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Sutter Roseville Medical Center

Monitoring Blood Culture Volume In-Service

October 2018

Purpose and Background

- To provide instructions for monitoring the volume of blood collected in blood cultures
- The volume of blood added to the blood culture bottles directly affects the ability to detect true positives
  - If under-filled, there is a potential for false negatives for septicemia.
  - If over-filled, there is a potential for false positive alerts using the automated systems

Policy

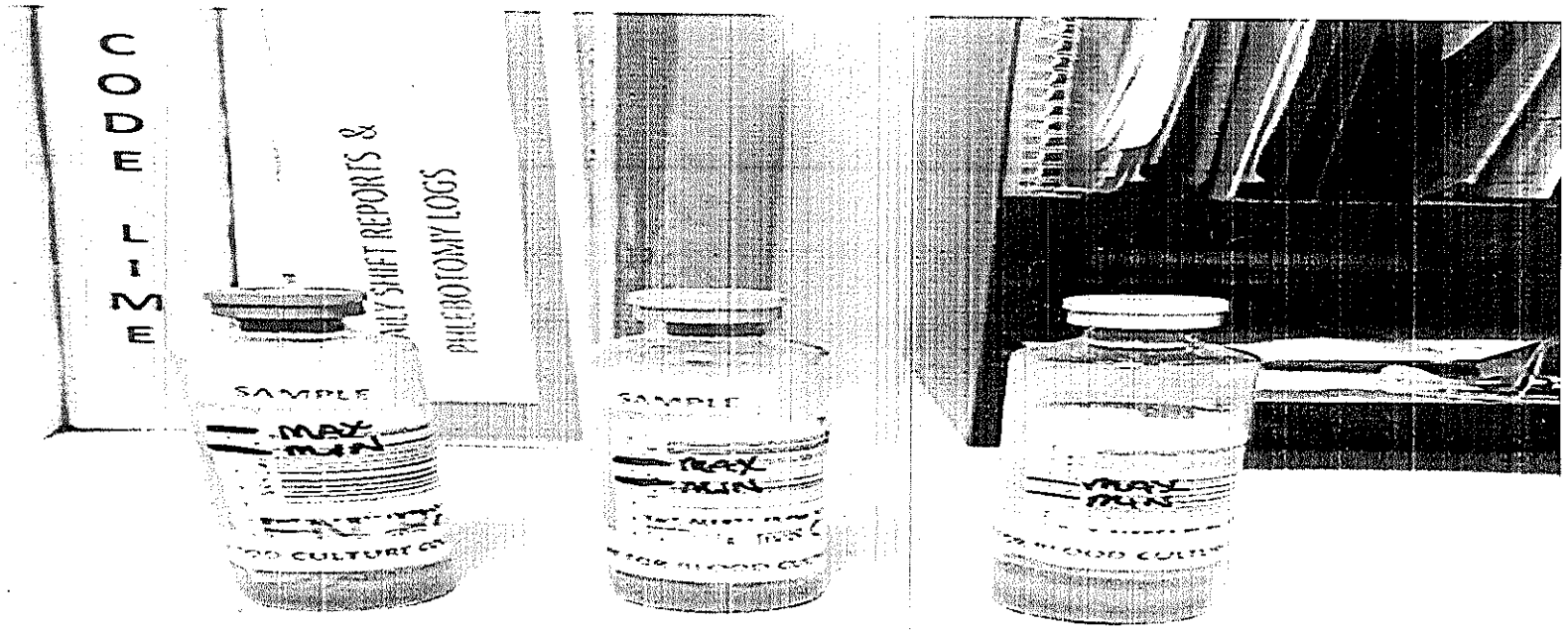
- The volume of blood added to blood culture bottles will be periodically monitored for appropriate volumes and feedback provided to clinical staff when appropriate
- The monitoring will be conducted during the normal processing workflow of the laboratory and PSCs for all shifts.
- Blood culture volume monitoring is assigned to the Specimen Processor 1 (C1)
- Each Day and on each shift, randomly select two blood culture bottles to monitor for adequate blood volume. If no or one bottle is received during the shift, note on Form A. If blood cultures were not received on the shift for monitoring, indicate on *Form A: Daily Log* that no blood culture samples were received

Procedural Steps

- Each Day and on each shift, the C1 specimen processor will randomly select two blood culture bottles to monitor for adequate blood volume. If no or one bottle is received during the shift, note on Form A. If blood cultures were not received on the shift for monitoring, indicate on *Form A: Daily Log* that no blood culture samples were received
- This process is performed prior to the specimen receipt process to allow comments to be made in Sunquest if bottle is under- or over-filled (see Step 6)
- Individual performing monitoring should be different than individual collecting blood cultures bottles to be assessed.

Procedural Steps, cont.

- Compare patient blood culture bottle to un-inoculated bottle to estimate the amount of blood added. Use the bottle's volume hash markings on the label to assess



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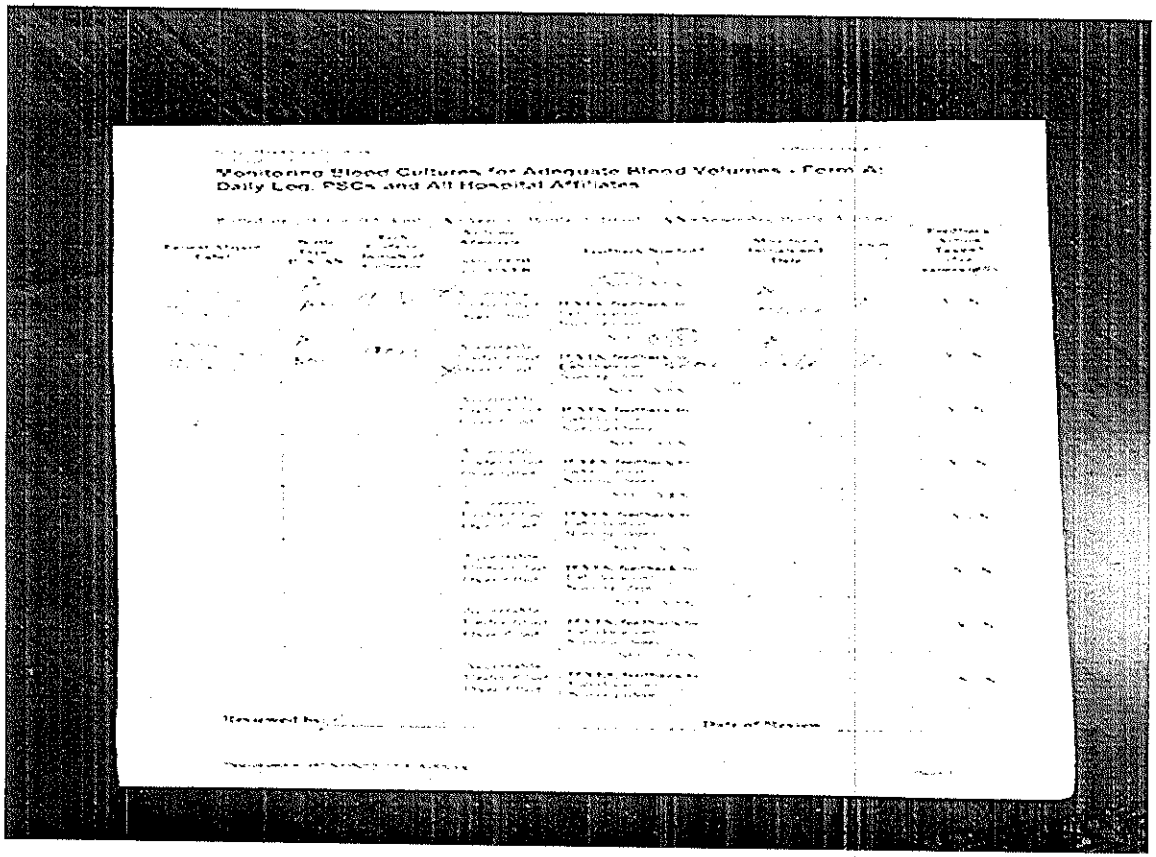
Procedural Steps, cont.

- Complete Form A Daily Log as shown in the example below
- Form A Daily log is located by the specimen processor 1 workstation



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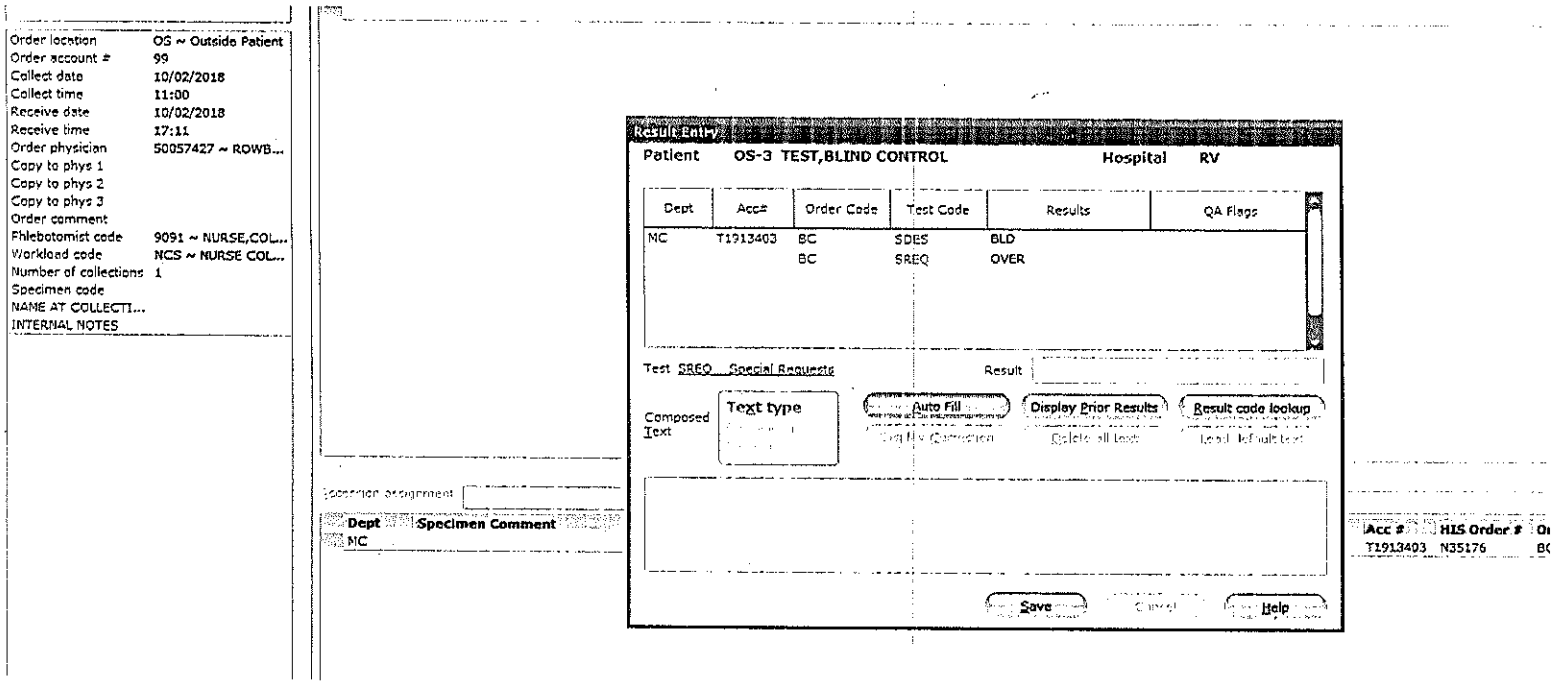
Procedural Steps, cont.

- Receive blood culture order in the LIS
- If blood culture bottle is under filled or overfilled then append with the correct ETC in the SREQ field (do not use semi colon)
  - ➢ PEDI-underfilled
  - ➢ OVER-overfilled
- After LIS receipt, small aliquot labels are used as patient documentation on Form A Daily log



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Records Review

- Records are reviewed by the Client Services Supervisor at least monthly
- Action is taken to provide feedback when necessary

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Origination:	*8/15/2014*
Effective:	*4/3/2017*
Final Approved:	*4/3/2017*
Last Revised:	*4/3/2017*
Next Review:	*4/3/2019*
Owner:	*Debbie Hayes: Lab Quality Program Manager*
Policy Area:	*Lab - Quality Management*
References:	*QME 07: Process Management*
Applicability:	*Sac Sierra Region*

Monitoring Blood Cultures for Adequate Blood Volumes, PC.NON02.07-/-SS.xx

Purpose To provide instructions for monitoring the volume of blood collected in blood cultures.

Policy

- The volume of blood added to blood culture bottles impacts the ability to detect true positives.
  - If under-filled, there is a potential for false negatives for septicemia.
  - If over-filled, there is a potential for false positive alerts using the automated systems.
- The volume of blood added to blood culture bottles will be periodically monitored for appropriate volumes and feedback provided to clinical staff when appropriate.
- The monitoring will be conducted during the normal processing workflow of the laboratory and PSCs for all shifts.

Definitions

- Standard bottles may be used for visual comparison by adding the lower and upper limit volume to uninoculated blood culture bottles
- Appropriate volumes of blood for types of blood culture bottles are as follows:

Bottle Type	BacT/Alert®
Pediatric	0.5-4 mL
Aerobic	5-10 mL
Anaerobic	5-10 mL

Step	Action	Responsibility
	Daily and on each shift, randomly select two blood culture bottles to monitor for adequate blood volume. If no or one bottle is received during the shift, note on Form A. • If blood cultures were not received on the shift for monitoring, indicate on *Form A: Daily Log* that no blood culture samples were received. • This process is performed **prior** to the specimen receipt process to allow comments to be made in Sunquest if bottle is under- or over-filled (see Step 6) • Individual performing monitoring should be different than individual collecting blood cultures bottles to be assessed.	Any of the following may perform monitoring: • Lab Assistant • Senior Lab Assistant • Phlebotomist • Client Services

	• PSC blood culture bottles are monitored at SMF-Micro lab.	Supervisor • CLS/MLT
	Compare patient bottle to un-inoculated bottle to estimate the amount of blood added. Use the bottle's volume hash markings on the label to assess.	As above

BacT/ Alert® Bottle Type	Acceptable Volume	Under-filled	Over-filled	Method
Pediatric	0.5-4 mL	<0.5 mL	>4 mL	Compare to 4 ml hash markings or use standard bottle
Anaerobic and Aerobic	5-10 mL	<5 mL	>10 mL	Compare to 5 ml hash markings or use standard bottle

	Fill out Form A indicating the following: • Patient aliquot label or accession number • Bottle type (use one line for each bottle being assessed) • Tech Code or initials of the collector notated on the bottle • If blood volume is adequate (acceptable, under-filled or over-filled)	As above
	If feedback is needed (under-filled or over-filled) indicate on form (Y or N) and indicate who the feedback is needed for (Lab or Nursing).	As above
	Complete form by including initials and date of the employee assessing volume and the shift when the monitoring was conducted.	As above

Step	Action	Responsibility
	If an under-filled or over-filled bottle is determined, the SREQ field in Sunquest for the related blood culture accession number will be updated to include one of the following ETCs:	As above

If	Then enter	Translation
Under-filled	**PEDI**	Please interpret results with CAUTION. Smaller volumes of blood reduce the chances of recovering microorganisms especially in adult bacteremias where the colony counts may be very low.
Over-filled	**OVER**	Please interpret results with CAUTION. Over-filled blood culture bottles may cause erroneous results.

	Document all actions taken on *Form A: Daily Log.* Print label after receipt to use on Form A.	As above
	Records are reviewed by supervisor at least monthly.	Supervisor or manager over PSC or client services

Action taken to provide feedback includes: • For laboratory personnel, supervisor provides feedback to phlebotomist using *Continuing Employee Development Form A: Performance Feedback Form.* • For non-laboratory clinical staff feedback is provided using affiliate mechanisms of intra-departmental communication and may include: ◦ Periodic memo or report to nursing supervisor, charge nurse of department or nurse educator. ◦ Periodic educational in-service with clinical staff.	Supervisor or manager over client services
Once reviewed, records are maintained as indicated in *Storage and Retention of Records and Samples,* Quality control activity.	Supervisor or manager over client services

All revision dates: 4/3/2017, 8/15/2014

Attachments:

Form A: Daily Log, PSCs and All Hospital Affiliates

Approval Signatures

Step Description	Approver	Date
Lab Medical Directors	Andrea Ong: MD	4/3/2017
Lab Medical Directors	Hannah Wong: MD	3/27/2017
Lab Medical Directors	Jamie Cassity: MD	3/15/2017
Lab Medical Directors	Marian Butcher: MD	3/8/2017
Lab Medical Directors	Rowberry Ron: MD	3/8/2017
Lab Medical Directors	Kristen Vandewalker: MD	3/6/2017
Lab Medical Directors	Mary Keohane: MD	3/2/2017
	Debbie Hayes: Lab Quality Program Manager	3/2/2017

Applicability

Sac Sierra Region, Sutter Amador Hospital, Sutter Auburn Faith Hospital, Sutter Davis Hospital, Sutter Medical Center Sacramento, Sutter Medical Foundation, Sutter Roseville Medical Center, Sutter Solano Medical Center

Monitoring Blood Cultures for Adequate Blood Volumes - Form A: Daily Log, PSCs and All Hospital Affiliates

P=Pediatric Bottle: 0.5-4 mL A=Aerobic Bottle: 5-10 mL AN=Anaerobic Bottle: 5-10 mL

Patient Aliquot Label	Bottle Type: P, A, AN	Tech Code or Initials of Collector	Volume Adequate Under: PEDI Over: OVER	Feedback Needed?	Monitor's Initials and Date	Shift	Feedback Action Taken? (for supervisor)
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N
			☐ Acceptable ☐ Under-filled ☐ Over-filled	NO / YES **If YES, feedback to:** Lab (location): ________ Nursing (dept): ________			Y / N

Reviewed by: ______________________________ **Date of Review:** __________