

Comprehensive Antibigram Toolkit Phase 2 Development

Developing an antibiogram can appear initially to be a complex task beyond the scope of the average nursing home, but experience shows that such development can be accomplished by a nursing home using existing data and resources. The antibiogram development group should include, at a minimum, a program champion, the nursing home's medical director, and the staff member in charge of infection control. Additional people who could be involved in reviewing the antibiogram prior to distribution include interested clinicians and infectious disease consultants.

To develop the antibiogram, the program champion should first understand how antibiograms are constructed and review the steps to obtain the data and collate it into an antibiogram. Second, a data request needs to be made to the nursing home's clinical laboratory, based on industry standard specifications. Third, either the clinical laboratory generates an antibiogram report using an existing software program, or it provides the microbiologic data to nursing home staff who enter the data into a template or an automated antibiogram tool such as the Antibigram Development Tool. The antibiogram (either the one generated by laboratory software or the one created by the nursing home from microbiologic data) should be formatted so that it is specific to the nursing home and complies with quality specifications for antibiograms.

Timeframe: Allow 1–2 months for developing the first antibiogram, from the initial data request to production of an antibiogram.¹

Action Checklist

Nursing Home/Clinical Laboratory Data Agreement

- Because the success of the antibiogram program depends on the analysis of laboratory data, it is vital to review the standing contract that the nursing home has with the contracted laboratory and modify the contract as necessary.
- The contract should explicitly request an antibiogram report. This report is a built-in function in most laboratory software programs, so providing it should not create extra work.
- If the laboratory is unable to provide a computer-generated antibiogram report, then the contract should include a request for the necessary data so that the nursing home can create its own antibiogram report.
- Alternatively, if modifying the contract is not feasible, then the nursing home can request a Letter of Agreement requesting the laboratory results/reports noted above.
- A sample Letter of Agreement is in the Materials Included section of this chapter.

¹ Clinical and Laboratory Standards Institute. Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data; Approved Guideline. Third Ed. M39-A3. 02/05/2009. ISBN Number: 1-56238-692-1



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Nursing Home/Clinical Laboratory Nursing Home/Clinical Laboratory Agreement on Request for Specific Laboratory Results

- A data request should be submitted to the clinical laboratory. The data request should include details on all of the nursing home's residents during a particular timeframe. Several other technical specifications should be included (see Sample Data Request in the Materials Included section of this chapter). The nursing home should ask if the clinical laboratory can print the antibiogram using its current software program; otherwise, the nursing home should request that the laboratory send the facility data in raw form so that nursing home staff can enter the information into an existing antibiogram template or into an automated antibiogram tool such as the one included in the Comprehensive Antibiogram Toolkit.
- Antibiogram specifications are in the Materials Included section of this chapter.
- A followup discussion about the data request should occur between the program champion at the nursing home and the contact at the clinical laboratory. This discussion should include the laboratory staff member who understands the laboratory's data systems. Review the data request and the ability of the laboratory to produce the data in a common computer format (e.g., Microsoft Word or Excel). Ensuring that both parties understand and agree on the data request can help avoid wasted time with multiple data requests.

Obtain Summary Data From the Clinical Laboratory

- The clinical laboratory should be able to generate summary antibiotic sensitivity data that comprise the antibiogram. For sensitivity guidelines, see the Clinical and Laboratory Standards Institute at <http://www.clsi.org>. The clinical laboratory should save these data in a common computer format. The laboratory should transmit the antibiogram data to the program champion electronically. Generating the data and transferring them in a computerized format will save work for the nursing home staff who will develop the antibiogram report.

Develop a Draft Antibiogram

- If the laboratory cannot generate the antibiogram, the program champion or a designated staff member could develop an antibiogram. It is most efficient to use an automated antibiogram development tool such as the one provided with this toolkit.
- Step-by-step instructions for creating the antibiogram, using the automated Antibiogram Development Tool, are provided in the Antibiogram Development Tool Workbook in the Materials Included section of this chapter.
- In addition, a sample printout of a laboratory report containing the necessary data elements to generate the antibiogram is provided for the user's review (see Materials Included section of this chapter). Please note that the format of the reports will differ across laboratories, but all the reports should contain the elements needed to create the nursing home's antibiogram.
- The antibiogram should conform to important quality standards, as detailed in the antibiograms specifications attachment.

Modify Antibiogram To Meet the Nursing Home’s Specific Needs

- Finally, the antibiogram draft should be modified to address the nursing home’s specific needs. A series of questions should be reviewed, such as which antibiotics should be listed on the antibiogram and in what order they should be listed (based on use, formularies, etc.). Additionally, the antibiogram report can be modified to make it consistent with other documentation within the nursing home.
- A checklist for developing nursing home-specific antibiogram modifications and a sample antibiogram are in the Materials Included section.

Materials Included

Nursing Home/Clinical Laboratory Communication Tools

- Sample Letter of Agreement
- Sample Data Request
- Antibiogram Specifications

Antibiogram Development Tools

- Antibiogram Development Tool Workbook
- Antibiogram Tool
- Sample Laboratory Data Printout
- Checklist for Identifying Nursing Home-Specific Antibiogram Modifications
- Sample Antibiogram