TRAINING UPDATE

Lab Location:	SGMC & WAH	**Date Distributed:**	1/3/2017
Department:	Core Lab	**Due Date:**	1/31/2017
		Implementation:	**2/1/2017**

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Media Quality Control SGAH.M11 v4

Media Labels and Quality Assurance AG.F184.1

Blood Culture Media Visual Inspection Labels AG.F183.1

Note: this has been converted to a system SOP

Description of change(s):

SOP -

Section 6: added forms
Section 9: moved addenda D & E to section 6
Addendum B: deleted LIM broth, added V agar
Addendum C: deleted Thayer-Martin

FORMS –

Update QD logo and SG facility name (no change to content)

The revised SOP and FORMS will be implemented on February 1, 2017

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

Non-Technical SOP

Title	**Media Quality Control**	
Prepared by	Ron Master	Date: 7/30/2009
Owner	Ron Master	Date: 7/30/2009

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

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

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1. PURPOSE

All media should be subjected to quality control testing to determine the adequacy of the media regarding sterility and performance. The quality control procedures performed by commercial suppliers with test organisms can be accepted for some types of media. The laboratory must maintain the media manufacturer's documentation that QC practices conform to NCCLS specifications. All media should be stored according to the manufacturer's recommendations and disposed of when outdated. All media is required to be tested prior to use. Results of controls must be verified for acceptability before patient results are released. Media is removed from use on the expiration date. All media that passes QC should be labeled with a departmental green sticker and signed with the date. All QC results should be documented on the appropriate QC sheet.

2. SCOPE

This SOP covers most aspects of Quality Control procedures and documentation for commercially prepared media.

3. RESPONSIBILITY

It is the responsibility of personnel assigned to Microbiology personnel to learn understand and perform quality control procedures for all media as described in this SOP.

4. DEFINITIONS

Exempt media - includes commercial media documented to maintain consistent user performance with minimum variation and required minimum quality control. However, categorization of media as exempt does not preclude a laboratory from performing quality control on any manufactured medium type when deemed necessary.

Nonexempt media - Nonexempt media require complete user quality control including confirmation of satisfactory performance with recommended organisms.

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5. PROCEDURE

I. Receiving Media from the Manufacturer:

A. Verify delivery of the ordered amount. Check medium type for multiple lot numbers and/or impending expiration dates. Report recurring problems to a Supervisor so that the manufacturer or distributor may be contacted.

B. Record the lot number, expiration date, and the received date for each medium type, including blood culture media.

C. Store the medium as specified by the manufacturer (usually 2-8ºC) pending quality control. Separate exempt media from nonexempt media.

II. Initial Examination of Media:

A. Media from a commercial source should be submitted to the following:

1. Examine individual packages for breakage, contamination, excessive moisture, and dehydration and for adequate appearance, evidence of overheating or freezing.

2. Since sterility testing is routinely performed by manufacturers, commercially prepared media need not be rested for sterility by the end user. Instead, careful inspection for contamination should take place immediately before inoculation with patient specimens.

3. In addition, each shipment of purchased media must be inspected for the following:

cracked/damaged Petri dishes
unequal filling of plates
cracked medium in plates
hemolysis (if blood containing)
excessive number of bubbles
freezing
agar detached from plates
insufficient agar in the plates (<3 mm)
change in the expected color of the media (possible pH problem)
expiration date
adequate hydration
appropriate color and thickness
tube media not dried or loose from sides
broth media not cloudy
contamination
frozen/melted agar
agar surface ~~plates~~ smooth

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4. If acceptable, record the date of receipt on each package. Place a label from the inspected lot of media on the Media Labels and Quality Assurance Form. For blood culture bottles, obtain the copy of the Quality Control Certificate and place a Blood Culture Media Visual Inspection label on the Certificate above the lot # and expiration date. Record the date received, initials, and check the OK box if the visual check was acceptable. If unacceptable, record the problem and inform a Supervisor of the lot number of unacceptable media. The Supervisor will contact the manufacturer regarding the failed media. Microbiology staff must document and notify the media manufacturer of deficiencies found during the use of the media. If the shipment contains more than one (1) lot, each individual lot should be tested prior to use.

5. If the QC organism is not viable or a medium does not perform acceptably, do not use that lot of medium until the problem is resolved. Record the corrective action. If media that has acceptable QC results is not available, media may be borrowed from ~~Washington~~ the other Adventist Hospital or Quest Diagnostics in Chantilly. If media that has passed QC cannot be obtained from these locations ~~WAH or Chantilly~~, specimens can be sent to Chantilly to be plated. This option should only be used in a critical situation as it will delay turn-around-time.

III. Sterility Testing:

Because manufacturers routinely perform contamination testing, commercially prepared media need not be retested for sterility by the end user. Instead, careful inspection for contamination should take place immediately before inoculation with patient specimens.

IV. Processing of Quality Control Organisms

A. At least once per year, prepare a culture of each quality control organism routinely used by the laboratory. Use lyophilized or frozen organisms.

B. Inoculate one nonselective medium. Incubate under conditions favorable for growth. Label as a stock control with the name of the organism and the date of inoculation. Tightly seal and store at 2-8º C for up to 12 months. Certain fastidious bacteria such as *Neisseria gonorrhoeae* may require 25 to 35ºC storage.

C. From the stock control, prepare a second subculture. Label as working control with the name of the organism and date of inoculation. Incubate under conditions favorable for growth. Store the working control at room temperature or 35± 2°C CO_2 for one to two weeks. Prepare a fresh working culture at least once per month from the refrigerated stock control. Avoid multiple serial subcultures of quality control organisms over extended periods of times. For *Neisseria gonorrhoeae* and *Neisseria meningitidis*, maintain the

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stock culture at room temperature. It may be required to replenish the stock on a monthly basis.

V. Performance Testing:

Evaluation of each new lot or shipment of nonexempt media should be made for growth supporting, selective and differential properties prior to use. An adequate variety of stock organisms will be maintained to perform this testing. One positive and one negative control organism should be used to test each property of a medium.

VI. Satisfactory Performance of Media:

A medium performs satisfactorily if all test strains provide satisfactory growth with typical colony morphology and size or in the case of selective media, if growth of the appropriate organisms is inhibited. Tubed media are generally evaluated by testing strains that will give negative and positive results with each reaction what can be observed. The appropriate reactions should be obtained before the medium can be considered to be satisfactory.

VII. Limitations:

Quality control is intended to detect defects among a small sample of media. It may not detect every defect from every agar plate or tubed medium.

6. RELATED DOCUMENTS

Media Labels and Quality Assurance (AG.F184)
Blood Culture Media Visual Inspection Labels (AG.F183)
Media Quality Control Form (AG.F177)

7. REFERENCES

Krisher et. al, Bartlett RC et al: *Quality Control for Commercially Prepared Microbiological Culture Media: Approved Standard—3rd Edition* NCCLS Publication M22-A3 (ISBN 1-56238-536-4), NCCLS, 940 West Valley Road, Suite 1400, Wayne Pennsylvania 19087-1898 USA, 2004.

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SOP M016.004		
000	8/20/2010	Addendum C: Delete MacConkey Sorbitol	R. Master	R. Master
001	8/23/2011	Addendum B: Added Hektoen agar	R. Master	R. Master
002	5/21/2012	Addendum A: Deleted Campylobacter	R. Master	R. Master
002	5/21/2012	Addendum B: Deleted CIN, TCBS, Campy agar, HE, XLD, and BAP w/ ampicillin	R. Master	R. Master
002	5/21/2012	Addendum C: Deleted BAP w/ ampicillin and Campy agar	R. Master	R. Master

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002	5/21/2012	Addenda D & E: Location added	L. Barrett	R. Master
003	12/6/2016	Header: added WAH Section 6: added forms Section 9: moved addenda D & E to section 6 Addendum B: deleted LIM broth, added V agar Addendum C: deleted Thayer-Martin 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

Addendum A - Incubation Conditions
Addendum B - Exempt and Nonexempt Categories for Media
Addendum C - Quality Control Organisms for Nonexempt Media

Addendum A

Incubation Conditions

Quality Control Organisms	Incubation Temperature	Incubation Atmosphere	Length of Incubation
Rapidly growing bacteria	35-37°C	Ambient Air* or CO_2 Enriched	18-24 hours
Bacteria with special growth requirements	35-37°C	CO_2 Enriched	24-72 hours

Addendum B

Exempt and Nonexempt Categories for Media

CATEGORY	EXEMPT	NONEXEMPT
General bacteriologic media	Blood agar Chocolate agar Thioglycolate broth	Nutrient broth
Blood culture media	Automated blood culture bottle represents broth formulations from BD Diagnostics Systems.	
Media for gram-positive bacteria	Columbia (CNA) agar ~~LIM broth~~	
Media for gram-negative bacteria	MacConkey agar	V agar
Neisseria gonorrhoeae (GC) media		Martin-Lewis agar ~~Thayer-Martin agar (modified)~~
Anaerobic media	Anaerobic blood agar	

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Addendum C

Quality Control Organisms for Nonexempt Media

Medium	Atmosphere, length of incubation	Control organisms	Expected results
Chocolate agar	CO_2, 24-48 hrs	*N. gonorrhoeae* (ATCC 43069 or 43070) *H. influenzae* (ATCC 10211)	Growth Growth
Martin-Lewis agar	CO_2, 24–48 hrs	*N. gonorrhoeae* (ATCC 43069)	Growth
~~Thayer Martin~~	~~CO_2, 24-48hrs~~	~~*N. gonorrhoeae* (ATCC 43069)~~	~~Growth~~
V agar	CO_2, 24–48 hrs	*G. vaginalis* (ATCC 14018)	Growth

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Quest Diagnostics™

☐ Germantown Emergency Center
☐ Shady Grove Medical Center
☐ Washington Adventist Hospital

Media Labels and Quality Assurance

Place label here from one bag of representative media received. Date Rec'd Initial Physical check: (breakage, contamination, appearance and evidence of freezing or overheating) □ OK Problems_____ _____ _____	Place label here from one bag of representative media received. Date Rec'd Initial Physical check: (breakage, contamination, appearance and evidence of freezing or overheating) □ OK Problems_____ _____ _____	Place label here from one bag of representative media received. Date Rec'd Initial Physical check: (breakage, contamination, appearance and evidence of freezing or overheating) □ OK Problems_____ _____ _____

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Weekly review:	Weekly review:	Weekly review:
Weekly review:	Weekly review:	Monthly review:

Quest Diagnostics™

☐ Germantown Emergency Center
☐ Shady Grove Medical Center
☐ Washington Adventist Hospital

Media Labels and Quality Assurance

Place label here from one bag of representative media including blood culture media Date received Initial Physical check: (breakage, contamination, appearance and evidence of freezing or overheating) □ OK Problems_____ _____	Place label here from one bag of representative media including blood culture media Date received Initial Physical check: (breakage, contamination, appearance and evidence of freezing or overheating) □ OK Problems_____ _____

Weekly review:	Weekly review:	Weekly review:
Weekly review:	Weekly review:	Monthly review:

- ☐ Germantown Emergency Center
- ☐ Shady Grove Medical Center
- ☐ Washington Adventist Hospital

Blood Culture Media Visual Inspection Labels

Date Received __________

Visual inspection for breakage, contamination, appearance, and evidence of freezing or overheating.

Visual Inspection OK ☐

Initials _______________

Date _______________

Date Received __________

Visual inspection for breakage, contamination, appearance, and evidence of freezing or overheating.

Visual Inspection OK ☐

Initials _______________

Date _______________

Date Received __________

Visual inspection for breakage, contamination, appearance, and evidence of freezing or overheating.

Visual Inspection OK ☐

Initials _______________

Date _______________

Date Received __________

Visual inspection for breakage, contamination, appearance, and evidence of freezing or overheating.

Visual Inspection OK ☐

Initials _______________

Date _______________

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Date Received __________

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Date _______________