PURPOSE: To screen for Group B *Streptococcus* (GBS) in vaginal/rectal specimens.

SAMPLE INFORMATION:

Type	Swab • Amie's with or without charcoal
Source	• Combined introital (vaginal and anorectal area) swab. • Vaginal swabs are not the specimen of choice but will be processed.
Stability	If the sample is received in the laboratory and processed greater than 48 hours from collection: • Add specimen quality comment: "Delayed transport may adversely affect pathogen recovery".
Storage Requirements	Room temperature
Criteria for rejection and follow up action	1. Unlabeled/mislabeled swab. 2. Specimen container label does not match patient identification on requisition. 3. Duplicate specimens obtained with same collection method within 24 hours. 4. Dry swab.

REAGENTS and/or MEDIA:

- LIM Broth (LIM), StrepB *Select* agar (GBS) and Blood agar (BA)
- Identification reagents: catalase and Strep latex test

SUPPLIES:

- Disposable inoculation needles
- Biosafety cabinet
- 35° CO_2 incubator
- 35° ambient air incubator
- Glass test tubes
- Wooden sticks
- Sterile pipettes

SPECIAL SAFETY PRECAUTIONS:

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potential infectious materials or cultures.

- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used when there is a known or potential risk of exposure of splashes.
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC).
- The use of needles, syringes and other sharp objects should be strictly limited.

All patient specimens are assumed to be potentially infectious. Universal precautions must be followed. Since viable micro-organisms are used, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

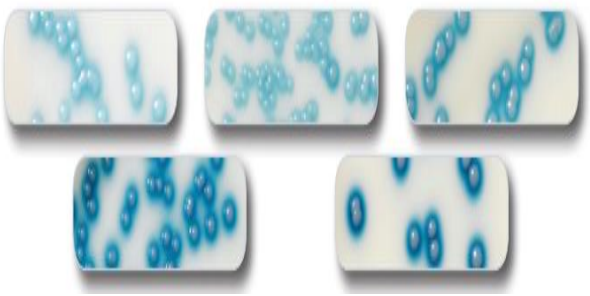
QUALITY CONTROL:

- Refer to MIC60040 – Culture Media Quality Control procedure.
- Refer to Test Manual for reagent quality control procedures.

PROCEDURE INSTRUCTIONS:

Step	Action
Processing swabs for GBS screening	
1	Place swab in LIM broth, break off leaving the swab in the broth medium. Loosely recap. Incubate broth at 35° in CO_2 incubator.
2	At 14:00, after 18 to 24 hours incubation, subculture the broth to StrepB *Select* agar: • Remove the required number of StrepB *Select* plates from the refrigerator and bring to room temperature. • Saturate a sterile swab in the broth and rotate against the wall of the tube above the liquid to remove excess inoculum. • Swab the first quadrant of the agar. • Streak for isolated growth using a disposable inoculation needle. • Streak out to cover the whole plate.
3	Incubate plate in O_2 incubator at 35° for 24 hours in the "GBS 24 hours" tray.

INTERPRETATION OF RESULTS:

Step	Action	
1	Remove culture plates after 24 hours incubation.	
2	Observe plates for blue colonies: 	
3	**If blue colonies are not seen:**	
	No blue colonies seen at 24 hours	• Record observations in the LIS. • Re-incubate plates in O_2 incubator on the "Old urine culture" shelf.
	No blue colonies seen at 48 hours	• Record observations in the LIS. • Workup complete. GBS not isolated.

4	**If blue colonies are seen:**	
	IF	**THEN**
	Blue colonies are not isolated	• Subculture blue colonies to blood agar plate. • Perform catalase test from subculture plate.
	Blue colonies are isolated	• Perform catalase test.
	IF	**THEN**
	Catalase: POSITIVE	• Record observations in LIS. • Workup complete. GBS not isolated.
	Catalase: NEGATIVE	• Record observations in LIS. • Perform Strep latex test for Group B.
	IF	**THEN**
	Strep B latex test: NEGATIVE	• Record observations in LIS. • Workup complete. GBS not isolated.
	Strep B latex test: POSITIVE	• Record observations in LIS. • GBS isolated.
	IF	**THEN**
	Group B screen is positive and clinical history does not state penicillin allergy	• Susceptibility testing not performed.
	Group B screen is positive and clinical history states penicillin allergy	• Perform susceptibility testing as per ASTM.

Please Note:

Each *Streptococcus* grouping latex test should be tested with at least one extra grouping latex suspension as a negative control.

REPORTING RESULTS:

IF	REPORT
GBS not isolated	• Report: **"No Streptococcus agalactiae (Group B) isolated"** • A copy is automatically sent to the STH Obstetrics Unit.
GBS isolated and no penicillin allergy indicated in clinical history	• Choose key 6 on STRB keypad to add isolate: **"Streptococcus agalactiae (Group B)"** • List quantitation as **"Isolated"** • The following canned culture comment will be added: **"Current guidelines suggest intrapartum GBS prophylaxis should be with penicillin (or ampicillin) IV, cefazolin if nonsevere penicillin allergy, clindamycin in severe beta-lactam allergy, or vancomycin in severe beta-lactam allergy where clindamycin tests resistant or susceptibility is unknown. A severe allergy is defined as anaphylaxis, angioedema, respiratory distress or urticaria following administration of penicillin or a cephalosporin. If patient has severe allergy and susceptibility testing to clindamycin is needed for intrapartum antibiotic prophylaxis, please contact the laboratory IMMEDIATELY (within 5 days) for susceptibility testing at 867-669-4162."** • A copy is automatically sent to the STH Obstetrics Unit.
GBS isolated and clinical history indicates penicillin allergy	• Choose key 7 on the STRB keypad to add isolate: **"Streptococcus agalactiae (Group B)"** • List quantitation as **"Isolated"** • KB susceptibility panel for GBS screen is ordered. • Report susceptibility results as per ASTM. • A copy is automatically sent to the STH Obstetrics Unit.

LIMITATIONS:

1. The selective mixture of antibiotics/antifungal agents inhibits the growth of the majority of microorganisms, with the exception of *Streptococci*, some *enterococci* and *lactobacilli*.
2. As with any chromogenic medium, it is important to streak at closely spaced intervals in order to obtain well-isolated colonies: the morphology and colour of the colonies will then be more typical.
3. If an inoculum contains a high density of *Streptococcus agalactiae*, the medium around the deposit may be coloured.
4. The colonies of some species, other than *Streptococcus agalactiae* (for example, *Streptococcus pyogenes*, *Streptococcus porcinus* and *Streptococcus gallolyticus*) may appear blue.
5. The intrinsic demands of some *Streptococci* can lead to absence or partial inhibition of their growth.

REFERENCES:

- Clinical Microbiology Procedures Handbook, 4th edition, ASM Press, 2016.
- Jorgensen J.H., Pfaller M.A., Carroll K.C., Funke G., Landry M.L., Richter S.S., Warnock D.W. 2015. Manual of Clinical Microbiology, 11th edition, ASM Press, Washington, D.C.
- StrepB Select agar package insert. 08/2009.

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0		Initial Release	L. Steven