas | <ul style="list-style-type: none"> ▪ Inflammation of skin and underlying tissues ▪ Skin is painful, red and tender ▪ Fever and chills ▪ Lymph nodes may be swollen ▪ Skin may blister and scab over ▪ The rash which may occur on face, arms or legs and has raised borders | <ul style="list-style-type: none"> ▪ Cellulitis begins with a minor trauma | <ul style="list-style-type: none"> ▪ Culture of skin or blood may reveal organism ▪ Treatment depends on the severity ▪ Usually oral or I/V antibiotics |

Invasive GAS Syndromes - Fact Sheet for Health Professionals

Severe invasive Group A Streptococcal Disease

Some strains of group A Streptococci cause severe disease. Those at greatest risk include children with chicken pox, persons with suppressed immune systems, burn victims, elderly persons with cellulitis, diabetes, blood vessel disease, or cancer; and person taking steroid treatments or chemotherapy. Severe disease may occur in persons with no known risk factors. Early recognition and treatment are critical. These syndromes include:

1. Bacteremia: An invasion of bacteria into the bloodstream. Once in the bloodstream, the infection can spread to other parts of body, producing abscesses, peritonitis, endocarditis, or meningitis. Bacteremia can lead to sepsis or shock, causing a systemic illness with high fever, blood coagulation and eventually organ failure.

2. Focal infections with or without bacteremia: GAS can cause focal infections, which are limited to a particular site. These include pneumonia, abscess of tissues near the tonsils, joint infections (septic arthritis), osteomyelitis, peritonitis, and meningitis. Bacteremia can also be associated with these infections, but it is not always present.

3. Streptococcal toxic shock syndrome (STSS): STSS begins with flu-like symptoms (fever, chills, and muscle aches). Pain is common, usually in an extremity, sometimes in the abdomen or chest. The condition progresses to confusion and coma. Blood pressure drops, kidneys malfunction, and soft tissues may be infected. The source of streptococcus, when identified, is most often the site of a minor wound or bruise.

4. Necrotizing fasciitis: Flesh eating disease is the common name for necrotizing fasciitis, an infection that works its way rapidly through the layers of tissue (the fascia) that surround muscles. It destroys tissue and can cause death within 12 to 24 hours. It is estimated that there are between 90 and 200 cases per year in Canada, and about 20 – 30 % are fatal.

- Signs & Symptoms
 - High fever and appears very ill quickly
 - Red, **severely** painful swelling that feels hot and spreads rapidly
 - Swelling may start at the site of a minor injury, such as a small cut or bruise or there may be no obvious source of infection
 - Skin may become purplish
- Diagnosis
 - Clinical presentation
 - Blood cultures and cultures of tissue
- Treatment
 - Early medical treatment is critical
 - Treatment often includes antibiotics, fluid resuscitation, along with aggressive surgical debridement

Invasive GAS Disease Contact List

Index Case: _____ Diagnosis: _____ Date: _____ Provincial ID# _____

| NameofContacts | AddressofContact | Phone# | Age | Relationship to Index Case | Weight/Kgs | Chemoprophylaxis | | Dose Required | Given/ Refused |
|----------------|------------------|--------|-----|----------------------------------|------------|------------------|----|------------------|-------------------|
| | | | | | | Yes | No | | |
| | | | | | | | | | |
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| | | | | | | | | | |

Send completed form to CDCN/MOH: MOH: _____ Date: _____

Investigation & Reporting Sporadic Cases of Invasive GAS

The attending physician notifies the MOH of the case by phone

MOH/Designate

- Liaises with CDCN re contact tracing initiatives
- Recommends chemoprophylaxis, if indicated
- Writes prescriptions
- Determines /initiates communication strategy
- Reviews local/provincial epidemiology
- Facilitates debriefing

CDCN

- Obtains details of case
- Initiates list of close contacts
- Notifies Manager /Provincial PH
- Assigns Community Health Nurse (CHN) for contact tracing
- Liaise with MOH re chemoprophylaxis
- Provides CHN with resource materials
- Arranges chemoprophylaxis
 - Informs pharmacy
 - Sends contact list
 - Gets prescriptions
 - Faxes prescriptions to pharmacy
- Enters case in database
- Arranges debriefing with MOH

ICP

- Collaborates with CDCN re case details and identification of close contacts
- Initiates/discontinues Isolation Precautions
- Provides support/information to patient/family members/visitors
- Provides information to staff
- Liases with Occupational Health re staff contacts (if indicated)
- Attends debriefing session

CHN

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Interviews index case or proxy ▪ Identifies close contacts ▪ Completes and confirms close contact list ▪ Reviews list with CDCN ▪ Obtains documentation including name, age, weight, address, phone number, drug allergies, concurrent medications and medical history of close contacts requiring chemoprophylaxis ▪ Records data on contact list ▪ Returns list to CDCN | <ul style="list-style-type: none"> ▪ Provides chemoprophylaxis (if required) ▪ Obtains consent <ul style="list-style-type: none"> ▪ Provides oral and written information on medications ▪ Advises medical attention if symptomatic <ul style="list-style-type: none"> ▪ Provides fact sheet ▪ Provides counseling and support ▪ Provides follow-up to case and contacts (as feasible) |
|---|---|

Invasive Group A Streptococcus Chemoprophylaxis

The Medical Officer of Health will give guidance on the antibiotic of choice. The Compendium of Pharmaceuticals and Specialties (CPS) **must** be reviewed for detailed product information.

Table 6 Recommended chemoprophylaxis regimes for close contacts

| Drug | Dosage | Comments |
|--|---|---|
| First-generation cephalosporins; cephalexin, cephadroxil, cephadrine | <ul style="list-style-type: none"> ▪ First line ▪ Children and adults: ▪ 25 to 50 mg/kg daily, to a maximum of 1 g/day in 2 to 4 divided doses x 10 days | <ul style="list-style-type: none"> • Recommended for pregnant and lactating women • Should be used with caution in patients with allergy to penicillin • Use of cephalosporins (e.g., aminoglycosides, mancomycin) may increase the risk of cephalosporin-induced nephrotoxicity |
| Erythromycin | <ul style="list-style-type: none"> ▪ Second line | <ul style="list-style-type: none"> • Erythromycin estolate is contraindicated in persons with pre-existing liver disease or dysfunction and during pregnancy • Sensitivity testing is recommended in areas where macrolide resistance is unknown or known to be > 10% |
| Clarithromycin | Second line | <ul style="list-style-type: none"> • Contraindicated in pregnancy • Sensitivity testing is recommended in areas where macrolide resistance is unknown or known to be >10% |
| Clindamycin | Second line | <ul style="list-style-type: none"> • Alternative for persons who are unable to tolerate beta-lactam antibiotics |



Letter to Parents of Close Contacts

Child Care Center

Date:

Dear Parent,

A child in your child's Child Care Center has been diagnosed with invasive group A streptococcal disease. Close contacts such as children attending family or home day care settings may be at risk of infection.

Your child has been identified as a close contact and will be offered a special antibiotic, which will reduce the risk of becoming ill. The drug does not provide 100% protection, so please read the attached fact sheet and if your child should develop any signs of infection take him or her to your doctor immediately. The signs can include fever, sore throat, and flu like symptoms.

Should you have further questions please contact your public health nurse at

_____.

Sincerely,

Medical Officer of Health

Invasive Group A Streptococcal Disease Report Form

Unique ID: _____

Invasive Group A Streptococcal Disease (*Streptococcus pyogenes*) Case Report Form

Date of Initial Report: ___/___/___ (dd/mm/yyyy) Date of Update: ___/___/___ (dd/mm/yyyy)
 Person Reporting: _____ Phone: () ___ - ___ ext: ___
 Jurisdiction Reporting: _____

PATIENT INFORMATION

Last name: _____ First name: _____
 Birthdate (dd/mm/yyyy): ___/___/___ or Age: _____ years or _____ months
 Sex: Male Female Unknown
 Ethnicity: Non-Aboriginal First Nations Inuit Metis Other: _____ Unknown

CLINICAL PRESENTATION and UNDERLYING CONDITIONS/ILLNESSES

Date of onset of symptoms (dd/mm/yyyy): ___/___/___
 Admitted to hospital? Yes → if yes, Admission date (dd/mm/yyyy): ___/___/___
 No Discharge date (dd/mm/yyyy): ___/___/___ or Not discharged
 Unknown
 Admitted to ICU? Yes No Unknown
 Outcome: Survived (recovered) Died → if yes, Date of death (dd/mm/yyyy): ___/___/___
 Survived with long-term sequelae, please specify: _____

| Syndrome | Yes | No | Unk |
|-----------------------|-----|----|-----|
| Meningitis | | | |
| Septicaemia | | | |
| Bacteremia | | | |
| Cellulitis | | | |
| Pneumonia | | | |
| Necrotizing fasciitis | | | |
| Myositis | | | |
| Gangrene | | | |
| Toxic shock syndrome | | | |
| Septic arthritis | | | |
| Other, specify: _____ | | | |

| Underlying Conditions and/or Risk factors | Yes | No | Unk |
|--|-----|----|-----|
| Alcohol abuse | | | |
| Homelessness | | | |
| Injection drug use | | | |
| Chronic lung disease | | | |
| Diabetes | | | |
| Immunodeficiency disease | | | |
| Immunosuppressive therapy | | | |
| Post-partum | | | |
| Surgery/surgical wound | | | |
| Trauma or burn | | | |
| Skin infection or dermatological condition | | | |
| Varicella (if yes, date: ___/___/___) dd/mm/yyyy | | | |
| Contact with person with iGAS | | | |
| Other, specify: _____ | | | |
| Other, specify: _____ | | | |

LABORATORY INFORMATION

Specimen source: Blood CSF Joint fluid Tissue (please specify): _____
 Other, specify: _____
 Serotyping: Emm type: _____ T type: _____ Serum opacity factor (SOF): _____

