

**Prenatal Screening for Group B *Streptococcus***

**(Pigmented broth, serologic or molecular testing for identification)**

**Annual Review:**

<b>Name/Title</b>	<b>Signature</b>	<b>Date</b>

**Revision History:**

<b>Revision #</b>	<b>Control #</b>	<b>Changes made to document section</b>	<b>Author</b>	<b>Date</b>

**Approval Signatures:**

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Author

\_\_\_\_\_

Print Name and Title

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Supervisor/Technical Specialist-Director

\_\_\_\_\_

Print Name and Title

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Quality Manager

\_\_\_\_\_

Print Name and Title

<b>Prenatal Screening for Group B <i>Streptococcus</i>: Pigmented broth, serologic or molecular</b>			
<b>Doc. No.:</b>	<b>Rev. No.:</b>	<b>Effective Date:</b>	<b>Page 3 of 8</b>

**Purpose/Principle:**

The purpose of this document is to provide instructions for performing prenatal screening for Group B *Streptococcus* from appropriately collected vaginal/rectal specimens using pigmented broth enrichment with serologic or molecular testing for identification if needed to detect non-pigmented strains.

**Scope:**

This document applies to laboratory assistants, technicians and technologists within the Division of Microbiology at XXXX.

**Related documents:**

1. Provider procedure for collection of specimens for Prenatal Screening for Group B *Streptococcus* - # xxxx. Note: Procedure should specify the acceptable specimen is a vaginal-rectal swab and that swabs from other sites (e.g. cervical or perianal swabs only) are not acceptable. Procedure should list acceptable type of swab and transport medium.
2. Quality Control procedure for tube and plated media - # xxxx.
3. Procedure for Group B *Streptococcus* serologic testing from broth culture - # xxxx.
4. Procedure for Group B *Streptococcus* molecular testing from broth culture - # xxxx.
5. Procedure for the identification of streptococci - # xxxx.
6. Notification procedure for positive Prenatal Screening for Group B *Streptococcus* - # xxxx.
7. Procedure for susceptibility testing of Group B *Streptococcus* - # xxxx.

**Responsibility:**

1. It is the responsibility of the technical staff of the microbiology laboratory to review and assure they are familiar with the processes outlined in this document which are within their job duties.
2. It is the responsibility of the technical specialist to keep this procedure updated and current with national standards/guidelines/recommendations.
3. It is the responsibility of the microbiology supervisor to accurately train and assess the competency of all microbiology staff involved in performing this procedure.
4. It is the responsibility of the microbiology data technologist to assure that reporting of all results is appropriate in all computer systems.
5. It is the responsibility of the technical director to approve this procedure on an annual basis.

**Definitions:**

N/A

**Equipment/Materials:**

1. Strep B Carrot Broth™ (Hardy Diagnostics, Santa Maria, CA), Granada™ Biphasic Broth (bioMérieux, Inc., Durham, NC), Northeast Laboratory GBS screening medium (Northeast Laboratory Services, Waterville, ME) or other pigmented selective enrichment and identification broth that incorporates chromogenic pigments.
2. Agar plates for subculture (e.g., tryptic soy agar with 5% defibrinated sheep blood, or equivalent)

<b>Prenatal Screening for Group B <i>Streptococcus</i>: Pigmented broth, serologic or molecular</b>			
<b>Doc. No.:</b>	<b>Rev. No.:</b>	<b>Effective Date:</b>	<b>Page 5 of 8</b>

3. Sterile loops
4. Incinerator
5. Incubator
6. Serologic instrumentation and/or reagents
7. Molecular instrumentation and/or reagents

**Quality Control:**

Follow Quality Control procedures for tube and plated media - # xxxx.

Follow Quality Control procedures for serologic testing for Group B *Streptococcus* - # xxxx.

Follow Quality Control procedures for molecular testing for Group B *Streptococcus* - # xxxx.

**Safety Precautions:**

Use standard precautions when performing this procedure.

**Procedure: (Appendix includes one-page flowchart)**

1. Remove patient specimen (swab; swabs) from transport medium. Specimens should be processed within 4 days of collection. Specimens requiring more than 24 hr of transport time should be refrigerated until received and processed by the laboratory.
2. Inoculate the swab(s) into a pigmented selective enrichment and identification broth, such as Strep B Carrot Broth™, or Granada™ Biphasic Broth, Northeast Laboratory GBS screening medium according to the manufacturers' directions for leaving the swab in or not, tightly closing the tube, etc.

<b>Prenatal Screening for Group B <i>Streptococcus</i>: Pigmented broth, serologic or molecular</b>			
<b>Doc. No.:</b>	<b>Rev. No.:</b>	<b>Effective Date:</b>	<b>Page 6 of 8</b>

3. Incubate the inoculated pigment broth for a minimum of 18-24 hours at 35-37°C in ambient air or 5% CO<sub>2</sub> or for the length of time and conditions recommended by the manufacturer.
4. If the color indicator for the presence of Group B *Streptococcus* as specified by the manufacturer is observed, report as positive for Group B *Streptococcus*.
5. If there is no color change in the pigmented selective broth, perform serologic testing or molecular testing for Group B *Streptococcus*.
6. Report as negative for Group B *Streptococcus* when no Group B *Streptococcus* has been identified by serologic testing or molecular testing.
7. If Group B *Streptococcus* is identified by the appropriate color change, serologic testing or molecular testing, report Group B *Streptococcus* positive on the report.
8. If the positive specimen is from a penicillin-allergic patient at high risk for anaphylaxis, subculture the incubated broth to a sheep blood agar plate (e.g., tryptic soy agar with 5% defibrinated sheep blood, or equivalent) and incubate for a minimum of 18-24 hours at 35-37°C in 5% CO<sub>2</sub>.
  - a. Inspect and identify colonies characteristic of Group B *Streptococcus* (i.e., gram-positive cocci, catalase negative, narrow zone of β-hemolysis or no hemolysis) using routine laboratory identification protocols. (Refer to procedure # xxxx – Procedure for the identification of streptococci).
  - b. Perform susceptibilities for clindamycin and erythromycin, including inducible clindamycin resistance, using appropriate laboratory susceptibility procedures. (Refer to protocol # xxxx – Procedure for susceptibility testing of Group B *Streptococcus*.)

<b>Prenatal Screening for Group B <i>Streptococcus</i>: Pigmented broth, serologic or molecular</b>			
<b>Doc. No.:</b>	<b>Rev. No.:</b>	<b>Effective Date:</b>	<b>Page 7 of 8</b>

**NOTE:** As molecular testing may be more sensitive than culture, on occasion subcultures of broths may not recover Group B *Streptococcus* in order to perform susceptibility testing. In this case report “No Group B *Streptococcus* recovered for the performance of susceptibility testing”. The clinician may be directed to the CDC guidelines for prophylaxis of patients colonized with Group B *Streptococcus* for which susceptibility is unknown.

**Format:**

N/A

**Reference:**

MMWR Recomm Rep. 2010 Nov 19;59(RR-10):1-36. Prevention of perinatal group B streptococcal disease--revised guidelines from CDC, 2010. Verani JR, McGee L, Schrag SJ; Division of Bacterial Diseases, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention (CDC).

Experts from the American Society for Microbiology (ASM) and the Centers for Disease Control and Prevention’s (CDC) *Streptococcus* Laboratory co-authored this document.\*

For more GBS laboratory resources, visit <http://www.cdc.gov/groupbstrep>

*\*Collaboration does not imply HHS/CDC endorsement of ASM*

**Appendix: Flow diagram for Prenatal Screening for Group B *Streptococcus*: Pigmented broth, serologic or molecular testing for identification.**

Flowchart #4: Using pigmented broth and serologic or molecular testing for identification of GBS

