

Epicenter™ AST Management Procedures

Department of Microbiology

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1.0 Isolate Pending Rules

When uncommon resistance is detected in some isolates they will have a pending rule which must be manually acknowledged before the test will finalize and upload to LIS. These will appear in the "Needs Attention" list that can be accessed by clicking on the yellow flag icon on the Epicenter toolbar. A checkmark will appear in the "Isolate Has Pending Rule" column. Highlight the row with a left click, then right click for the option menu and select "Specimen Registration."

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<u>F</u> ile Filter									
Selected Patient			Selected Specimen	ſ	W1064058				
E- 🔁 All					Grid Record:	3/3			
	*Needs Attention	*Isolate Has Pending Rule +	*Isolate In Conflict +	*Location	*Sequence #	Test Accession #	*Isolate #	Test Name	
 T1098386, Washing, Bronchial PMIC-102, 1 W1064058, Washing, Bronchial 	Missing Organism ID		No Conflict	1/D07	424140336491	W1068960	1	PMIC-102	
■ NMIC/ID-133, 1 ■ ● W1068960, Urine ■ PMIC 102, 1	Test Aborted Invalid AST Results No Growth on Panel		No Conflict	2/A02	424140336202	T1098386	1	PMIC-102	
• • • • • • • • • • • • • • • • •	▶			1/D11	427330130039	W1064058	1	NMIC/ID-133	

Specimen Registration will automatically open to the "Test" tab. This is where "Needs Attention" yellow flags are often resolved. However, for a Pending Rule you will notice that the yellow flag is on the "Isolate" tab instead. Click on the "Isolate" tab.

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÷.	Specimen Registration - Patient ID:	Patient Name:	, Accession #: W1064058		- 7 🛛
	Patient Name		Accession #	Specimen Type	
		•	W1064058	Vashing, Bronchial	▼
ſ	Rapid Login	Patient	Specimen	Iest	
	Available Tests	Ordered Tests	Tau Cust D/T .	Leal # Comment # Test Clature // Desult	
	∎ ID	MMIC/ID-133	07/31/2009 12:40:15 AM	1 427330130039 Partial Complete	Pseudo
	a AST a Other				
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A Yawa will appear next to the isolate with the pending rule. Click on "View Expert Triggered Rules" to view the pending rule.

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🚛 Specimen Registration - Patient ID	Patient Name:	i, Accession #: W1064058			- 7 🛛
Patient Name		Accession #		Specimen Type	
	•	W1064058	· · · · · · · · · · · · · · · · · · ·	Washing, Bronchial	•
Rapid Login	Patient	Speci <u>m</u> en	<u>I</u> est		₽ <u>I</u> solate
<u>View Isolate Details</u> View Antimicrobial/Isolate Id Grid <u>View Expert</u> Triggered Rules		• # Organism Pseudomonas aeruginosa		1 - -	

Read the pending rule message by holding the cursor over the description field or expanding the row. Determine a course of action.

- 1. Verify the purity of the inoculum. If mixed delete panel from Epicenter and repeat testing.
- 2. If pure, repeat ID and AST. Do not report out results in question until verified.

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Specimen Registration - Patient ID:	Patient Name:	, Accession #: W1064058				_ 7
Patient Name	Ac	cession #		Specimen Type		
	_ W	1064058	⊥ 🔶	Washing, Bronchial		•
🔀 Rapid Login	Patient	G Speci <u>m</u> en	I est		D Isolate	
 View Isolate Details View Antimicrobial/Isolate Id Grid View Expert Triggered Rules 	Isolate #	Organism Pseudomonas aeruginosa		<u>م</u> 		
Expert Rules Triggered	Description Isolate is a multiple-drug resistant Pseudo and intection control practitioner. Verity in	monas aeruginosa. Alert clinician sults if uncommon.				
Accept Reject R	etun Scenario	Test Mode				
Antimicrobials An cted		SIR				
Antimicro	MIC Rule # Interp	Expert Final				

3. If some of the AST results can be used, click the "Accept" button and save the changes you made. The test should finalize and the results will upload to LIS. In LIS you can accept part or all of the data depending on the situation. Questions about aberrant resistance should be brought up on Rounds.

2.0 Altering & Releasing AST Results

When AST results are repeated or confirmed offline, the verified result must be entered into the Epicenter if it differs from the original result obtained from Phoenix. These results are usually suppressed in Epicenter until they have been verified. Suppressed results are indicated by italic font.

- 1. Open Epicenter Specimen Registration module.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the Isolate tab.
- 4. Unfinalize the test.
- Locate the AST result that needs to be altered and/or externalized. In the "Final" SIR column, click on the Phoenix result to access the drop down menu. Select the appropriate SIR result if different from what was reported by the Phoenix instrument.
- 6. Document how the result was verified in the Comments box.

Example: *S. aureus* isolate that tested R to SXT on the Phoenix. Disk testing confirmed that the isolate was actually susceptible.

			•															
ecimen Re	gistration	- Pat	ient ID:			Patient N	ame:			Acce	sion #: T	42504	14					عال
nt Name						-	Acce T142	ssion #					.	Spe Inti	cimen Type			-
			-y				~~							1011			A	_
- A	Rapid Login				Pati	ent			E SP	eci <u>m</u> en			ee <u>T</u> es	t			Lisolate	
						lso	late #	Organism	n							1		
• View Isolate Details								Staphylo	coccus	aureus						1		
View Antimi	icrobial/Isolat	e Id Gric	ł															
View Exper	t Triggered R	ules																
															-			
Isolate	# 1		•							Isolate 9	ource							
Organie	m Staphulo	COCCUS	aureus					-	200									
organisi	in Totabulyia	000000	durous					<u> </u>										
Isolate Cl	lassification — Significant																	
	C Healtho	are Ass	ociated							Resistance Marker								
	🗢 Commu	nity Acq	quired							Name								-
	💿 Unknov	vn								V Methicillin Resistant Staphylococcus								
0.0	Contaminant									🗑 🔽 mecA-mediated Resistant Staphylococcus								-
0.1	Not Determine	ed								Comments								-
_						_				SXT VE	RIFIED BY D	ISK						•
Exclude	e From Statist	ics				🗌 Fina	lized					K					~	
													<u>}</u>					Т
Antimicro	MIC/Conc	Interp	Expert	Final	Antimicro	MIC/Conc	Interp	Expert	Final	Antimicro	MIC/Conc	Interp	Expert Fin-	•			f	-
AM AM	. 0.5		R	R	GAT	4	1		/	P	M	R	R					
	k ≐0.5 ≥16	B	n	B	GMS GMS	18	н		H	SAM	x=0.5 16/8	5	8 8					
DAP	<i>x=1</i>	S		5	LVX	>4	R		R	STS								
E	>4	R		R	LZD	2	S		\$	SXT	>2/38	R	R	-				
E0X	<=76 N16	B		S B	MXF	4	B		B	SYN TF	<=U5 <=0.5	55					_	41
	1210				0A	72				15	(=0.5	B		–				•
																		_
												1	-			-		

7. To remove the suppression, right click on the result to access the popup menu. Remove the suppressions by clicking on the checked boxes.

Drug Test Group	0 - Suppress from Chart Repo	ort and LIS
Rule 8016 - Confirm ID and p S. aureus isolates yield a nor	purity. Repeat SXT to verify res -susceptible result to SXT.	ult. < 10% of 🔥
Suppress Trimethoprim-Sulfan	nethoxazole from	<u>0</u> K
Chart		<u>C</u> ancel
Statistics		<u>H</u> elp

After the changes have been made, a hand & pencil symbol indicates that the result was altered by the user. The normal font indicates that the result is no longer suppressed in Epicenter.

Antimicro	MIC/Conc	Interp	Expert	Final	Antimicro	MIC/Conc	Interp	Expert	Final	Antimicro	MIC/Conc	Interp	Expert	Final	٠
AM 🍯			R	R	GAT	4	1		1	Р	51	R		R	
🔆 CC				S	GM				S	RA	<=a5	S		S	
CZ	<=2	S		S	🍯 GMS					SAM	<=2/1	S		S	
DAP	<=1	5		5	LVX	>4			R	🔘 STS					
E	>4	R		R	LZD	2	S		S	A 🗞 SXT	>2/38	R		S	
🖉 FM	<=16	S	\mathcal{X}	$\mathcal{X}^{(i)}$	MXF	2	S		S	SYN	1	S		S	[
FOX	<=4	S		S	OX	<=0.25	S		S	TE	<=0.5	S		S	-
													Mor	e 🕶	

8. Save the changes. Results will automatically upload to LIS.

9. Select the results to be accepted in LIS.

3.0 Deleting Erroneous Results

Deleting data from Epicenter and/or LIS should be performed if the Phoenix purity plate reveals that the inoculum used was mixed.

3.1 Deleting Data in Epicenter

- 1. Open Epicenter Specimen Registration module.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Under the Test tab, uncheck the finalized status.
- 4. Highlight the panel to be deleted by clicking on it in the "Ordered Tests" section.
- 5. Click on the "<" button to remove the highlighted test from the "Ordered Tests" section.
- A message box will pop up asking if you wish to "Remove the 1 selected Ordered Test(s)?" Click the "Yes" button.
- 7. Save changes.

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😸 Specimen Registration - Accession #: W1029584E	BAP		🔳 🗗 🗙
Patient Name	Accession #	Specia T P	nen Type R
Rapid Login	ient 🗧 Speci <u>m</u> en	e <u>I</u> est	Isolate
Available Tests # Growth & Detection # ID # Act	rests Test Name PMIC/ID-102	Test Start D/T ● Is 07/19/2009 08:38:04 PM 1	ol # Sequence # Test Status/Rest 426020533777 Complete
# Other			
Orphans Show All Tests	Specimen Registration Information (12011)		
Finalized Test Status Complete	07/23/2009 02:41:36 PM		
Isolate 🖬 🔳 🗾 TIP 00;09 50	OrderedTestCtt: 12011		
Test Start Date/Time 💌	Remove the 1 selected Ordered Test(s)?	533777	
Test Result Date/Time Organism Enterococcus faecalis	Yes No Print	me # 0000177A2CB0E4C4	
Critical Needs Attention		Panel Lot # 9105797	

3.2 Deleting Online Data in LIS

- 1. Access the culture in LIS by entering the accession number in Microbiology Results Entry.
- 2. Click the "Cancel" button to exit the culture. A message box should pop up asking you to "Select observations and methods to delete online data." Select the appropriate panel by clicking the empty box next to the test. Click on the "Delete" button.

Direct Exam Culture I	Entry Susceptibility Online Bio	Delete Online Data		
Keyboard: URK - U	URINE	Select observations and methods to delete online data:		
	Observations:	No. Method Code Description		
Observations	# S H O B SIG H 1. IT IT	1 SEPIC Escherichia coli		
Workups (1)				-
Composed Text				
Colony Count		Delete Cancel Hel	elp	

If you are viewing this document outside of Policy and Procedure Manager (PPM) then this document is uncontrolled. Please see PPM for the most current version of this document.

4.0 Cefoxitin Disk Entry

There are currently no CLSI FOX MIC breakpoints for coagulase-negative staph. Testing should be performed by disk diffusion and entered in Epicenter.

If the isolate is FOX disk Resistant:

- 1. Exit culture in LIS.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the Isolate tab.
- 4. Unfinalize the test.
- 5. Select Cefoxitin Disk Resistant.

Re	sistano	e Marker	
		Name	_
		Cefoxitin Disk Resistant	
Ŷ		Methicillin Resistant Staphylococcus	

- 6. Save changes. The test should auto-finalize and upload all AST results to LIS.
- 7. Accept online data in LIS.

If the isolate is FOX disk Susceptible:

- 1. Exit culture in LIS.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the Isolate tab.
- 4. Unfinalize the test.
- 5. Select FOX Disk Susceptible.

Resi	stanc	e Marker	
		Name 🔺	
1	٩	Cefoxitin Disk Susceptible	
ğ		Methicillin Resistant Staphylococcus	

- 6. Save changes. The test should auto-finalize and upload all AST results to LIS.
- 7. Accept online data in LIS.

5.0 Carbapenemase Screening and Confirmation

When the Phoenix/Epicenter system reports an isolate as Carbapenemase Screen Positive, the following protocol should be followed.

- 1. Confirm purity of the inoculum by gram-staining the Phoenix purity plate.
- 2. All beta-lactam, beta-lactam/beta-lactamase inhibitor, and carbapenem results with interpretation of "S" or "I" will be suppressed in Epicenter. Other AST results should be accepted in LIS.
- 3. Attach preliminary comment to report that reads, "Isolate may be resistant to all carbapenems, confirmatory testing pending." (KPC)
- 4. Set up modified Hodge test.
- 5. If the isolate was also ESBL positive by Phoenix, set up confirmatory ESBL disks.

5.1 If the isolate tests carbapenemase positive by the modified Hodge test:

- 1. Exit culture in LIS.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the Isolate tab.
- 4. Unfinalize the test.
- 5. Remove the Carbapenemase Screen Positive resistance marker.
- 6. Select Carbapenemase Positive by Hodge Test.

Resis	stanc	e Marker	T
		Name 🔺	
	₽	Carbapenemase Positive by Hodge Test	
r eg		Carbapenemase Screen Positive	

- 7. If the isolate was also tested for ESBL, enter results as outlined in the ESBL management guide.
- 8. Save changes. The test should auto-finalize and upload all AST results, including previously suppressed beta-lactams, to LIS.
- 9. Accept new online data in LIS.
- 10. Remove preliminary comment and enter **KPCP** comment.
- 11. Do not add any ESBL comments.

5.2 If the isolate tests carbapenemase negative by the modified Hodge test:

- 1. Exit culture in LIS.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the **Isolate** tab.
- 4. Unfinalize the test.
- 5. Remove the Carbapenemase Screen Positive resistance marker.
- 6. Select Carbapenemase Negative by Hodge Test.

Resi	stanc	e Marker	Τ
		Name 🔺	
0	₽	Carbapenemase Negative by Hodge Test	
r 😎		Carbapenemase Screen Positive	

- 7. Save changes. The test should auto-finalize and upload all AST results, including previously suppressed beta-lactams, to LIS.
- 8. Accept new online data in LIS.
- 9. Remove preliminary KPC comment. Add ESBL comment if necessary.

6.0 ESBL Screening and Confirmation

When the Phoenix/Epicenter system reports an isolate as ESBL, the following protocol should be followed.

- 1. Confirm purity of inoculum by gram-staining the Phoenix purity plate.
- 2. If the inoculum is pure, accept the pending rule in Epicenter. All beta-lactam results will be suppressed in Epicenter.
- 3. Accept the ID and preliminary AST results in LIS.
- 4. Add the following comment to the report: Positive extended spectrum beta-lactamase (ESBL) screen. Isolate may be resistant to penicillins, cephalosporins and aztreonam. Confirmatory testing is pending. [RESBLP]
- 5. Set up ESBL confirmatory testing by disk diffusion.

6.1 If the isolate tests positive for ESBL by disk diffusion:

- 1. Exit culture in LIS.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the Isolate tab.
- 4. Unfinalize the test.
- 5. Select ESBL KB Positive.

Resistance Marker				
		Name 🔺		
-	◄	ESBL KB Positive		
ğ	V	Extended Spectrum Beta-lactamase		

- 6. Save changes. The test should auto-finalize and upload all AST results, including previously suppressed beta-lactams, to LIS.
- 7. Accept new online data in LIS.
- 8. Replace **RESBLP** with **ESBLP** comment.

6.2 If isolates tests negative for ESBL by disk diffusion:

- 1. Exit culture in LIS.
- 2. Access isolate test in Epicenter Specimen Registration.
- 3. Click on the Isolate tab.
- 4. Unfinalize the test.
- 5. Remove the Extended Spectrum Beta-Lactamase resistance marker.
- 6. Select ESBL KB Negative.

Resi	stanc	e Marker	
		Name	•
Ģ	₽	6) ESBL KB Negative	
Ø		Extended Spectrum Beta-lactamase	

- 7. Save changes. The test should auto-finalize and upload all AST results, including previously suppressed beta-lactams, to LIS.
- 8. Accept new online data in LIS.
- 9. Replace RESBLP with ESBLN comment.

7.0 Document Control History

Adopted/Approved by director (AR) 11/09/2009

Approved by J. Schappert 03/10/2010

Reviewed by supervisor (JC) 11/09/2009, 06/30/2011, 06/17/13

06/17/2013 Removed instructions for D-test entry. Inducible resistance is detected by the instrument. Updated ESBL procedure - preliminary comment no longer used due to EPIC standardization. Confirmatory test results entered in Epicenter the same as before. Name gets changed to include "(ESBL)." ESBLP comment is still used for positive isolates. ESBLN not used. Department notified. 11/14/14 Updated ESBL procedure – There is a new preliminary comment to use when the Phoenix screens positive for ESBL [RESBLP]. After disk confirmation, [RESBLP] is replaced with [ESBLP] if positive and [ESBLN] if negative. The instructions were removed for changing the name when ESBL positive since the ESBLP comment takes care of it.