Stool Culture

Purpose

This procedure provides instruction for Stool Culture for the Microbiology laboratory.

Principal and Clinical Significance

The best clinical predictors of positive stool culture in children are a combination of persistent diarrhea of >24 hour in duration, fever, and either blood in the stool or abdominal pain with nausea and vomiting. Many cases of diarrhea occur in children <5 years of age and are caused by pathogens that are endemic to an area, such as rotavirus, Shigella, *Giardia lamblia,* and Cryptosporidium. Since most disease is community acquired, a single stool specimen for culture obtained during the first 73 hours after admission to the hospital can be used for diagnosis for almost 98% of children with bacterial gastroenteritis.

Policy Statements

This procedure applies to Microbiologists who perform culture plate reading.

Test Code

STLC

Materials

Reagents	Supplies	Equipment	Media
• 3% hydrogen peroxide • Gram Stain reagents • Oxidase, Indole reagents • Staphaurex™ • Vitek® AST-N806, GN and NH ID cards • KB EBAC HAE NMEN disk Dispenser • STAT! EHEC Immunocard Kit – Meridian Diagnostics, Inc. • ECA-E coli 0157 Antigen Latex kit	• Campy Anaero Pack • Glass slides • Sterile Swab • Sterile Falcon tubes	• Ambient air incubator • Campy jar • Incinerator • Inoculating loop • Microscope • VITEK 2 • VITEK MS	Refer to the Sunquest specimen label for media information. The organisms requested in SDES determine appropriate media. • CNA agar (CNA) • Campylobacter blood agar (CBAP) • MacConkey agar (MAC) • MacConkey with Sorbitol (MACS) • Nutrient agar slant (NAS) • Hektoen agar (HE) • Selenite broth (SEL) • GN broth (GN) • Sheep Blood agar (SB) • Yersinia selective agar (YSA) (also referred to as CIN agar containing cefsulodin-irgasan-novobiocin.) • MacConkey agar, RT (MC25) • Yersinia selective agar, RT (Y25) • Tube biochemicals, TSI, MILS, UREA • Mueller Hinton agar

Specimen

Acceptable specimens

- Fresh random stool preferred
- Rectal swab
- Orange Para Pak® C&S (Cary-Blair preservative)

SDES codes/Specimen type: the organisms requested in SDES determine appropriate media.

- RS – rectal swab
- STO – stool

- STOA – STOOL: Aeromonas species requested
- STOE – STOOL: Aeromonas & Yersinia requested
- STOP – STOOL, Predominant organism
- STOY – STOOL: Yersinia requested

Refer to Lab Test Directory – Stool Culture for Specimen Collection and Transport and Rejection Criteria.

Special instructions

- The laboratory must be notified if bacteria other than *Salmonella, Shigella, E. coli* 0157 or *Campylobacter* sp. are suspected.
- Select the appropriate SDES code based on the organisms suspected.

Special Safety Precautions

Microbiologists are subject to occupational risks associated with specimen handling. Refer to the safety policies located in the safety section of the *Microbiology Procedure Manual***.**

- *Biohazard Containment*
- *Biohazardous Spills*
- *Safety in the Microbiology Laboratory*

Procedure

A. Inoculation

a. Allow all media to come to room temperature before inoculation.
b. Label all plates, tubes and slides properly with the patient's name, accession number and date.
c. Inoculate the media in the order of the least selective first to prevent carryover of inhibitory substances to another medium. Refer to the Sunquest specimen label for the order of inoculation.

B. Specimen processing

Rectal swab:

a. Roll swab over upper quadrant of CNA, CBAP, MAC, HE, and MACS; (and additional plates as needed).
b. Break swab off in SEL.
c. Do not inoculate a GN broth tube, the EHEC test will be credited by day shift tech.

Solid stool:

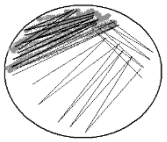
a. Using a sterile swab, sample stool in several places, especially areas that have blood and mucus.
b. Roll swab over upper quadrant of CNA, CBAP, MAC, HE, and MACS; (and additional plates as needed).
c. Break swab off in SEL.
d. Inoculate a 3-4 mm round pellet of stool to the GN broth.

Diarrheal/liquid stool:

a. Place 2-3 drops on each plate, add 50 μL to the GN broth and 2-3 drops in the selenite.

C. **Streak plates semi-quantitatively for primary isolation**.

a. Sterilize the inoculating loop in the incinerator for 5 s to 10 s. Allow the loop to cool.
b. Pass the loop back and forth through the inoculum in the first quadrant several times, covering approximately ¼ of the plate.
c. Flame the loop, turn the plate a quarter turn and pass the loop through the edge of the first quadrant approximately 4 times while streaking into the second quadrant. Continue streaking in the second quadrant without going back into the first quadrant 3-4 times.
d. Flame loop again, turn the plate another quarter of a turn, and pass the loop through the edge of the second quadrant approximately four times while streaking into the third quadrant. Continue streaking in the third quadrant without going back into the second quadrant 3-4 times.



D. Incubation

1. Incubate SB, CNA, MAC, HE, MACS, YSA, GN broth and SEL in ambient air at 35 º C.
2. Incubate CBAP at 42ºC in a Campy bag under microaerophilic conditions (5% O_2, 10% CO_2, and 85% N_2). Each bag needs to contain 2 plates, add an un-inoculated plate as necessary.
3. If *Yersinia* sp. is requested, incubate Y25 and MC25 plates at RT.

E. Culture examination

1. Day 1
   a. Take notice of plates processed in reference to the specimen description. Ensure all required plates are available. If plates are missing, credit appropriately and notify provider if testing will be incomplete.
   b. Add billing codes AERID and YERID if Aeromonas and Yersinia plates are set up.
   c. CBAP:
   - Examine for suspicious colonies, growing into 2nd or 3rd quadrant. Perform a Gram stain to look for small gram-negative gull-wing shaped organisms. If gram stain is suspicious for Campy, report **SUMP-CAMP-BCTF** and call results to ordering location. Perform VITEK MS. Subculture suspicious isolates to SB and incubate in a Campy bag, to send to MDH. If no VITEK MS identification, perform Vitek NH card. Record daily Campy plate QC on Desk 4 QC board.

   d. **SB:**
   - Colonies on SB should be screened for Oxidase. If OX pos, perform VITEK MS to rule out *Aeromonas/Plesiomonas*.

   e. **CNA:**
   - Examine for the presence of beta hemolytic streptococcus group A; identify by latex grouping; do not quantitate. **CAUTION**: **VITEK MS cannot be set up directly from CNA agar.** Report **BSA-ISOL.**

   - Examine for the presence of *Staph aureus.* If *Staph aureus* is predominant in the absence of normal stool flora (NENT or only 1+), **and** it is 3-4+ (in 3rd or 4th quadrant), isolate and identify with SLC. Do PBP2a for MEC A oxacillin resistance; do not quantitate, report as **MSSA-ISOL-PRED** or **MRSA-ISOL-PRED**. Do not perform susceptibility testing.

   - Examine for predominance of yeast. Quantitate and report yeast if in a 2:1 ratio to normal stool flora using the code **YST2**. If yeast is 3-4+, but not in a 2:1 ratio to normal stool flora; i.e. co-dominant, do not report. Do not identify unless requested.

   - Examine for beta hemolytic, large Gram positive rods. *B. cereus* is catalase positive, motile, lecithinase positive and penicillin resistant. Perform Maldi, Gram stain and catalase. Report *Bacillus cereus* group with an unclaimed Maldi result of *B. cereus*, catalase positive and Gram positive rods. Do not quantitate. Report **BCGR-ISOL.**

   f. **MAC, MC25:**
   - Examine for the presence of lactose negative (NLF) colonies. Perform VITEK MS on suspicious colonies from each plate for enteric screening.

   g. **HE**:
   - Examine for the presence of lactose negative (NLF) or H_2S colonies. Inoculate MILS tube and a SB plate with one NLF colony. Inoculate a SB plate with one H2S colony.

Incubate SB with the "Maldi" subs to be run the next day. **CAUTION: VITEK MS cannot be set up directly from HE agar.**

h. MACS:

- Examine for the presence of sorbitol negative colonies. Pick **2** Sorbitol negative suspicious colonies and sub to SB. **CAUTION**: VITEK MS does not identify *E. coli* 0157:H7, perform Vitek GN card from SB on day 2. If all colonies are sorbitol positive, discard MACS plate after 1 day.

i. **YSA** and/or **Y25:**

- Examine for the presence of mannitol positive colonies. Work up suspicious colonies from each plate. Inoculate MILS tube and a SB plate with one colony. Incubate with the "Maldi" subs to be run the next day. **CAUTION: VITEK MS cannot be set-up directly from the YSA agar.**

j. Identify *Ps. aeruginosa*, with VITEK MS and report if in pure culture or predominant (3-4+) with low numbers of Enterobacteriaceae (NENT or 1+) present. Use the codes **PSAR-ISOL-PRED**. Do not quantitate. Do not perform susceptibility testing.

k. **MALDI = CAUTION: *Escherichia* coli or *Shigella* species** on the Vitek MS**.** If MSID = *Escherichia coli,* set up MILS tube and subculture to SB.

l. Re-incubate primary plates and subcultures. Report culture in progress, "CIP".

m. **SEL--** Incubate in ambient air at 35ºC. After 12-18 incubation, subculture the SEL to MAC and HE. Discard SEL. Record work-up in Sunquest MRE, W10.

Workups:	Wkup# 10	Workup Components
	Med: SEL	SC: MAC, HE
	Des: SEL	
	Id: SSEL	

n. **GN—**After 16-24 hours incubation, perform the Shiga-toxin assay, STAT! EHEC. See separate procedure *Shiga Toxin Testing EHEC STAT.*

2. Day 2

a. Re-examine CBAP plates, following Day 1 protocol.

b. Examine primary SB, CNA, MAC, MC25, HE, YSA, Y25 and SEL subculture plates from the previous day for suspicious colony types, following the Day 1 protocols. Discard primary and SEL subculture plates if there are no suspicious colony types or further work-ups.

c. Perform VITEK MS on suspicious colony types picked the previous day from CNA, HE, MACS, YSA and Y25.

d. Read the MILS tube if needed to rule out *Shigella*. Set up Vitek GN full identification if *Salmonella, Shigella*, or *Yersinia* cannot be ruled out.

e. Interpret the MILS tube using the following table:

Table 1

If: MILS tube reactions are any of the following combinations:	Report: **NSSY**
*MOT (+) IND (+) LYS (P/P) *MOT (+) IND (+) LYS (P/Y) *MOT (neg) IND (+) LYS (P/P) *MOT (+) IND (neg) LYS (P/P) *MOT (+) IND (neg) LYS (P/Y)	

*MOT (neg) IND (neg) LYS (P/P)	
For the following combinations: *MOT (neg) IND (neg) LYS (P/Y) *MOT (neg) IND (+) LYS (P/Y)	Perform GN ID on VITEK 2 for identification:

f. SB subcultures from the MACS plate
- Perform spot Indole test.
- If positive, do ECA. **SUMP- E0157-BCTF** may be reported if ECA is positive and Indole is positive.
- Vitek GN card must be set up:
  - to confirm *E0157* or
  - on Indole negative isolates to rule out *Shigella* sp.

g. Set up additional VITEK MS enteric screenings and SB/ MILS tube subs as needed.

h. Re-incubate CBAP for an additional day.

i. Send out preliminary report.

3. Day 3
   a. Examine CBAP; discard if negative.

   b. Perform VITEK MS on suspicious colony types picked from CNA, HE, MACS, YSA, and Y25 from the previous day. Read the MILS tube if needed to rule out *Shigella*. Set up Vitek GN full identification if *Salmonella, Shigella*, or *Yersinia* cannot be ruled out.

   e. Perform susceptibility testing if appropriate (see chart section below).

   f. Subculture *Shigella* sp. to a Nutrient agar slant to send to MDH for speciation.

   g. Subculture *Salmonella* sp., *Shigella* sp., *E. coli* 0157, *Campylobacter* sp., and *Yersinia enterocolitica* to a Nutrient agar slant to send to MDH per MC 4.1 Infection Prevention and MDH Submission procedure. (http://www.health.state.mn.us/diseasereport)

   h. Send updated report or finalize if all results are negative for requested pathogens.

4. Additional days
   a. Complete identification, serological and susceptibility testing procedures until all suspicious isolates are finished and/or confirmed.
   b. Send updated report and finalize.
   c. Submit *Salmonella* sp., *Shigella* sp., *E. coli* 0157, *Campylobacter* sp., and *Yersinia enterocolitica* isolates to MDH, per MC 4.1 Infection Prevention and MDH Submission procedure (http://www.health.state.mn.us/diseasereport)
   d. Save a representative primary plate at room temperature for 7 days in case a physician calls for further studies. Save CBAP in a Campy bag at room temperature.

Interpretation

1. Media differential reactions and interpretation:

   a. Campy agar
      1. Examine CBAP for gray to pinkish or yellowish gray and slightly mucoid colonies.
         - Some colonies may show spreading along the streak line. As the moisture content decreases, colonies may be round, convex and glistening with little spreading. *Campylobacter* tends to grow into the third and fourth quadrant whereas most of the normal flora will be confined to the first quadrant.

2. Report **SUMP-CAMP-BCTF** and call result as soon as possible—a gram stain suggestive of Campy is sufficient for reporting as presumptive.

Suspicious colony on CBAP (42ºC)
↓
Gram stain: small curved gram-negative rods
↓
Report SUMP-CAMP-BCTF
↓
VITEK MS or VITEK NH card → MDH

b. CNA
1. Examine for the presence of beta hemolytic streptococcus group A. Do not quantitate.

2. Examine for the predominance of yeast. Quantitate and report yeast if in a 2:1 ratio to normal stool flora. Do not identify.

3. Examine for the presence of *S. aureus.*
   - If *Staph aureus* is **predominant** in the absence of normal stool flora (NENT or only 1+),
   - **AND** it is 3-4+ (in 3rd or 4th quadrant),
     - Isolate and identify with SLC.
     - Do PBP2a for mecA oxacillin resistance;
   - Report as **MSSA-ISOL-PRED** or **MRSA-ISOL-PRED**.
   - Do not quantitate. Do not perform susceptibility testing.

4. Examine for the presence of beta-hemolytic, large Gram positive rods.
   - *B. cereus* is catalase positive, motile, lecithinase positive and penicillin resistant.
   - Perform Maldi, Gram stain and catalase.
   - Identify and report *Bacillus cereus* group with an unclaimed Maldi result of *B. cereus*, catalase positive and Gram positive rods. Do not quantitate. Report **BCGR-ISOL.**

c. HE agar
1. Expected reactions
   - *Salmonella* sp.: green to blue-green, usually with black centers
   - *Shigella* sp.: usually green rather than blue
   - *Salmonella* and *Shigella* sp.: when surrounded by many bright fermenting *Enterobacteriaceae*, colonies may appear faint pink with a green tinge, usually surrounded by a clear halo.
   - *Yersinia* sp.: small yellow colonies

d. MAC, MC25 agar
1. Expected reactions
   - *Salmonella* and *Shigella* sp.: NLF, colorless
   - *Aeromonas*/*Pleisiomonas* sp.: LF, pink or NLF, colorless
   - *Yersinia enterocolytica*: small, pale or NLF, colorless

e. MACS agar
1. Expected reactions
   - *E. coli* 0157: sorbitol negative, colorless
   - *Shigella* sp.: sorbitol negative, colorless

f. SB agar
1. Examine for beta-hemolytic colonies. Approximately 70% of *Aeromonas* are hemolytic.
2. Perform Oxidase on all colony morphologies. Perform MALDI on Oxidase positive isolates.

g. YSA, Y25
   1. Expected reactions
      - *Yersinia* sp: mannitol fermenter, pink center with translucent border (bulls eye)
      - *Aeromonas* sp.: mannitol fermenter, pink

Method Performance Specifications

1. Cultures will be routinely examined for:
   - *Salmonella, Shigella, Campylobacter,* E. *coli* 0157 and
   - Predominating numbers (in the absence of normal stool flora—NENT or only 1+) of *S. aureus*, yeast and *Ps. aeruginosa.*
   - Culture for *Yersinia* sp. and *Aeromonas/Plesiomonas* sp. must be specifically requested.
   - The presence of group A βeta streptococci will be reported.

2. Routine susceptibility testing is not indicated for non-typhoidal *Salmonella spp*. isolated from intestinal sources. Use comment **SNP** (susceptibilities not performed).
   - Perform only on request per provider.
   - Perform only on inpatients when reflexed from the GI Panel.
   - Perform on typhoidal *Salmonella (S. typhi* and *S. paratyphi* A-C) isolates identified by MDH.

3. Susceptibility testing is indicated for all *Shigella spp*. isolates.

4. Routine susceptibility testing is not indicated for *Aeromonas* spp. isolated from intestinal sources. Use comment **SNP** (susceptibilities not performed). Perform only on request per provider.

5. If susceptibilities are performed, please refer to the following table:
   - Use Vitek AST-N806 card or
   - Use Kirby Bauer EBAC HAE NMEN Disk Dispenser and Mueller Hinton agar

Table 2

Reporting Guidelines DRUG ↓ BUG →	*Salmonella- if S. typhi and S. paratypi A-C*	*Shigella*	*Aeromonas-if requested*	*Yersinia*
Ampicillin	**YES**	**YES**	**NO**	**NO**
Ciprofloxacin	**YES**	**YES**	**YES**	**YES**
Ceftriaxone	**NO (only on extraintestinal sources i.e. Blood)**	**NO**	**YES**	**YES**
Trimeth / Sulfa	**YES**	**YES**	**YES**	**YES**

6. **DO NOT** perform susceptibility testing on *E. coli* 0157.

7. Coagulase-negative staphylococcus is suggested as a cause of NEC in premature infants; however their etiologic role has not been proven. For NICU patients, identify *Staphylococcus* with VITEK MS if predominant and in the absence of normal stool flora (NENT or only 1+). Perform susceptibility testing.

8. *Salmonella* and *Shigella* usually produce typical colonies on the various media, but it must be remembered that their appearance may be altered by growth in close association with other organisms. At times, these pathogens produce colonies of atypical appearance for reasons that are not entirely clear. Even with experience, technologists may be misled by colonial appearance.

9. *Aeromonas* isolates do not require speciation. Report as *Aeromonas sp*.(AERO).

Result Reporting

1. If an isolate is identified by MALDI as *Salmonella* group, do not perform susceptibilities unless requested or on inpatients when reflexed from the GI panel.

2. MALDI identification of *Salmonella typhi* or *Salmonella paratyphi* A-C is not claimed and cannot be reported. Confirm identification with Vitek and perform susceptibilities.

3. If *Salmonella* species is isolated, report on line 1, **SALM-ISOL-SENT**.

    - Isolate will be sent to MDH following MDH Reportable rules and for typing. MDH will report serotypes using whole genome sequencing within 7 days. Culture should remain open until MDH results are received.
    - Add comment **WGS** after typing result.

4. If *Shigella sonnei* or *Shigella* group is isolated, report on line 1, **SUMP-SHSO-SENT** or **SUMP-SHIG-SENT**.

    - Isolate will be sent to MDH following MDH Reportable rules and for speciation. Isolate will be identified by biochemical and serological testing to obtain speciation.
    - MDH will report identification with 3-5 days. Culture should remain open until MDH results are received.
    - When results are received, remove **SUMP**, add additional identification information and add comment **IMDH. Example: SHSO-ISOL-IMDH**

5. **Alert Value:** Report ***Salmonella, Shigella, E. coli*** 0157 and ***Campylobacter*** sp. by telephone to the physician or patient's nurse. Document in the computer, the person called, credentials and the date and time of the call. If hospitalized, these patients require enteric precautions.
    - Alert values do NOT need to be called to the Emergency Department. This includes ED discharged patients.

6. **CULTURE RESULTS**: Record culture results and culture work-ups in Sunquest MRE *Culture Entry* tab in Observations or Workups by using customized keyboards or by entering a code in the result box.

7. If all culture results are negative at 48 hours, send a preliminary report mentioning only the organisms that were requested using codes: NSI, NSHI, NEC, NCI, NAI, NYI

    Observations:
    1. NO SALMONELLA ISOLATED
    2. NO SHIGELLA ISOLATED
    3. NO E. COLI 0157:H7 ISOLATED
    4. NO CAMPYLOBACTER ISOLATED
    5. NO AEROMONAS/PLESIOMONAS ISOLATED
    6. NO YERSINIA ISOLATED

8. Finalize report at 72 hours after if the CBAP remains negative.

9. In the absence of expected enteric organisms, report NO ENTEROBACTERIACEAE ISOLATED (MO code: **NENT**) on line 1. Report the specific organisms requested on the following lines.

10. **Presumptive reporting**: Report presumptive results on
    - *Campylobacter* sp. (typical gram stain). Confirm with Vitek MS/Vitek GN card.
    - *E coli* 0157:H7 when the ECA latex is positive. Confirm with Vitek MS/Vitek GN card.
    - *Shigella sonnei* or *Shigella* group from Vitek GN card.

- Do not report if below 93% or other organisms listed as possible identification. Sent to MDH for identification.

Observations: 1. PRESUMPTIVE E. COLI 0157:H7 ISOLATED Biochemical confirmation to follow. **(SUMP-E157-ISOL-BCTF)**

11. If a stool pathogen is isolated besides *Salmonella* or *Shigella*, report on line 1, **XXXX-ISOL**. Add the **SENNR** comment for all MDH reportables.

- **E157-ISOL-SENNR** = ESCHERICHIA COLI 0157:H7 ISOLATED. Sent to MDH per reporting rules
- **CAMJ-ISOL-SENNR =** CAMPYLOBACTER JEJUNI ISOLATED. Sent to MDH per reporting rules
- **AERO-ISOL =** AEROMONAS SPECIES ISOLATED
- **YENT-ISOL-SENNR =** YERSINIA ENTEROCOLITICA ISOLATED. Sent to MDH per reporting rules

12. Use the following MO codes or do a keyword look-up by typing a semicolon in the result box and click on the *ellipsis* button. Type in a partial/entire word as follows: SALM. Search on *Description*. Select the desired code by highlighting.

Search value
Text code: SALM
Click **Search**

Search option ○ Code ◙ Description

Matched On	Code	Description
SALMONELLA SP	SALM	SALMONELLA SPECIES

Click **Select**

13. Report yeast **only** if it is isolated in a 2:1 ratio to normal stool flora. Quantitate and report as follows:

1. 4+ YEAST ISOLATED IN A 2:1 RATIO TO NORMAL STOOL FLORA.
2. NO SALMONELLA ISOLATED
3. NO SHIGELLA ISOLATED
4. NO E.COLI 0157:H7 ISOLATED
5. NO CAMPYLOBACTER ISOLATED

14. If a culture for predominate organism is requested, report the predominant organism.

1. (PREDOMINANT ORGANISM)-ISOL-PRED
2. NO SALMONELLA ISOLATED
3. NO SHIGELLA ISOLATED
4. NO E COLI 0157 ISOLATED
5. NO CAMPYLOBACTER ISOLATED

15. If no predominate organism is isolated when requested, report as follows:

1. NO PREDOMINANT ORGANISM ISOLATED
2. NO SALMONELLA ISOLATED
3. NO SHIGELLA ISOLATED
4. NO E COLI 0157 ISOLATED
5. NO CAMPYLOBACTER ISOLATED

16. If there was a Pre-Analytical culture set-up error, such as CBAP plate not in the campy bag or no

plates for isolating E coli 0157:

- Result the culture with **SPI**, "Specimen processed incorrectly", and free text a comment referring to "Unable to isolate _____".
- Call the ordering provider, and add the **CAL** "Called to" comment.
- Credit in the billing tab. **CRCC** is the code for credit campy. **CREC** is the code for credit E coli 0157.

18. If growth should occur or additional testing should be requested after the culture has been finalized, remove the final status and send out a supplementary report. The code **SRPT** (supplementary report) must be used in SREQ or *Culture Observations* as follows:

- Updated or new culture information: In the *Culture Entry* tab, enter SRPT on an observation line followed by new results.
- Requests for additional testing: In the *Misc. Updates* tab, enter SRPT in SREQ followed by the request.
- Re-final the culture when identifications and/or testing are complete.

19. If a culture requires a correction, the code **CORR** (corrected report) must be reported on an observation line in the *Direct Exam* or *Culture Entry* tab. Refer to policy MCVI 5.1 Mislabeled and Unlabeled Specimens for Sunquest report entry information.

References

1. Leber, Amy, Section 1, Aerobic Bacteriology, 3.8.1, *Clinical Microbiology Procedures Handbook*, 2016, Vol. 1, American Society for Microbiology, Washington, D.C.
2. Versalovic, James, et al, *Manual of Clinical Microbiology*, 2011, ASM press, American Society for Microbiology, Washington, D.C., Chapters 43, 44 pp 670-695.

Appendices

SUNQUEST WORKLABEL MEDIA FORM DEFINITION
BATTERY: STLC

SPEC	MEDIA
0	CNA,CMP42,MAC,MACS,HE,SEL, GN
STOA	SB,CNA,CMP42,MAC,MACS,HE,YSA,SEL,GN
STOE	SB,CNA,CMP42,MAC,MC25,MACS,HE,YSA,Y25,SEL,GN
STOP	SB,CNA,CMP42,MAC,HE,SEL,GN
STOY	CNA,CMP42,MAC,MC25,MACS,HE,YSA,Y25,SEL,GN

Training Plan/ Competency Assessment

Training Plan	Initial Competency Assessment
1. Employee must read the procedure. 2. Employee will observe trainer performing the procedure. 3. Employee will demonstrate the ability to perform procedure, record results and document corrective action after instruction by the trainer.	1. Direct observation.

Historical Record

Version	Written/Revised by:	Effective Date:	Summary of Revisions
1.0	Pat Ackerman	1973	Initial Version
1.1	Pat Ackerman	10/1981	
1.2	Pat Ackerman	02/1987	
1.3	Pat Ackerman	01/1992	
1.4	Pat Ackerman	08/04/2003	
1.5	Pat Ackerman	12/10/2004	
1.6	Pat Ackerman	11/11/2006	Report yeast only if it is isolated in a 2:1 ratio to normal stool flora.
1.7	Pat Ackerman	01/11/2008	Updated Sunquest 6.2 reporting information. Revised SRPT and CORR statements.
1.8	Becky Carlson	04/19/2011	Reformatted, Updated references, Added EHEC Shiga toxin testing

	1.9	Becky Carlson	7/14/2013	Updated Vitek card information Added *Plesiomonas shigelloides* isolate submission to MDH
	2.0	Becky Carlson	4/16/2015	Added appendix A; Enteric Pathogen Screening Guide and Enteric Pathogens Flow chart. Re-numbered from MC427 for CMS loading.
	3.0	Becky Carlson	8/11/2016	Removed the requirement of picking 2 colonies of each suspicious morphology to work up for screening tests.
	4.0	Becky Carlson	10/24/2016	Revised for use of VITEK MS. *Plesiomonas shigelloides* no longer is required to be submitted to MDH. *Salmonella* no longer needs to be confirmed with serotyping.
	5.0	Susan DeMeyere	3/28/2017	Remove naladixic acid for Cipro sens and added KB for *salmonella spp*. sens testing. Add only performing sens on typhoidal *Salmonella spp*. and CAX only on extraintestinal sources.
	6.0	Susan DeMeyere	4/13/2017	Added comments regarding MALDI identification and removed Enteric Pathogens Screening Guide
	6.0	Susan DeMeyere	7/21/2017	Changed HE media instructions under Culture Examination to reflect that a MILS tube is not needed for H2S colonies.
	6.0	Susan DeMeyere	11/9/2017	Added negative resulting codes.
	7.0	Susan DeMeyere	5/23/2018	Update Salmonella reporting due to WGS at MDH.
	8.0	Susan DeMeyere	11/5/2019	Added sub 2 sorbitol colonies. Changed all susceptibility testing to KB and *Aeromonas* on request only
	9.0	Susan DeMeyere	10/16/2020	Added examine for *B cereus* organisms.
	10.0	Susan DeMeyere	6/28/2022	Added instructions for *B cereus* identification.
	11.0	Susan DeMeyere	4/8/2024	Removed Shigella typing. Revised Shigella reporting.
	12.0	Susan DeMeyere	8/27/2024	Added Susceptibility testing on the Vitek AST-N806 card.