

# Section 18: *Streptococcus agalactiae*, Invasive (Group B Streptococcus)

## BASIC EPIDEMIOLOGY

### Infectious Agent

*Streptococcus agalactiae* (group B streptococcus / GBS) is a beta hemolytic gram positive cocci.

### Transmission

Transmission of group B streptococcus from mother to infant occurs just before or during delivery. After delivery, infants are occasionally infected via person-to-person transmission in the nursery. In adults, GBS can be acquired through person-to-person transmission from healthy carriers (colonized but asymptomatic) in the community.

### Incubation Period

The incubation period for early onset GBS disease in neonates is <7 days. The incubation period for late onset GBS disease in infants, children and adults is unknown.

### Communicability

An estimated 10 - 30% of women are carriers. GBS colonization occurs primarily in the gastrointestinal and genital tracts. Colonization is most often asymptomatic and does not require treatment. About half the infants born to colonized mothers are also colonized on the skin and mucosal surfaces as a result of passage through the birth canal or as a result of GBS ascending into the amniotic fluid. The majority of colonized infants, 98%, are asymptomatic

### Clinical Illness

In neonates two syndromes exist: early-onset (<7 days old) and late-onset (7-90 days old). Both syndromes can include sepsis, pneumonia and meningitis. Pregnancy-related infections include sepsis, amnionitis, urinary tract infection, and stillbirth. In adults, pneumonia, bacteremia, meningitis, joint infections or soft tissue infections can occur.

### Severity

The Centers for Disease Control and Prevention estimates that 0.53 deaths per 100,000 people occur annually. GBS is the leading cause of neonatal sepsis in the US. The case fatality rate in term infants is 1 – 3% and as high as 20% in pre-term infants. The case fatality rate in adults is 8%.

## DEFINITIONS

### Clinical Case Definition

Group B *Streptococcus* is the most common cause of life-threatening infections, sepsis (blood infection) and meningitis (infection of the fluid and lining around the brain) in newborns. In infants, group B *Streptococcus* is characterized by sepsis, respiratory distress, apnea, shock, pneumonia and meningitis. GBS is acquired in utero or during delivery, and occurs more frequently in low birth weight infants.

Group B *Streptococcus*, invasive disease can present in a number of different ways in adults. The most common problems in adults are bloodstream infections, pneumonia, skin and soft-tissue infections, and bone and joint infections. Rarely, group B streptococcus can cause meningitis in adults.

### Laboratory Confirmation

Confirmatory laboratory criteria

- Isolation of group B streptococci (*Streptococcus agalactiae*) species by a culture from a normally sterile site
- Isolation of group B streptococci (*Streptococcus agalactiae*) species by a culture from placenta or amniotic fluid

**Normally sterile site:** Invasive diseases typically cause significant morbidity and mortality.

Normally sterile sites include:

- blood (excluding cord blood)
- cerebrospinal fluid (CSF)
- pericardial fluid
- pleural fluid
- peritoneal fluid
- bone or bone marrow

The following are also considered sterile sites when certain other criteria are met:

- joint fluid when the joint surface is intact (no abscess or significant break in the skin)
- internal body sites (brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, lymph node or ovary) when the specimen is collected aseptically during a surgical procedure

**Normally sterile sites do *not* include:**

- Anatomical areas of the body that normally harbor either resident or transient flora (bacteria) including mucous membranes (throat, vagina), sputum, and skin, or abscesses or localized soft tissue infections.

### Case Classifications

- **Confirmed:** A case that is laboratory confirmed
- **Probable:** No probable case definition

## CASE INVESTIGATION

### Case Investigation

Local and regional health departments should investigate all reports of suspected group B streptococcus.

### Case Investigation Checklist

- Confirm laboratory results meet the case definition.
  - See the Sterile Site and Invasive Disease Determination Flowchart for confirming a specimen meets the criteria for sterile site.

- Review medical records or speak to an infection preventionist or physician to verify case definition, identify underlying health conditions and describe course of illness.
  - The Streptococcal Investigation Form may be used to record information collected during the investigation. This form is not required to be sent to DSHS.
- All confirmed case investigations must be entered and submitted for notification in the NEDSS Base System (NBS). Please refer to the *NBS Data Entry Guidelines* for disease specific entry rules.

### Control Measures

- Provide education on invasive streptococcus as needed.
- Recommend that anyone experiencing symptoms be evaluated by a healthcare provider.
- Promote routine hand washing with soap and warm water.
- Pregnant women should undergo vaginal-rectal screening for GBS colonization at 35-37 weeks.
- Use standard precautions. In the case of a nursery outbreak, use contact precautions.
- Antibiotic prophylaxis during non-C-section labor is recommended if the mother:
  - Has a positive GBS screen between weeks 35 and 37
  - Has a positive GBS urine result anytime during the current pregnancy
  - Delivered a previous baby with GBS disease
  - Develops fever ( $\geq 100.4^{\circ}\text{F}$ ) during labor
  - Has not delivered her baby within 18 hours of her water breaking
  - Goes into labor before 37 weeks and has not been tested for GBS

### Exclusion

Children with a fever from any infectious cause should be excluded from school/daycare for at least 24 hours after fever has subsided without the use of fever suppressing medications.

## MANAGING SPECIAL SITUATIONS

### Case is a Suspected Health Care-Associated (Nosocomial) Infection

If one or more nosocomial (health care-associated) cases occur in patients of the same labor and delivery facility, residential care facility, or other long-term care facility; and the cases have no other identified plausible source of infection; or if other circumstances suggest the possibility of nosocomial infection, notify Infectious Disease Control Unit (IDCU) at **(800) 252-8239 or (512) 776-7676**.

### Outbreaks

If an outbreak is suspected, notify Infectious Disease Control Unit (IDCU) at **(800) 252-8239 or (512) 776-7676**.

The local/regional health department should

- Review infection prevention practices currently in place.
- Work with the facility to ensure everyone gets hand hygiene education.
- Recommend cohorting of ill and colonized infants together and the use contact precautions in nursery settings.
- Encourage anyone with symptoms be evaluated by a healthcare provider.
- Note: Treatment of asymptomatic carriers is considered ineffective.

## REPORTING AND DATA ENTRY REQUIREMENTS

### **Provider, School & Child-Care Facilities, and General Public Reporting Requirements**

Confirmed and suspected cases of group B streptococcus should be reported within 1 week of suspicion to the local or regional health department or the Texas Department of State Health Services (DSHS), Infectious Disease Control Unit at (800) 252-8239 or (512) 512-7676.

### **Local and Regional Reporting and Follow-up Responsibilities**

Local and regional health departments should submit an NBS notification on all confirmed cases to DSHS within 30 days of receiving a report. Please refer to the *NBS Data Entry Guidelines* for disease specific entry rules. Investigations forms are not required to be submitted.

Local and regional health departments should report suspected outbreaks within 24 hours of identification to the regional DSHS office or to 512-776-7676 and submit a completed respiratory outbreak form at the conclusion of the outbreak investigation (fax a copy to the DSHS regional office and/or IDCU 512-776-7676)

## LABORATORY PROCEDURES

Testing for group B streptococcus is widely available from most private laboratories. Specimens should not be submitted to the DSHS laboratory.