

# **GROUP A STREPTOCOCCAL DISEASE SURVEILLANCE PROTOCOL FOR ONTARIO HOSPITALS**

Developed by the Ontario Hospital Association and  
the Ontario Medical Association  
Joint Communicable Diseases Surveillance Protocols Committee  
in collaboration with the Ministry of Health and Long-Term Care

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# **Group A Streptococcal (GAS) Disease Surveillance Protocol For Ontario Hospitals**

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This protocol was developed jointly by the Ontario Hospital Association and the Ontario Medical Association to meet the requirements of the *Public Hospitals Act* 1990, Revised Statutes of Ontario, Regulation 965.

The protocol is based on clinical knowledge, current data and experience, and a desire to ensure maximum cost effectiveness of programs, while protecting health care workers and patients. It is intended as a minimum, practical standard for Ontario hospitals; however, hospitals may adopt additional strategies when indicated by local conditions.

# Members of the Joint OHA/OMA Communicable Diseases Surveillance Protocol Committee

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# Rationale For Group A Streptococcal (GAS) Disease Surveillance Protocol

Group A Streptococcus (GAS) or *Streptococcus pyogenes* is a bacterium commonly found in the throat and on the skin. Group A streptococci can be present in the throat or on the skin and cause no symptoms, but they may also cause disease that ranges from mild to severe and can be life-threatening.

GAS is an important cause of morbidity and mortality. The most frequently encountered illnesses are streptococcal sore throat (strep throat) and skin infections (impetigo or pyoderma). GAS can also cause scarlet fever, rheumatic fever, glomerulonephritis and severe invasive diseases including necrotizing fasciitis and toxic shock syndrome. Since the 1980s there has been a resurgence of invasive GAS infection. This may be due to a highly virulent clone of a specific strain or host factors that determine the severity of infection.

Few people who come in contact with a virulent strain of GAS will develop invasive GAS disease; some may develop sore throat or localized skin infection, and most remain asymptomatic. Although healthy people can get invasive GAS disease, the elderly and those with chronic illnesses such as HIV, cancer, diabetes, and kidney disease requiring dialysis and those on steroid medications are at higher risk. In addition, breaks in the skin, such as cuts, wounds, or chickenpox may provide an opportunity for GAS to enter the body.

Group A streptococci are spread by direct, indirect or droplet contact with secretions from the nose and throat of infected persons or by contact with infected wounds or skin lesions. The risk of spreading the infection is highest when a person is ill, e.g. with “strep throat” or an infected wound. Persons who carry the bacteria but have no symptoms are generally considered to be less contagious. Treatment of infected persons with an effective antibiotic for 24 hours or longer generally eliminates their ability to spread the bacteria.

The incubation period is short, usually from 1 to 3 days, rarely longer. The period of communicability is from 7 days before the onset of GAS disease, until 24 hours after the start of effective antibiotic treatment.

Nosocomial transmission to patients and Health Care Workers (HCW) can occur by large respiratory droplets or by direct contact with infected patients or carriers. Casual contact rarely leads to disease. HCWs, including surgeons, obstetricians, anaesthetists and nurses, have been epidemiologically and microbiologically linked to patient cases in several outbreaks. These HCWs were typically asymptomatic. The pharynx, vagina,

rectum, or skin of the HCWs was found to be the site(s) of colonization or infection. The reservoir of the infection for some HCWs has been household contacts.

Improving infection prevention and control practices and identifying and treating HCWs who are symptomatic may prevent the transmission of GAS in hospitals. HCWs can reduce the risk of infection by the consistent use of Routine Practices, e.g. wearing a surgical mask and eye protection or face shield when performing a procedure where contamination with droplets from the oropharynx is possible.

The routine use of antimicrobial prophylaxis for HCWs who are close contacts of GAS-associated necrotizing fasciitis, toxic shock syndrome, meningitis, pneumonia, or any other form of invasive GAS is controversial and not generally recommended.

**If fluid from the nose, mouth or wound of the infected case did not contact a person's mucous membranes or non-intact skin, that person was not exposed and does not need prophylactic antibiotics.**

**Antimicrobial prophylaxis is not indicated for most HCWs who have been in contact with an infected patient.**

Antimicrobial prophylaxis may be considered on a case-by-case basis for HCWs who have been exposed, as defined in this protocol. Precise indications for and the optimal course of prophylaxis after exposure has yet to be determined.

**It is expected that all HCWs routinely use Routine Practices as defined by the Provincial Infectious Diseases Advisory Committee (PIDAC) in all direct patient care activities, including wearing a surgical mask and eye protection or face shield when contamination with respiratory droplets is likely.**

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## I. Purpose

The purpose of this protocol is to provide direction to hospitals for the prevention of transmission of Group A Streptococcus (GAS) among health care workers (HCW) and patients.

## II. Applicability

This protocol applies to all persons carrying on activities in the hospital who provide direct patient care, including physicians, nurses, contract workers, students and post-graduate medical trainees. This protocol does not apply to patients or residents of the facility, or to visitors.

When training students, the hospital must inform the school that the school is responsible for ensuring that their students are managed according to this protocol.

**This protocol is for the use of the Occupational Health Service (OHS) in hospitals.**

## III. Pre-placement

There is no need for pre-placement screening for GAS.

## IV. Continuing Surveillance

There is no need for routine screening for GAS of any person carrying on activities in the hospital.

### **Screening HCWs Linked to Nosocomial GAS Cases:**

In collaboration with the Infection Prevention and Control service, the OHS should ensure that specimens for culture (throat, rectum, vagina and skin lesions) are obtained from HCWs epidemiologically linked to nosocomial GAS cases in patients, e.g. nosocomial bacteremia, surgical wound infection, postpartum endometritis, cellulitis, necrotizing fasciitis, toxic shock syndrome.

Epidemiologically linked patient and HCW isolates of GAS should be sent for bacterial typing.

**It is expected that all HCWs routinely use Routine Practices in all direct patient care activities.** Personal protective equipment (e.g., surgical mask and eye protection or face shield) should be worn for procedures where respiratory secretions may contact the mucous membranes of the HCW (e.g., suctioning) or when the HCW's skin may contact the patient's non-intact skin (i.e. gloves).

## V. Exposure

Exposure is defined as direct, indirect or droplet contact of oral or nasal mucous membranes with respiratory secretions or direct contact of non-intact skin with wound secretions from patients with invasive GAS disease (necrotizing fasciitis, toxic shock syndrome, meningitis, pneumonia) from 7 days before the onset until 24 hours after the start of effective therapy. Treatment of the infected patient with an effective antibiotic for 24 hours generally eliminates their ability to spread the bacteria.

Antimicrobial prophylaxis is not indicated for most health care personnel who have been in contact with an infected patient.

- **If fluid from the nose, mouth or wound of the infected case did not contact a person's mucous membranes or non-intact skin, that person was not exposed and does not need preventive antibiotics.**
- If exposure as defined above has occurred, chemoprophylaxis **may** be considered on a case-by-case basis (see Appendix B).
- Use and effectiveness of prophylaxis in this situation is controversial and an optimal regimen has not been established.
- If personal protective equipment (e.g. surgical mask and eye protection or face shield) has been worn, there is no exposure.
- **If indicated, antimicrobial prophylaxis should be given as soon as possible, preferably within 24 hours.**
- **HCWs with exposure to cases of invasive GAS should be advised of the signs and symptoms of GAS disease and to seek medical attention immediately if fever or other signs or symptoms develop.**

## VI. Colonization or Infection with Group A Streptococcus

HCWs not epidemiologically linked to GAS cases who are incidentally found to be asymptomatically colonized with GAS should not be excluded from work, and should not be given prophylactic treatment with antibiotics.

HCWs who develop GAS disease, including streptococcal pharyngitis (strep throat), must be excluded from work until 24 hours after the start of effective

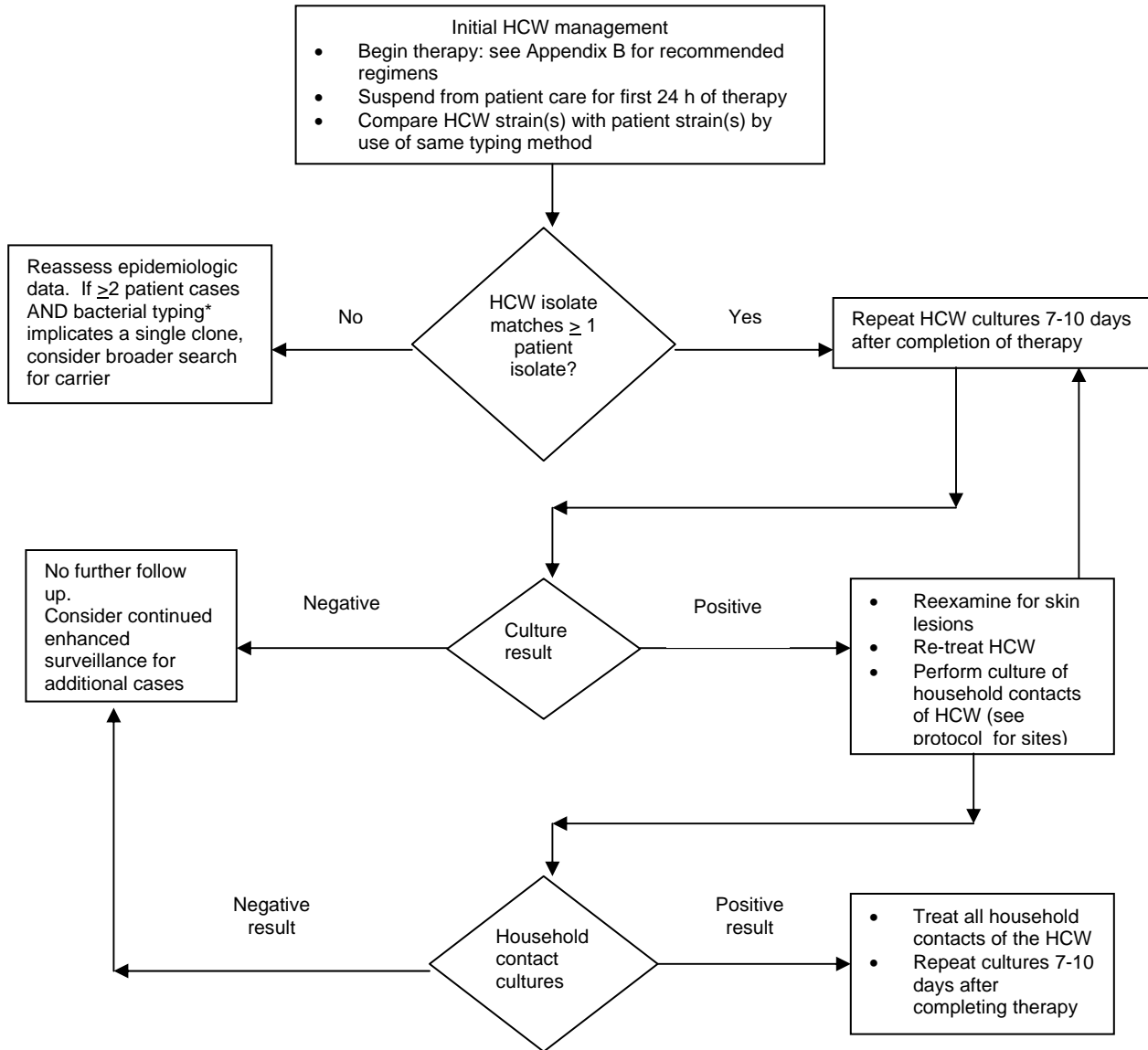
antibiotic therapy. The hospital Infection Prevention and Control service must be notified immediately.

In the case of invasive GAS disease, the local Medical Officer of Health must be notified. An occupationally acquired GAS infection is reportable to the Ministry of Labour and WSIB.

HCWs epidemiologically linked to nosocomial GAS cases(s) in patients (e.g., nosocomial bacteremia, surgical wound infection, postpartum endometritis, cellulitis, necrotizing fasciitis, toxic shock syndrome) who are culture positive for Group A Streptococcus must be excluded from patient care duties until 24 hours after the start of treatment with effective antibiotics. (Refer to Appendix A for the recommended management for HCWs colonized with GAS. Refer to Appendix B for treatment options.)

## Appendix A

### Recommended Management for Health Care Workers (HCW) Epidemiologically Linked to Patient Cases and Colonized with Group A Streptococcus



\*bacterial typing: pulsed-field gel electrophoresis (PFGE), emm typing

Reference: Prevention of Group A Streptococcal Infections, CDC, CID 35:957 Oct 2002.

## Appendix B

### Suggested regimens for chemoprophylaxis and for decolonization therapy of Health Care Workers (HCW) carrying outbreak strains of Group A Streptococcus

Drug	Dosage(s)	Comment(s)
BPG* plus rifampin**	BPG: 1,200,000 U im in 1 dose, plus rifampin: 300 mg po twice daily for 4 days	Availability of BPG may be limited.
Penicillin V plus rifampin**	Pen V 500 mg 4 times daily for 10 days, plus rifampin 300 mg po twice daily for the last 4 days <sup>11</sup>	
Cephalexin	250 mg, po 4 times daily for 10 days <sup>12</sup>	Preferred for pregnant or lactating health care workers.
Clindamycin***	300 mg, po 3 times daily for 10 days	Preferred for health care workers who are rectal carriers of GAS.
Azithromycin***	500 mg po once daily for 5 days	Alternate for penicillin allergic HCW. The safety of azithromycin in human pregnancy has not been established.

\*BPG: benzathine penicillin G – only available through the special access program of the Therapeutic Products Directorate.

\*\*Not recommended for pregnant women (rifampin is teratogenic in laboratory animals). Because the reliability of oral contraceptives may be affected by rifampin therapy, alternative contraceptive measures should be considered while rifampin is being administered.

\*\*\*Clindamycin or azithromycin is acceptable for persons allergic to penicillin. If administered to health care workers implicated in an outbreak or to their colonized household contacts, susceptibility testing should be performed.

Adapted from: Prevention of Group A Streptococcal Infections, CDC, CID 35: 954 October 2002 and references 9, 11 and 12. The regimen of penicillin combined with rifampin is preferred for colonized or infected HCWs epidemiologically linked to nosocomial cases, as it has better efficacy data than the regimen of cephalexin alone.

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