



Nursing Home Antimicrobial Stewardship Guide

Help Clinicians Choose the Right Antibiotic

Toolkit 1. Working With a Lab To Improve Antibiotic Prescribing

Tool 2. Step-by-Step Guide to Working With a Laboratory To Obtain an Antibigram

1. Contact the nursing home's lab to inquire about creating an antibiogram

Identify the correct contact at the laboratory to determine if it is able to create an antibiogram report. Most labs have this capability and producing the report requires little additional effort for lab staff. As a result, many labs are able to provide an annual antibiogram report at little or no additional charge. If your lab cannot provide an antibiogram, the Concise Antibiogram Toolkit and the Comprehensive Antibiogram Toolkit explain ways that nursing home staff can create their own antibiogram.

At least 12 months of culture data are typically needed, so the lab must have been under contract to the nursing home for at least that many months. In rare circumstances, nursing homes may use more than one lab. In that case, use the lab with the most data.

Talk with the appropriate lab personnel, typically the lab's medical staff (e.g., microbiologist or medical director), the business office, or the marketing office. These discussions should cover the lab's capacity to produce antibiograms that meet the nursing home's needs, the time needed for the lab to create or update the antibiogram, and the costs involved, if any.

2. Make an agreement with the lab to create an antibiogram, if needed

Most labs will provide an antibiogram as a routine part of their service to their customers and may not require any additional paperwork or payment. If an agreement is needed, the medical director, together with nursing home management, must review the standing agreement or contract that the nursing home has with the laboratory and modify the contract as necessary.

The contract should explicitly request an antibiogram report created in accordance with the criteria outlined below. Ask if the lab can produce a report that is already formatted for printing in an acceptable style.

If modifying the contract is not feasible, then the nursing home can request a Letter of Agreement requesting the antibiogram report. Nursing home management should review and approve the Letter of Agreement before it is sent to the lab. A sample Letter of Agreement is provided in tool 3.



3. Establish the specifications for the antibiogram

The lab should create the antibiogram in accordance with quality standards as established by the Clinical and Laboratory Standards Institute (CLSI) guideline number M39 (see www.clsi.org). The lab will likely already be familiar with these standards, but it may be helpful to refer to the guideline and use a copy of the specifications outlined below during talks with the lab. These specifications provide a summary of the key requirements of the CLSI guideline.

These standards are updated periodically. Every few years, ask the laboratory about whether the standards have been changed.

The current 2014 CLSI standards specify that the antibiogram:

- Cumulates and analyzes one year of data and is updated at least annually
- Includes only final, verified test results
- Includes only diagnostic isolates, not surveillance isolates
- Includes only the first isolate of each species for each resident within the time period
- Includes only organisms with at least 30 isolates tested; when fewer than 30 isolates are obtained in the course of the year, it is permissible to include isolates collected over a longer period and to clearly indicate this in a footnote to the antibiogram
- Presents susceptibility results only for antimicrobial agents that are routinely tested and are clinically useful
- Presents data as the percentage of isolates that are susceptible to each antibiotic agent (%S) and does not include percentage with intermediate susceptibility (%I)
- Follows current CLSI specifications for micro-organism-specific recommendations

The requirement for a minimum of 30 isolates of each organism may be very difficult for nursing homes to meet even when more than one year's data is used. If this is the case, you may want to consider including an even longer period of time or lowering the threshold to 20 isolates. The antibiogram should always clearly indicate any changes from the CLSI standards and include a note that these results should be used with caution as they are less reliable.

4. Specify the format of the antibiogram

Talk with lab staff about the possible formats for the antibiogram report and decide which format works best for the nursing home. Tool 4 provides examples of antibiogram reports. The lab may be able to provide a spreadsheet or word processing file, which allows the nursing home to adapt the format for its own uses, or a formatted PDF file, which cannot accidentally be altered. It may also be able to provide the antibiogram in multiple formats.

The lab may be able to produce a report formatted to your exact specifications, including warnings about organisms with less than 30 isolates. However, they may charge a fee for the work required to reformat the standard report produced by the lab's software. The medical director should work with nursing home leadership to determine whether it is best for the lab to do this or whether this could be done by staff at the nursing home.