COLORADO
Department of Public Health & Environment

HEALTH ALERT NETWORK BROADCAST
MESSAGE ID: 12152022 13:30
FROM: CO-CDPHE
SUBJECT: HAN Alert – Increase in Invasive Group A Streptococcus and other Invasive Bacterial Infections in Children
RECIPIENTS: Local Public Health Agencies / IPs / Clinical Labs / EDs / ID Physicians / Coroners
RECIPIENT INSTRUCTIONS: Local Public Health Agencies – please forward to healthcare providers

HEALTH ALERT | Increase in invasive group A streptococcus and other invasive bacterial infections in children | December 15, 2022

Health care providers: Please distribute widely in your office

This information is for the public health and health care community. Do not post this document on a public web or social media site.

Key points

- The Colorado Department of Public Health and Environment (CDPHE) is investigating an increase in reports of severe or invasive Gram positive infections among children, including group A *Streptococcus* (GAS), *Streptococcus pneumoniae*, and *Staphylococcus aureus* among children.
    - There have been 11 cases of severe or invasive GAS infections in children younger than 18 years old since November 1, 2022 hospitalized in the Denver metro-area. For comparison, there are typically 1-2 cases of invasive GAS reported per month.
    - A similar increase in invasive GAS infections has also been noted elsewhere in the United States and United Kingdom.
- Clinicians should be on alert for the potential of secondary bacterial infections following respiratory viral infections, which may manifest as worsening symptoms following an apparent recovery.
    - Clinicians should treat GAS pharyngitis to prevent severe complications of infection and further transmission.
    - Children and adults with strep pharyngitis should be excluded from child care and schools for at least 12 hours after the first dose of antibiotic treatment.
- Clinicians should ensure all patients are up to date on all recommended vaccinations, especially pneumococcal disease and for conditions which might predispose them to invasive bacterial infections, including influenza, COVID-19, and chickenpox.
- Clinicians and laboratories who don't already routinely participate in submitting GAS isolates to CDPHE State Lab should consult with public health about sending isolates from clusters or particularly aggressive cases of GAS to the CDC *Streptococcus* Laboratory via CDPHE. Certain jurisdictions in the Denver metro-area are also required to submit isolates of *S. pneumoniae* for further testing, and all laboratories are required to submit isolates of Vancomycin-resistant S aureus (VRSA) for further testing.

Background information

The Colorado Department of Public Health and Environment (CDPHE) is investigating an increase in reports of severe or invasive Gram positive bacterial infections among children. There have been 11 cases of severe or invasive group A *Streptococcus* (GAS) infections in children younger than 18 years old since November 1, 2022 hospitalized in the Denver metro-area. For comparison, there are typically 1-2 cases of invasive GAS reported per month. Increases in invasive GAS infections have also been reported elsewhere in the United States and in the United Kingdom. Increases in other invasive bacterial infections including those due to *Streptococcus pneumoniae* and *Staphylococcus aureus* have also been noted in Colorado.

The causes of this increase in serious bacterial infections are still unknown. There may be an immunity gap related to a lack of exposures to these pathogens in the past several years due to COVID-19 prevention measures. Additionally, the recent increase in respiratory virus rates may increase the risk of bacterial coinfection or superinfection, leading to more severe disease.

Group A Streptococcus

GAS is a common pathogen and can cause a range of infections. These include common, mild conditions, including pharyngitis, tonsillitis, cellulitis, impetigo, and scarlet fever, as well as uncommon, severe infections including streptococcal toxic shock syndrome, severe pneumonia, sepsis, and necrotizing fasciitis. Sequelae of infection include rheumatic fever and post streptococcal glomerulonephritis.

Strep pharyngitis is usually transmitted through contact with droplets and respiratory secretions from a person with infection, such as through coughing and sneezing. People are no longer contagious within 12 hours of beginning appropriate antimicrobial therapy. Communicability of people who are not treated gradually diminishes over a period of weeks. As many as 25% of asymptomatic school children and a small number of adults carry the bacteria that cause strep throat in their nose and throat and are not ill. The risk of transmission from someone who is not sick but carrying the bacteria is low. Complications among children with strep pharyngitis who are treated with antibiotics are rare. Less than 1% have suppurative complications, 3/100 000 have invasive infections, and 0.08–0.15/100 000 have acute rheumatic fever.

Reporting

Most serious infections caused by GAS, pneumococcus, are reportable, as are select strains of *S. aureus*:

- Detection of Group A streptococci from a normally sterile site is reportable in the five-county Denver metro-area (Adams, Arapahoe, Denver, Douglas, and Jefferson counties). Streptococcal toxic shock syndrome is also reportable.
- Detection of *Streptococcus pneumoniae* in a normally sterile body site is reportable.
- Detection of vancomycin resistant or vancomycin intermediate *Staphylococcus aureus* is reportable, and isolate submission is required. Additionally, clusters and outbreaks of all communicable diseases must be reported, regardless of etiologic agent. More detailed information about how to report a disease is found here: https://cdphe.colorado.gov/report-a-disease

Recommendations

- Clinicians should be aware of the possible increase in severe or invasive Gram positive infections among children.
    - GAS infections among children include common, mild conditions, including pharyngitis, tonsillitis, cellulitis, impetigo, and scarlet fever, as well as uncommon, severe infections including streptococcal toxic shock syndrome, severe pneumonia, sepsis, and necrotizing fasciitis. Clinicians should treat GAS pharyngitis to prevent serious complications, including suppurative complications, invasive infections, and acute rheumatic fever, as well as further spread. Early therapy is critical for improved outcomes, especially with serious diseases.
    - Pneumococcal infection ranges from invasive disease (i.e., infection of normally sterile sites including bacteremia without focus of infection, pneumonia with bacteremia, septic arthritis, osteomyelitis, and meningitis) to non-invasive infections such as pneumonia without bacteremia, otitis media, and sinusitis.
    - Serious staph infections can result in pneumonia, sepsis, endocarditis, or osteomyelitis. Staph can also result in three toxin-mediated syndromes; toxic shock syndrome, scalded skin syndrome, and gastrointestinal illness.
- Clinicians are recommended to be alert for the potential for secondary infections following respiratory viral infections, which may manifest as worsening symptoms following an apparent recovery. Clinicians should treat GAS pharyngitis to prevent sequelae of infection and further spread. Early therapy is critical for improved outcomes, especially with serious diseases.
- People with GAS pharyngitis should be treated with an appropriate antibiotic for a duration likely to eradicate the organism from the pharynx. There is currently a national shortage of amoxicillin, and clinicians may need to consider alternative antimicrobial agents. AAP recommendations for the national shortage of amoxicillin suspensions can be found at: https://www.aap.org/en/pages/amoxicillin-shortage-antibiotic-options-for-common-pediatric-conditions/
    - Children and adults with strep pharyngitis should be excluded from childcare and schools for at least 12 hours after the first dose of antibiotic treatment. Clinicians should consult the “Infectious Diseases in Child Care and School Settings” for additional school and childcare specific guidance: https://cdphe.colorado.gov/communicable-diseases/infectious-disease-guidelines-schools-childcare
- Clinicians and laboratories who don’t already routinely participate in submitting GAS isolates to CDPHE laboratory should consult with public health about sending isolates from clusters or particularly aggressive cases of GAS to the CDC Streptococcus Laboratory via CDPHE.
- Clinicians should ensure all patients are up to date on all recommended vaccinations, especially pneumococcal disease, as well as vaccinations for conditions which might predispose individuals to invasive bacterial infections, including influenza, COVID-19, and chickenpox.

More information

CDC: Possible Increase in Invasive Group A Strep Infections, 2022:
https://www.cdc.gov/groupastrep/igas-infections-investigation.html

Children's Hospital Colorado: Bug Watch:
https://www.childrenscolorado.org/4ae3bc/globalassets/healthcare-professionals/bug-watch.pdf

Clinical Guidance
CDC: Group A Streptococcal (GAS) Disease: For Clinicians:
https://www.cdc.gov/groupastrep/diseases-hcp/index.html
IDSA: Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7108032/
CDC: Prevention of Invasive Group A Streptococcal Disease among Household Contacts of Case Patients and among Postpartum and Postsurgical Patients: Recommendations from Centers for Disease Control and Prevention https://academic.oup.com/cid/article/35/8/950/330363?login=false
AAP: Amoxicillin Shortage: Antibiotic Options for Common Pediatric Conditions:
https://www.aap.org/en/pages/amoxicillin-shortage-antibiotic-options-for-common-pediatric-conditions/

CDC: Pneumococcal Disease Recommendations for Healthcare Providers:
https://www.cdc.gov/vaccines/vpd/pneumo/hcp/recommendations.html
CDC: Diagnosis and Management of Streptococcus Pneumoniae:
https://www.cdc.gov/pneumococcal/clinicians/diagnosis-medical-mgmt.html
CDC: Pink Book's chapter on pneumococcal disease:
https://www.cdc.gov/vaccines/pubs/pinkbook/pneumo.html (Some vaccine recommendations have changed since publication of the latest edition in 2021)

CDC: *Staphylococcus aureus* in Healthcare Settings: https://www.cdc.gov/hai/organisms/staph.html
CDC: MRSA: https://www.cdc.gov/mrsa/index.html

Vaccine Guidance
CDC: Immunization Schedules: https://www.cdc.gov/vaccines/schedules/index.html
CDC: PneumoRecs VaxAdvisor: https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html

CDC: Testing Request Form for GAS Isolates:
https://www.cdc.gov/streplab/testing-request/other-streptococci-form.html
CDPHE: Report a Disease: https://cdphe.colorado.gov/report-a-disease
CDPHE: Infectious Diseases in Child Care and School Settings:
https://cdphe.colorado.gov/communicable-diseases/infectious-disease-guidelines-schools-childcare

Keeping up to date

CDC: Register for CDC HANs: https://emergency.cdc.gov/han/

CDC: Sign up for COCA calls and emails: https://emergency.cdc.gov/coca/calls/index.asp

CDPHE: Register for Colorado HANs: https://cdphe.colorado.gov/health-alert-network

ECHO Colorado and CDPHE: Sign up for monthly Colorado Updates in Public Health webinar:

https://echocolorado.org/echo/covid-19/

CDPHE Disease Reporting Line: 303-692-2700 or 303-370-9395 (after hours)