

Comprehensive Antibiogram Toolkit: Phase 2 Antibiogram Development Tool Workbook

This workbook provides data entry forms that generate an antibiogram report based on a user's selection of antibiotics, bacteria, and cultures. The data entry tables and output reports are programmatically generated based on the user's input, all flexible and customizable. The three steps are selection, data entry, and output report. Use the navigation pane on the top of each sheet to navigate between steps—clicking these buttons will automatically activate the spreadsheet changes.

Use Step 1 to enter the nursing home's address and contact information and, in consultation with the medical director, to select the antibiotics, bacteria, and cultures to be included in the antibiogram.

Use Step 2 to enter the number of isolates and percentages for each of the bacteria-antibiotic-culture combinations. The data entry sheet will have changed to reflect the user's selections from Step 1. Each box corresponds to a bacterium, each row to an antibiotic, and each column to a culture type.

Use Step 3 to generate an output report based on the data input in Step 2, which provides the weighted average over all the selected of the isolates/percentages for each antibiotic–bacteria combination.

The lists of antibiotics, bacteria, and cultures are fully customizable, so the rest of the workbook will change to reflect any changes to the size and contents of the lists in the hidden sheet "SelOpts". When making changes to these lists, be sure to use the Excel functions to insert or delete any of the whole rows above the end of the list, marked as "...". The auxiliary columns for bacteria (GRAM) and for antibiotics (ORAL_IV) are important to fill out, as changes here will be reflected in the output report. Similarly, the order of these lists determines the order of the data entry forms and output report.



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Step 1: Select

Step 1 has two components—entering the address and contact information related to the nursing home and laboratory, and selecting from the list of antibiotics, bacteria, and culture types. Use the fields in the upper part of the sheet to enter the address and contact information, and use the multiselect list boxes to select which parameters to use. The “Select All” and “Unselect All” buttons are available for each of the lists. Once the selections are made, press the “Submit” button on top.



Nursing Home:

Name	VA Nursing Home of JP			
Address 1	150 Valparaiso Ave			
Address 2	Suite 100			
City	Houston	TX	Zip	77095

Contacts:

NH Director	Jon Doe
Medical Director	David Pont
Director of Nursing	Kiki Wiki
Infection Control Specialist/Nurse	Phemi Nemorrone
Project Champion	Johannes Fizzle

Reporting Period

From: To:

Select Antibiotics:

- Ampicillin
- Amoxicillin/Clavunate
- Ampicillin/Sulbactam
- Bactrim (Trimethoprim/Sulfamethoxazole)
- Cefazolin
- Cefepime
- Cefoxitin
- Ceftazidime
- Ceftriaxone
- Ciprofloxacin

Select Bacteria:

- Escherichia coli
- Klebsiella pneumoniae
- Proteus mirabilis
- Pseudomonas aeruginosa
- non-MRSA Staphylococcus aureus
- MRSA Staphylococcus aureus
- Staphylococcus coag. Negative
- non-Vancomycin resistant Enterococcus species
- Vancomycin resistant Enterococcus species
- ...

Select Culture:

- Blood
- Urine
- Sputum
- Wound
- Combined
- ...

Step 3: Output Report

The antibiogram report has two sections. The first section repeats the address and contact information for the nursing home, as entered in Step 1. The second section is a calculated table which summarizes the data entry from Step 2, where each row is an antibiotic and each column is a bacterium. Each cell represents the weighted average over all the selected culture types for a given bacteria–antibiotic combination. Furthermore, the bacteria and antibiotics are color-coded—bacteria for gram-negative or gram-positive, and antibiotics for oral or intravenous administration. Note that any bacteria with a total of isolates that is greater than 10 but fewer than 30 will be flagged, since samples with so few data points may be unreliable. Click the “Back” button to return to Step 2.



Nursing Home:

Name	VA Nursing Home of JP
Address 1	150 Valparaiso Ave
Address 2	Suit 100
City, State Zip	Houston, TX 77095

Contacts:

NH Director	Jon Doe
Medical Director	David Pont
Director of Nursing	Kiki Wiki
Infection Control Specialist/Nurse	Phemi Nemorroni
Project Champion	Johannes Fizzle

Reporting Period

From:	2-Dec-10
To:	31-Jan-11

Antibiotic Tested	Escherichia coli	Klebsiella pneumoniae	Proteus mirabilis	Pseudomonas aeruginosa	non-MRSA Staphylococcus aureus	MRSA Staphylococcus aureus	Staphylococcus coag. Negative	non-Vancomycin resistant Enterococcus species	Vancomycin resistant Enterococcus species
# of Isolates†	0	0	0	0	0	0	0	0	0
Ampicillin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Amoxicillin/Clavunate	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ampicillin/Sulbactam	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bactrim (Trimethoprim/Sulfamethoxazole)	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cefazolin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cefepime	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cefoxitin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ceftazidime	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ceftriaxone	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ciprofloxacin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Clindamycin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Erythromycin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gentamicin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Imipenem	0%	0%	0%	0%	0%	0%	0%	0%	0%
Levofloxacin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Linezolid	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nitrofurantoin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Oxacillin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Piperacillin/Tazobactam	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tetracycline	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vancomycin	0%	0%	0%	0%	0%	0%	0%	0%	0%

* Light blue bacteria are Gram-negative, dark blue bacteria are gram-positive. Light pink antibiotics are Oral, dark pink antibiotics are IV.
 * Organisms with between 10 and 30 total isolates should be interpreted with caution, as small numbers may bias the group susceptibilities.
 ‡ Pooled isolates by species Blood, Urine, Sputum, Wound and Combined specimens.
 † MRSA = Methicillin-resistant Staph aureus, which represents a subset of all Staph aureus isolates.

Select Options

This hidden sheet will be made available to the programmer designing the antibiogram tool, and it will be hidden from the nursing homes and laboratories that are supposed to fill out the data. Any time that the sheet is hidden but needs to be accessed, the user can right-click anywhere on the worksheet tabs at the bottom of the workbook and select the “unhide” option. Elect to unhide “SelOpts (hidden)” and press “OK”. The hidden sheet is not intended to be accessed by the nursing homes and laboratories after the tool has been customized and distributed.

The sheet contains three fully customizable lists which determine the construction of the data entry tables and output reports. To add or remove any items, “insert” or “delete” a whole row within a list but above the item labeled “...”. Be sure to complete the information for GRAM and ORAL_IV. These fields are used to color code the output report. Anything can be used in the “ID” column for each of the lists except for values “0” and “A0”. Once all the intended changes have been made, click the “Update” button. A dialog box will appear that will allow the user to move to the next sheet and hide the select options sheet in preparation for distribution.

Antibiotics (SeIA)		
ID	DESCRIPTION	ORAL_IV
A1	Ampicillin	1
A2	Amoxicillin/Clavunate	2
A3	Ampicillin/Sulbactam	2
A4	Bactrim (Trimethoprim/Sulfamethoxazole	2
A5	Cefazolin	1
A6	Cefepime	2
A7	Cefoxitin	1
A8	Ceftazidime	2
A9	Ceftriaxone	1
A10	Ciprofloxacin	1
A11	Clindamycin	1
A12	Erythromycin	1
A13	Gentamicin	2
A14	Imipenem	2
A15	Levofloxacin	1
A16	Linezolid	1
A17	Nitrofurantoin	1
A18	Oxacillin	
A19	Piperacillin/Tazobactam	
A20	Tetracycline	1
A21	Vancomycin	2
A22	...	
Bacteria (SeIB)		
ID	DESCRIPTION	GRAM
B1	Escherichia coli	N
B2	Klebsiella pneumoniae	N
B3	Proteus mirabilis	N
B4	Pseudomonas aeruginosa	N
B5	non-MRSA Staphylococcus aureus	P
B6	MRSA Staphylococcus aureus	P
B7	Staphylococcus coag. Negative	P
B8	non-Vancomycin resistant Enterococcus s	P
B9	Vancomycin resistant Enterococcus speci	P
B10	...	
Cultures (SeIC)		
ID	DESCRIPTION	
C1	Blood	
C2	Urine	

Update

SelOpts (hidden) Step 00 - ReadMe Step 01 - Select Step 02 - Data Entry

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