TRAINING UPDATE

Lab Location:	SGAH & WAH	**Date Distributed:**	1/5/2015
Department:	Core	**Due Date:**	2/1/2015
		Implementation:	**2/2/2015**

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Blood Culture; Positive Workup SGAH / WAH.M05 v5

Description of change(s):

Section	Reason
5.D.2	Clarified subsequent set on same patient
5.E	Added instructions for NOS bottle
6	Move worksheet from section 9

This revised SOP will be implemented on February 2, 2015

Document your compliance with this training update by taking the quiz in the MTS system.

Approved draft for training (version 5)

Non-Technical SOP

Title	**Blood Culture; Positive Workup**	
Prepared by	Ronald Master	Date: 4/13/2009
Owner	Ronald Master	Date: 4/13/2009

Laboratory Approval		
Print Name and Title	**Signature**	**Date**
Refer to the electronic signature page for approval and approval dates.		
Local Issue Date:	Local Effective Date:	

Review:		
Print Name	**Signature**	**Date**

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TABLE OF CONTENTS

1. PURPOSE

To outline the manner in which positive blood cultures will be managed and transported to Chantilly for identification and susceptibility.

2. SCOPE

When blood cultures are positive, reflex testing for identification and susceptibility testing will be manually added to the original Blood Culture order. Each bottle type will have its own reflex order code (XIDS - aerobic bottle and pediatric bottle, and XIDSN - anaerobic bottle). This reflex order will be electronically transmitted to Chantilly. The reflex test results will file back into Sunquest under the same Sunquest accession number.

In SMS the results will be grouped together since the reflex test will be under the same Sunquest accession number. In physician view, SMS displays the most recent results first. The reflex test will therefore display first followed by the original blood culture order.

3. RESPONSIBILITY

It is the responsibility of all personnel assigned to Microbiology to read, understand and to perform all procedures as described in this SOP.

4. DEFINITIONS

Blood Culture Set – A set includes one aerobic and one anaerobic blood culture bottle drawn in a single stick. A single aerobic bottle or pediatric bottle may be drawn if the patient is elderly, an infant or child, or if the optimal amount of blood can not be obtained.

5. PROCEDURE

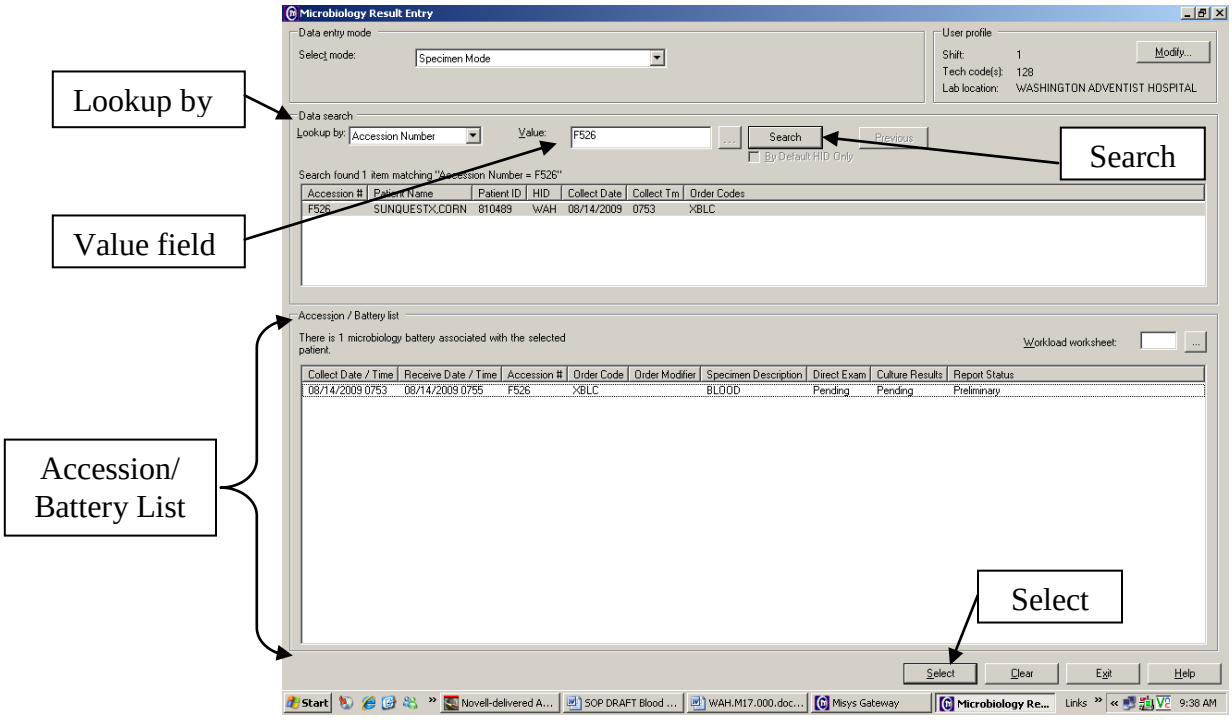
A. Blood Culture Order Sections

1. The Blood culture test code is XBLC
   Code XBLC consists of:
   - SDES - specimen description
   - SREQ - special request (This is usually a "HIDE" test, which doesn't display on reports unless a special request is added.)
   - IDST - ID & Sensitivity (This will be defaulted with "HIDE" as the result. It will be changed to "had been added" if the culture is positive.)
   - CULT - culture result (This will either be resulted as No Growth on the negative cultures or be resulted with the Gram Stain results on the positives)
   - RPT - report status (Pending, Preliminary, or Final)

2. The test code **does not include** an individual test code for gram stain.

B. Positive Gram Stain: First Positive Bottle of a Set

1. Print the Work card
   a. Log on the Misys Gateway screen. Click on "Microbiology Result Entry" and enter the specimen accession number in the "Value" field. Press enter or click "Search". To search for the specimen by a different identifier, click the arrow for the drop down menu on the "Lookup by" field and search by name, medical record number, etc.



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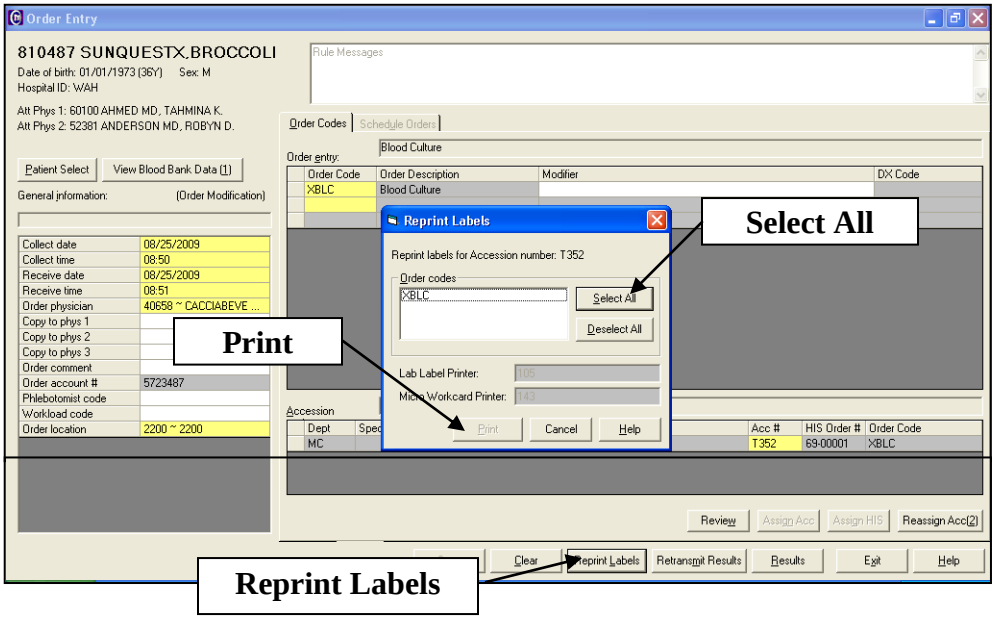
b. The accession data will appear in the lower part of the screen in the "Accession/Battery List". If the highlighted accession is the correct one, press **enter,** or click on it, or press **ALT + S.**
c. System will display the result entry screen. The screen opens automatically to the "Culture Entry" tab.
d. Click on the **Misc Updates** tab.
e. Double click on the **SDES** result and change BL to **BLUD**
f. Press tab three times to get out of the field. A message will appear that reads :

g. Click **OK**.
h. Select **Save**
i. Select **Save** again to exit.
j. From the Gateway screen go to Order Entry
k. Change "Lookup by:" to Accession Number
l. In the "Value" field, enter the accession number of the XBLC
m. Click **Search**
n. Click **Select** or ALT+C



o. Click "**Reprint Labels**" or ALT+L
p. Click "**Select All**" or ALT+S
q. Click "**Print**" or ALT+P
r. Click "**OK**"
s. **Exit.** After saving this, XBLC will generate Micro work cards. These are used to label the plates and worksheet with the Sunquest barcode label and for two technologists to record their codes and gram stain results.

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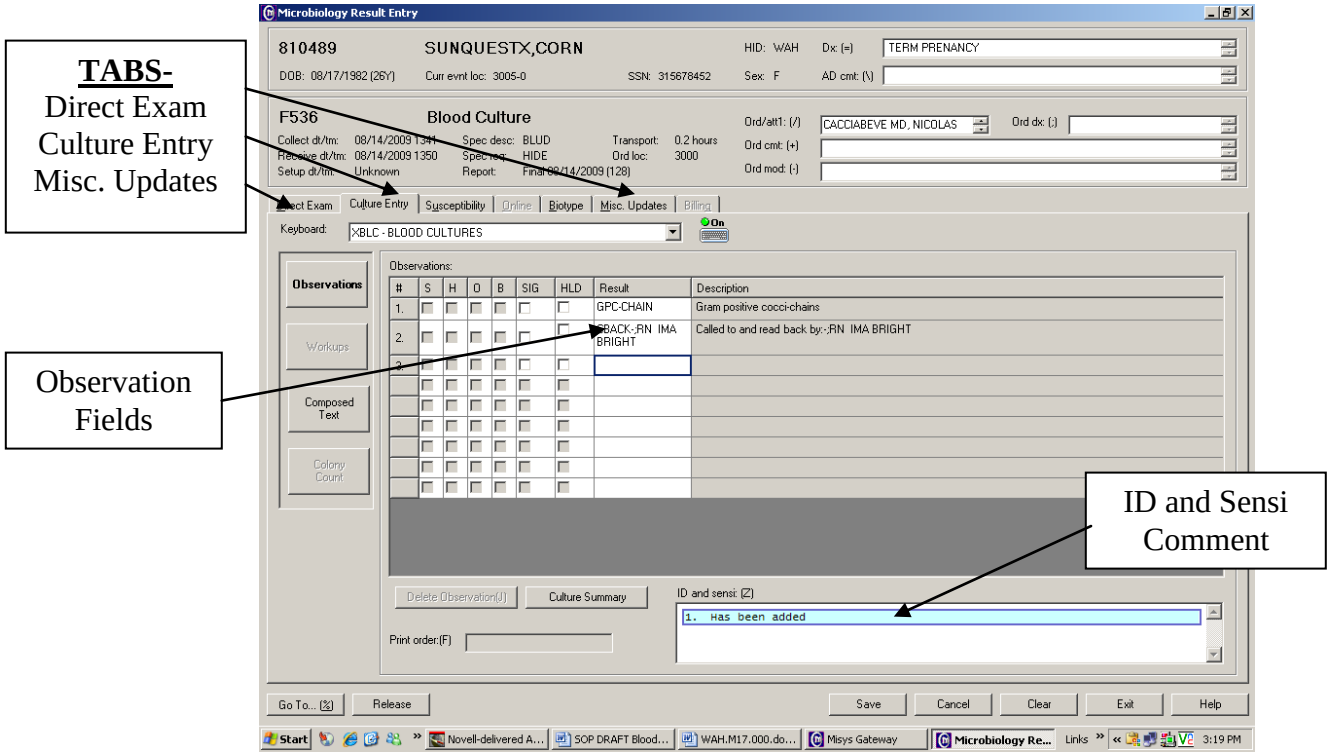
t. Label plates with barcode labels (do not cover media type) and write the type of bottle (AER, ANA, or PEDS), date plated, and tech code near the bottom edge of the plate where it will not be covered by labels. Use a pencil to label a slide with accession number, patient last name, type of bottle (aer, ana, ped) and date positive.

2. Enter the ID and Susceptibility Note
   a. From the "Microbiology Result Entry" screen, Click on the **Direct Exam** tab.
   b. Arrow up to Observation line 1. (It will be default resulted as HIDE)
   c. Press **H** which will expand to "Has been added."
   d. DO **NOT** enter your gram stain results at this time.
      Note: Blood culture gram stain results are entered under the "Culture Entry" tab.
   e. Tab down to an empty observation field.
   f. Select **Save** to exit **or** click the **Culture Entry** tab to continue with entering gram stain results.



3. Result the Gram Stain
   a. From the "Microbiology Result Entry" screen, click on the **Culture Entry** tab.
      Note: Only gram stains for Blood Cultures are resulted in this field, result all other gram stains under the "Direct Exam" tab.
   b. Enter the gram stain result. One observation per line (one organism or cell type + quantity). **Do <u>NOT</u> go to the <u>Direct Exam</u> tab to result the Gram Stain.**
   c. After you have noted all observations, tab down to an empty observation line and type the following:
      ;CBACK<tab> ;; (Nurse or Dr.'s first and last names) **on** (month, day, and time), **by** (tech code). This will expand to "Called to and read back by:"

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d. Notify the appropriate nurse or doctor and document the call.
e. Press the "/" to finalize the culture. This will finalize the gram stain, and another order will be added to enter the ID and Susceptibility results.
f. Click on **Save** or press **ALT**+ **S**.
g. Write the gram stain result on each plate.

4. Notification
   a. Positive Blood Cultures must be called to a nurse or doctor 24 hours a day, 7days a week
   b. Inpatient results are called to the floor.
   c. Outpatient results are called to the doctor's office during office hours and to the physician on call after hours.
   d. ER patients who have been discharged are called to the ER charge nurse.
   e. The first positive report on all positive gram stains must be called to the nurse or physician **BY A TECHNOLOGIST**.

      ALL POSITIVE GERMANTOWN EMERGENCY CENTER GRAM STAINS MUST BE CALLED TO THE CHARGE NURSE AT THE SGAH EMERGENCY DEPT TO ENSURE TIMELY FOLLOW UP.

      Positive gram stains and cultures for both GEC and SGAH ER patients, not admitted, are called and faxed to the SGAH ER charge nurse.
      Printer/Fax #: Printer is # 1115 or Fax # 240-453-5847.

5. Order the ID and Susceptibility
   a. The identification and susceptibility test code **MUST BE ORDERED ON THE ORIGINAL BLOOD CULTURE ACCESSION NUMBER.**
   b. From the Gateway screen, open SmarTerm, and log in.
   c. Enter function **REI** and enter the accession number for the positive bottle.
   d. At the prompt TEST-2: Add test code **XIDS** for a positive aerobic bottle or pediatric bottle and /or test code **XIDSN** for a positive anaerobic bottle.
   e. ACCEPT (A), MODIFY (M), OR REJECT (R)? enter **A**

Note: THIS IS THE *ONLY* CIRCUMSTANCE WHERE ADDING ADDITIONAL MICROBIOLOGY ORDERS TO THE SAME ACCESSION NUMBER IS ALLOWED.

C. Positive Gram Stain: Second Positive Bottle of a Set

1. If the gram stain result is the same as the first bottle **in the set,** there is no need to call the unit. Enter the gram stain result and tech ID on the worksheet only.
2. If the Gram stain result from the second bottle of a set is the same as the result from the first bottle **of the set,** a second read by another technologist is not required. Document the Gram stain result and tech ID on the worksheet and document the result and that the previous bottle was positive with same result.
3. Order the ID and Susceptibility on the same accession number using Test code **XIDS** for aerobic or pediatric bottles or **XIDSN** for anaerobic bottles. Refer to steps in B.5 above.

4. Label plates with barcode labels (do not cover media type) and write the type of bottle (AER, ANA, or PEDS), date plated, and tech code near the bottom edge of the plate where it will not be covered by labels. Follow procedure for sending plates.
5. If the Gram stain is different from the bottle previously reported, result the gram stain in Sunquest. Use code ADD (Addendum report) and free text "gram stain of additional bottle in set". CALL all Addended results and document. Refer to steps in B.4 above.

D. Positive Gram Stain: Second Set from a Patient Drawn on Same Day

1. If the Gram stain result from a **second set** is the same as the result from the first set **of blood cultures from the same patient drawn on the same day,** there is no need to call the unit a second time.
2. If the Gram stain result from a subsequent set is the same as the result from a **previous set on the same patient,** a second read by another technologist is not required. Document the Gram stain result and tech ID on the worksheet and document that the previous set was positive with the same Gram stain result and record the accession number of the previous set. Result the Gram stain in Sunquest. Refer to steps in B.4 above.
3. If the Gram stain result is different than reported on the previous set, follow the procedure in **B. Positive Gram Stain: First Positive Bottle of a Set.**
4. Order the ID and Susceptibility using Test code **XIDS** for aerobic or pediatric bottles or **XIDSN** for anaerobic bottles. Refer to steps in B.5 above.

E. Smear Negative (NOS) Positive Blood Culture

1. Smear negative bottles must be returned to the instrument.
2. Do NOT order XIDS or XIDSN and do NOT record the NOS Gram stain result in the LIS.
3. Print a workcard and label the subculture plates and worksheet with barcode labels (do not cover media type) and write the type of bottle (AER, ANA, or PEDS), date and time plated, and tech code near the bottom edge of the plate where it will not be covered by labels.
4. Place the worksheet, plates, and slides together in the incubator in a biohazard bag.
5. Check plates at least once per shift for growth. Hold plates from smear negative aerobic bottles for 48 hours and 72 hours for anaerobic bottles if no growth.
6. If a bottle which has been returned to the BACTEC due to NOS is again flagged as positive by the instrument, a Gram stain and plating of the bottle must be performed again.
7. If growth detected on plates, perform a Gram stain of the colonies and follow the procedure in **B. Positive Gram Stain: First Positive Bottle of a Set.**

F. Prepare Plates for Sendout

1. One set of blood culture plates per biohazard bag.
2. **Be sure to file the worksheet (which should include the gram stain results and tech codes of the two techs who read the slide) and the gram stain slide in established area.**

3. Plates are to be placed in the incubator until courier arrives for pickup.
4. Positive blood culture bottles are to be maintained at room temperature at the site reading the gram stain until the organism and sensitivity have been finalized by the reference site.

G. ROB

Print the Batch list and Packing list. Refer to the procedure ROB: Creating Batch for Microbiology Sendouts for details.

H. FES

FES must be performed for each order for **XIDS and XIDSN.** Refer to the procedure FES, Processing Microbiology Orders for details.

I. Overdue Log

Test codes **XIDS and XIDSN** are defined to worksheet **XBLC**. The number of days overdue is 6 days on this worksheet.

J. Safety

You, the employee, have direct responsibility to avoid injury and illness at work. Nearly all-harmful exposures to infectious substances and chemicals, and other injuries, can be avoided with effective training and consistent safe work practices.

Become familiar with the Safety Manual to the learn requirements on working safely and protecting the environment from harm. Although lab work typically focuses on the hazards of working with specimens and chemicals, we must also control other important hazards.

- Slips, trips, and falls cause many serious injuries. Please ensure that spills are cleaned quickly (to avoid slippery floors) and that you can see and avoid obstacles in your path.
- Ergonomic injuries result from performing tasks with too much repetition, force, or awkward position. Ergonomic injuries include strains and back injuries. Learn about ergonomic hazards and how to prevent this type of injury.
- Scratches, lacerations, and needle sticks can result in serious health consequences. Attempt to find ways to eliminate your risk when working with sharp materials.
- Warnings of other specific hazards are noted in this procedure. Please comply with the requirements to reduce your risk of injury."

Report all accidents and injuries to your supervisor or the Safety Officer.

6. RELATED DOCUMENTS

ROB: Creating Batch for Microbiology Sendouts, Specimen Processing procedure
FES, Processing Microbiology Orders, Specimen Processing procedure
Positive Blood Culture Worksheet (AG.F211)

7. REFERENCES

N/A

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SOP M014.006		
000	10/16/09	Procedure section and Addenda A revised for LIS upgrade to GUI system.	A. Sears	R. Master
001	6/1/2010	5.B.3.g Add write gram stain result on plate	R. Master	R. Master
002	7/12/2011	4. Clarified set definition 5.B & C Added date and tech code on plates Added 5 D and E	R. Master	R. Master
003	9/4/2012	5.C, D & E Added worksheet 5.E.5 Added 72 hours for anaerobic bottles 9 Added attachment D	R. Master	R. Master
004	11/10/14	5.D.2 Clarified subsequent set on same patient 5.E Added instructions for NOS bottle Section 6: move worksheet from section 9 Footer: version # leading zero's dropped due to new EDCS in use as of 10/7/13	R. Master	R. Master

9. ADDENDA AND APPENDICES

A. Microbiology Blood Culture Keyboard
B. Positive Blood Culture Work Up Flow Chart
C. Blood Culture Gram Stain Referral / Consult Form

Addendum A

BLOOD CULTURE KEYBOARD
Result / Modifier Keys

ESC	F1 EXIT MAILBOX	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11 EXIT	F12

! 1 **RARE**	@ 2 **FEW**	# 3 **MOD**	$ 4 **MANY**	% 5 **NOCO**	^ 6 **NTY**	& 7 **HYPH**	* 8 **YPSU**	(9 **GT**	) 0 **GNCB**	-	+	Back Space ←

Q **CLUE**	W **WBCS**	E **EPIT**	R **RBCP**	T **TRIC**	Y **YST**	U **GPR**	I **GNR**	O **NOS**	P **POSIT**	{ / [**UNIN**	}] **INVAL**	\

A **PCPR**	S **GPRD**	D **GNDC**	F **BGPR**	G **GPCN**	H **GPC**	J **CHAIN**	K **CLUST**	L **PAR**	; **OTHR**	‘	ENTER ←

Z **INTRA**	X **EXTRA**	C **GNC**	V **GVCB**	B **GVR**	N **ng** n **HIDE**	M **GNCB**	, **fnl**	. ?	/ **PREVR**

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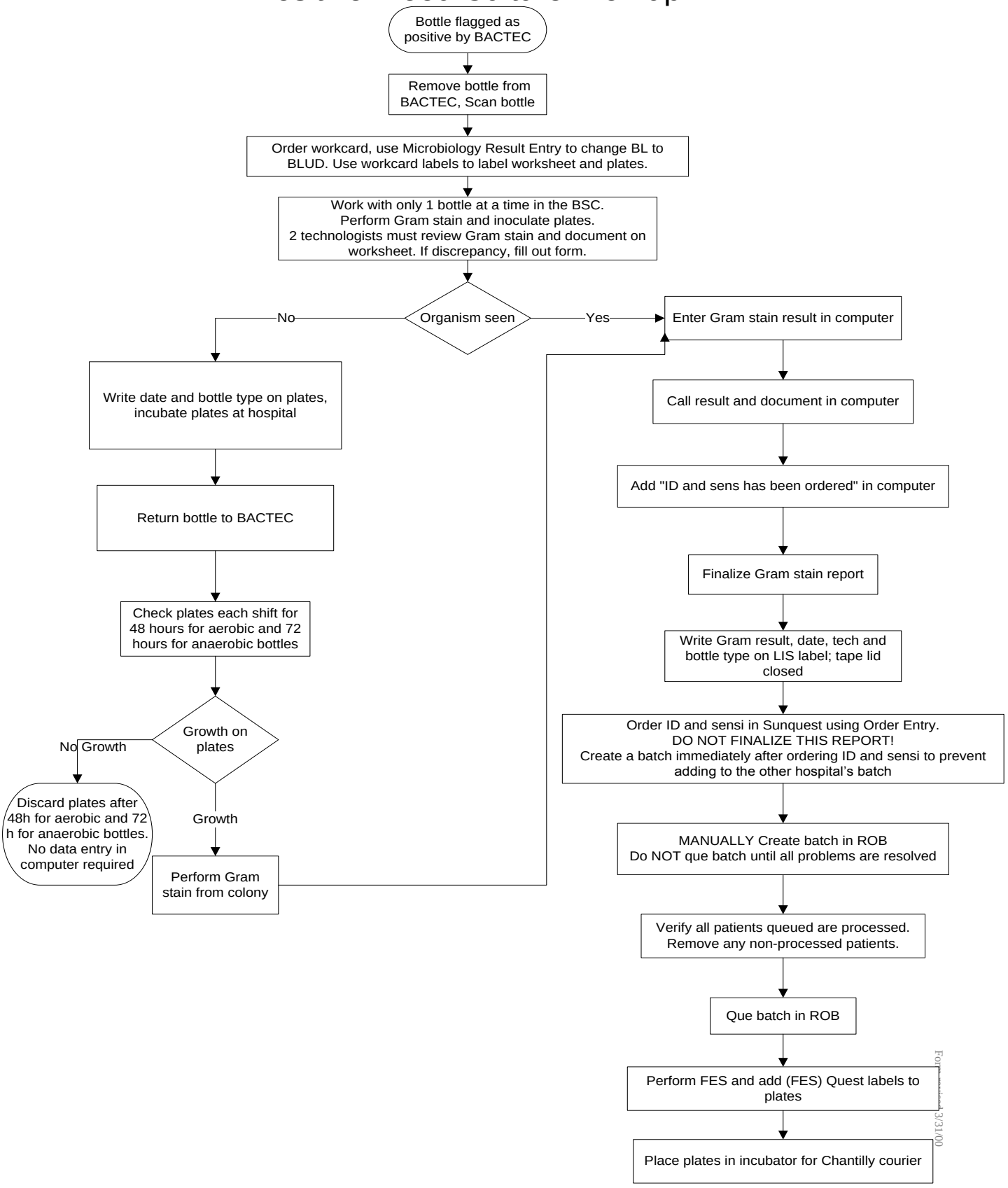
Addendum B

Positive Blood Culture Workup



Addendum C

Blood Culture Gram Stain Referral / Consult Form

* This form must be completed for all Blood Culture Gram stains not reported and held for the next shift to read and report.

Misys Accession #: _____

Aerobic Bottle / Anaerobic Bottle [circle the correct bottle(s)]

Patient Name: _____

Date: _____

1st Technologist Name: _____ Tech code: _____

Gram stain impression:

2nd Technologist Name: _____ Tech code:_____

Gram stain impression:

Agreement: Y / N

Reason for Referral:

Result Completed Date: _____ Technologist: _____

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