**Epicenter™ AST Management Procedures**

**Department of Microbiology**

**Effective date**: 11/2009

**Last Revision:** 11/14/2014

**Last reviewed**: 06/17/2013

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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."
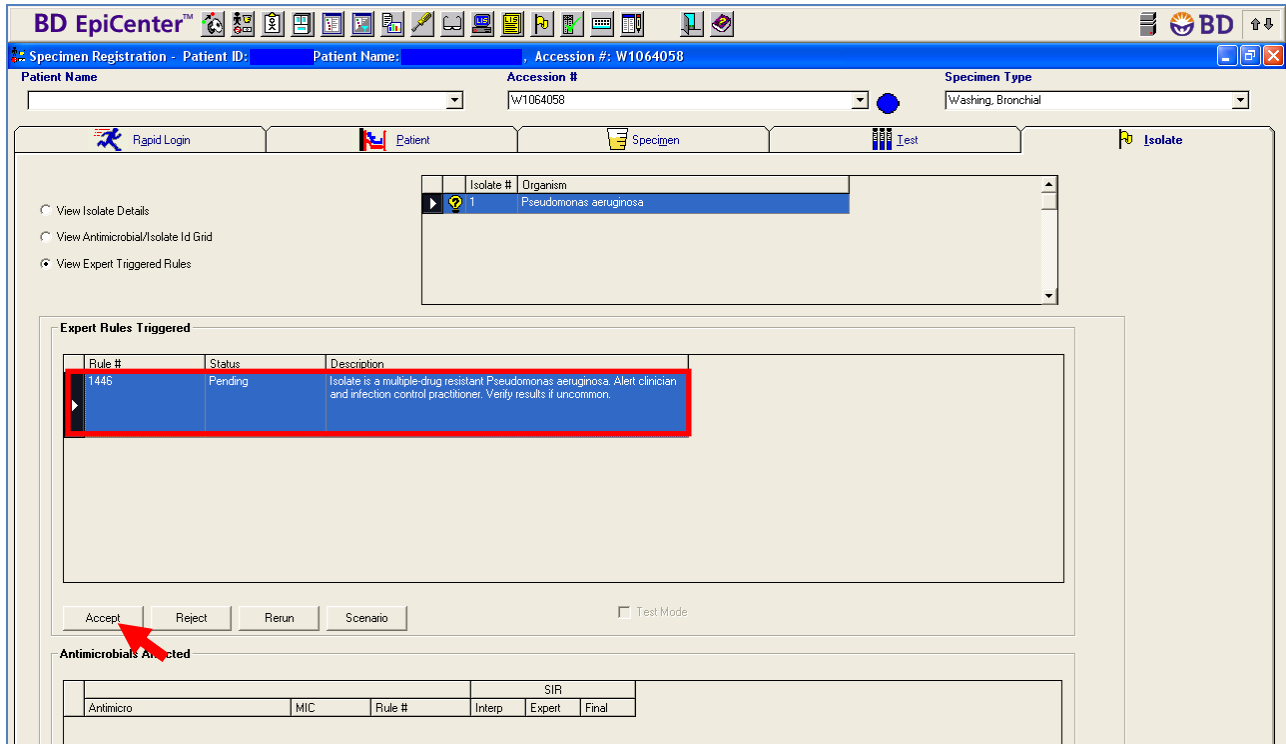


Specimen Registration will automatically open to the "Test" tab. This is where "Needs Attention" yellow flags are often resolved. However, for a Pending Rule you will notice that the yellow flag is on the "Isolate" tab instead. Click on the "Isolate" tab.



A  will appear next to the isolate with the pending rule. Click on "View Expert Triggered Rules" to view the pending rule.



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.

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.
5. 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.



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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 Report and LIS |
|---|---|

Rule 8016 - Confirm ID and purity. Repeat SXT to verify result. < 10% of S. aureus isolates yield a non-susceptible result to SXT.

Suppress Trimethoprim-Sulfamethoxazole from

☑ Chart
☑ LIS
☐ Statistics

OK
Cancel
Help

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.

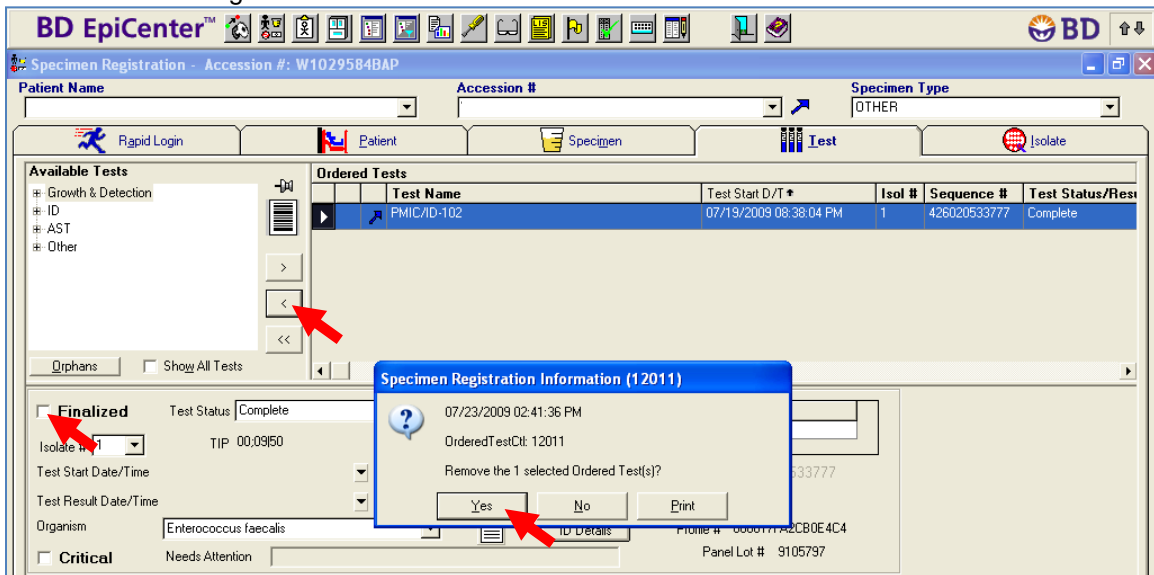| Antimicro | MIC/Conc | Interp | Expert | Final | Antimicro | MIC/Conc | Interp | Expert | Final | Antimicro | MIC/Conc | Interp | Expert | Final |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AM | | | R | R | GAT | 4 | I | | I | P | >1 | R | | R |
| CC | <=0.5 | S | S | S | GM | <=1 | S | | S | RA | <=0.5 | S | | S |
| CZ | <=2 | S | | S | GMS | | | | | SAM | <=2/1 | S | | S |
| DAP | <=1 | S | | S | LVX | >4 | R | | R | STS | | | | |
| E | >4 | R | | R | LZD | 2 | S | | S | SXT | >2/38 | R | | S |
| FM | <=16 | S | X | X | MXF | 2 | S | | S | SYN | 1 | S | | S |
| FOX | <=4 | S | | S | OX | <=0.25 | S | | S | TE | <=0.5 | S | | S |

More ▼

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.
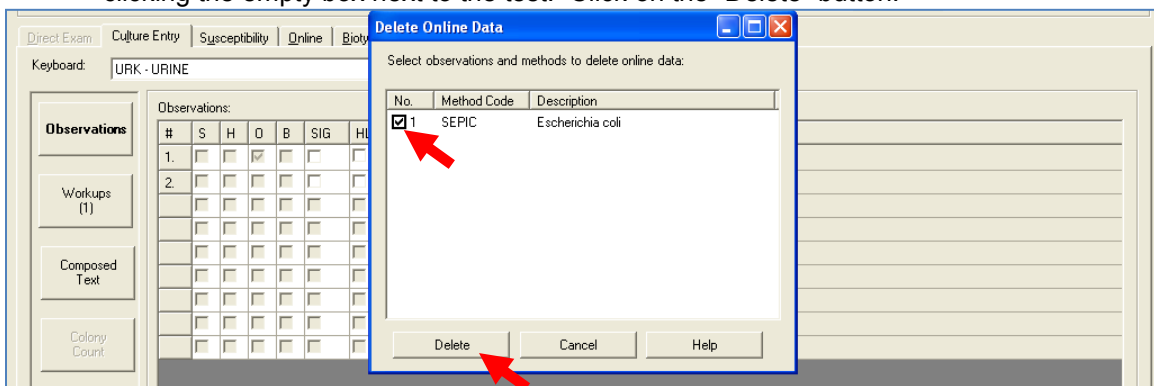
## 3.1 Deleting Data in Epicenter

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.
6. 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.



## 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.
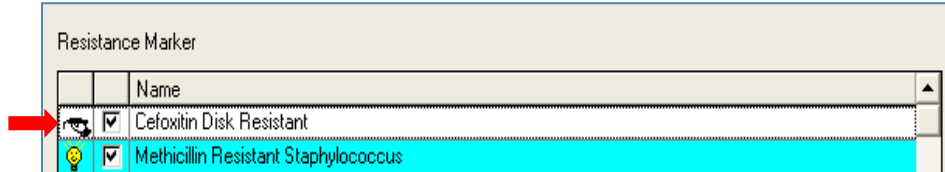


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## 4.0    Cefoxitin Disk Entry

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.



6.  Save changes.  The test should auto-finalize and upload all AST results to LIS.
7.  Accept online data in LIS.
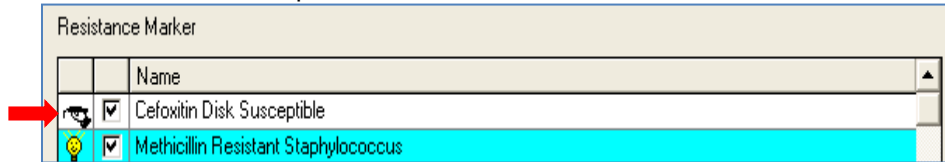
**If the isolate is FOX disk Susceptible:**

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.



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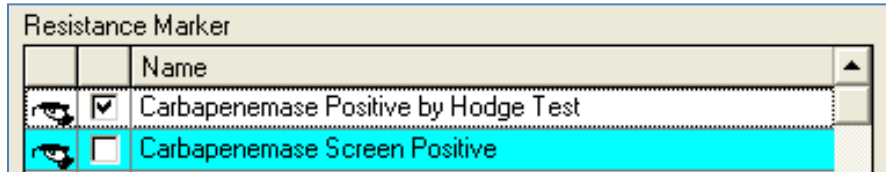7.  Accept online data in LIS.

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# 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.

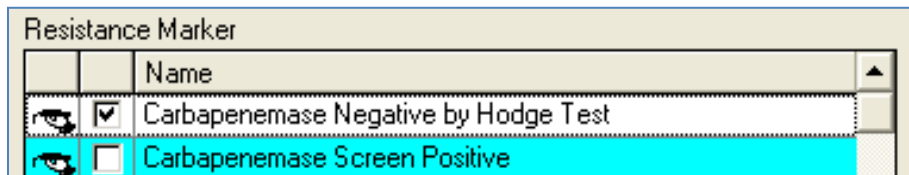## 5.1   If the isolate tests carbapenemase positive by the modified Hodge test:

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.



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.



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.
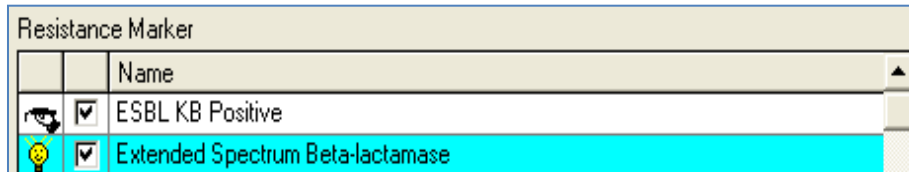9. Remove preliminary KPC comment.  Add ESBL comment if necessary.

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Please see PPM for the most current version of this document.

# 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.

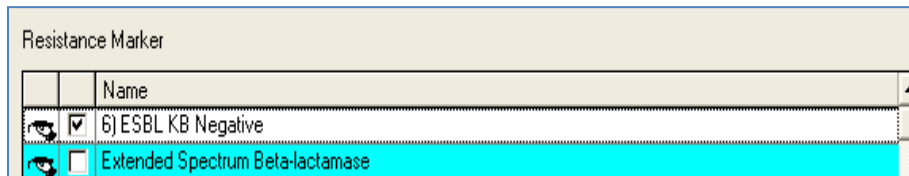## 6.1 If the isolate tests positive for ESBL by disk diffusion:
1. Exit culture in LIS.
2. Access isolate test in Epicenter Specimen Registration.
3. Click on the Isolate tab.
4. Unfinalize the test.
5. Select ESBL KB Positive.



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.



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.

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## 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.