

Alaska Public Health Advisory

Invasive Group A Streptococcal Infections Caused by a Novel *emm* Type

November 29, 2016

Summary

The Alaska Section of Epidemiology is working in collaboration with the Centers for Disease Control and Prevention's Arctic Investigations Program and the Municipality of Anchorage on characterizing and responding to an increased number of invasive Group A Streptococcus (GAS, also known as *Streptococcus pyogenes*) infections identified through ongoing surveillance and that are caused by a novel genotype, *emm*-type 26 (*emm*-26). During February through November, 2016, there have been 28 confirmed cases of *emm*-26 invasive infections identified -- 10 in the Fairbanks area and 18 in Anchorage. Fourteen of these cases have occurred during October and November and most of the recent Anchorage cases have occurred in homeless men with a history of alcohol abuse. Health care providers should be alert to signs and symptoms of invasive GAS infections to ensure prompt care and treatment of infections that may rapidly progress.

Group A Strep Background:

- Group A streptococcus (GAS) is a bacterium that most often causes asymptomatic colonization of the oropharynx and skin.
- Persons can acquire GAS through contact with respiratory secretions or the skin of colonized persons.
- Over 220 molecular subtypes of GAS have been identified based on variations in the *emm* gene that codes for the cell surface M virulence protein.
- GAS can cause illnesses such as pharyngitis or skin infections, but more severe and invasive disease can occur such as sepsis, necrotizing fasciitis, and streptococcal toxic shock syndrome (STSS).
- Colonized persons at highest risk for developing invasive disease include:
 - Persons older than 65 years,
 - Persons who are immunocompromised either by disease or medications, and
 - Persons with certain underlying medical conditions, e.g., diabetes, cancer, or heart disease (1).
- Early identification and treatment of GAS infections can reduce the risk of complications.

Standard Surveillance for Group A Strep in Alaska:

- Invasive GAS infections are conditions reportable to the Alaska Section of Epidemiology.
- On average, 60-90 sporadic cases of invasive GAS of various molecular subtypes are reported annually. See http://www.epi.alaska.gov/bulletins/docs/b2016_17.pdf
- Over the past 5 years, about 10% of patients with invasive GAS have died. So far in 2016, 4 of 28 patients with *emm*-26 invasive GAS have died.
- The CDC's Anchorage-based Arctic Investigations Program (CDC-AIP) routinely reviews the medical records of invasive GAS cases to obtain demographic and risk factor data, and characterizes the *emm*-type of bacteria isolated from invasive cases.

Current Outbreak:

- From February through July, there were 10 cases of invasive disease in the Fairbanks area. All 10 cases were *emm*-26 GAS, a genotype not previously identified in Alaska.
- From August through November, 18 cases of invasive disease caused by *emm*-26 GAS were identified in Anchorage; two additional suspected *emm*-26 cases are under investigation.

- Almost all of the patients with *emm*-26 in Anchorage have been homeless. Most of the patients in the Fairbanks area were not homeless.
- Eight patients have had necrotizing fasciitis (6 in Anchorage, 2 in Fairbanks).
- Three patients have had STSS (2 in Anchorage, 1 in Fairbanks).
- Four patients have died (2 in Fairbanks, 2 in Anchorage).
- Invasive GAS outbreaks can occur in unique settings (like nursing homes, hospitals, day care centers), as well as in communities.
- With a closed setting, such as a nursing home, patients and staff may be tested to see if they are oropharyngeal or skin carriers of the bacteria and then given antibiotics to presumptively treat infection (chemoprophylaxis) or to get rid of the bacteria (decolonization). In a community setting with an open and transient population, the value of widespread testing and chemoprophylaxis or decolonization is unclear.

Response Measures:

- The Alaska Section of Epidemiology and CDC-AIP are co-investigating this outbreak with assistance from the Municipality of Anchorage Department of Health and Human Services.
- We have consulted with GAS subject matter experts at CDC in Atlanta.
- We have communicated with Alaska health care providers to maintain an elevated index of suspicion for invasive GAS infections, especially in persons presenting with skin and soft tissues infections, because early appropriate therapy can reduce GAS-associated morbidity and mortality.
- We are following up with patients who have the disease to characterize the epidemiology of the outbreak.
- We have communicated with homeless service providers in the Anchorage area to:
 - Raise GAS awareness among homeless people and those who provide services,
 - Promote personal hygiene and prompt wound care, and
 - Increase surveillance for skin or other infections and to refer those patients promptly for clinical evaluation.

Recommendations:

- Clinicians should consider chemoprophylaxis for high-risk household contacts of persons diagnosed with invasive GAS regardless of *emm*-type (1).
- Infection control recommendations for *emm*-26 are the same as for other invasive GAS infections -- use droplet precautions for serious invasive disease, and add contact precautions if there is a wound infection with drainage not contained by the dressing.
- The best way to prevent spread is to follow good personal hygiene practices, including frequently washing hands with soap and water, covering coughs and sneezes, and keeping wounds clean and dry.
- Persons with a skin or other possible GAS infection should seek medical care promptly.
- Contact the Alaska Section of Epidemiology at 907-269-8000 with questions, or visit <http://dhss.alaska.gov/dph/Epi/>
- Additional recommendations may be forthcoming as more information becomes available.

References:

1. CDC GAS Prevention Guidelines: <http://cid.oxfordjournals.org/content/35/8/950.long>
2. IDSA GAS Pharyngitis Treatment Guidelines: http://www.idsociety.org/uploadedFiles/IDSA/Guidelines-Patient_Care/PDF_Library/2012%20Strep%20Guideline.pdf