

How to use an antibiogram

Information for clinicians

This fact sheet has been developed to assist clinicians use antibiograms to inform local prescribing practices and support their antimicrobial stewardship (AMS) service.

Introduction

The National Safety and Quality Health Service [Preventing and Controlling Infections Standard](#) includes actions to prevent and contain antimicrobial resistance (AMR) and requires health service organisations to implement an AMS program. Antibiograms can be used within these programs to guide the development of local empiric antimicrobial prescribing guidelines, inform formulary management and monitor local resistance trends over time. Antibiogram data may also contribute to the development and review of regional and national prescribing guidelines.

For more information see [What is an antibiogram?](#).

Local and national importance

Local antibiograms reflect resistance patterns of microorganisms in a particular health service organisation.

Case example: Interpreting a local antibiogram to inform local prescribing

Hospital A produces annual antibiograms. Upon reviewing this year's antibiogram, the AMS service identified that 44% of community *Staphylococcus aureus* isolates were methicillin resistant. This finding was considered by the local AMS Advisory Committee and the hospital's guidelines were subsequently updated. Trimethoprim-sulfamethoxazole is now recommended as first-line empiric therapy for purulent cellulitis without systemic features, while vancomycin is recommended for cases with systemic features. Flucloxacillin remains recommended as first-line for non-purulent and mild cellulitis.

AMR data are captured by [Australian Passive AMR Surveillance \(APAS\)](#) through voluntarily participating pathology services. Participants have access to their local data to create cumulative antibiograms for local reporting. The Commission also reports on national AMR trends using APAS data. Analysis of APAS data can show geographical and organism-related trends for AMR in Australia. APAS data are also considered as part of the development of antimicrobial prescribing recommendations in the [Therapeutic Guidelines: Antibiotic](#).

Considerations for interpreting an antibiogram

Antibiograms should only be interpreted by clinicians who have a thorough understanding of both clinical and microbiological factors to inform antimicrobial therapy. Interpretation should be conducted in consultation with a microbiologist, infectious disease physician or an AMS team.

Antibiograms are intended to support empiric antimicrobial therapy at a population level and are not designed to guide management for individual patients. Prescribing decisions should remain person-centred and be informed by the patient's clinical assessment, site of infection, risk factors, preferences and available microbiological information.

Key considerations

- Understanding local epidemiology is important when selecting empirical antimicrobial therapy. Health service organisations should consider local antibiograms and *Therapeutic Guidelines: Antibiotic* when developing local treatment protocols.
- An antibiogram provides a snapshot of aggregated data (antimicrobial susceptibility patterns) over a defined period, usually over one year. A single antibiogram shows the proportion of isolates that are resistant to a specific antimicrobial in a given time period (e.g. one year), but it cannot determine whether resistance is increasing or decreasing over time. Resistance trends may be assessed by comparing antibiograms from multiple years.
- Antimicrobial susceptibility testing methods are validated against the reference standard. Interpretation of susceptibility testing results should be based on either the European Committee on Antimicrobial Susceptibility Testing ([EUCAST](#)) or the Clinical and Laboratory Standards Institute ([CLSI](#)) breakpoints.
- Cumulative facility-wide antibiograms that aggregate data from diverse patient populations and locations can obscure differences in resistance patterns. Antibiograms by population, age or hospital unit may have more relevant information to support antimicrobial selection.
- An antibiogram is specific to that facility, and its findings should not be applied to another facility (for example, hospital A's antibiogram cannot be used to guide hospital B's local guidelines).
- Culturing practices can influence antibiogram data; for example, uncomplicated infections are often not cultured which may bias results toward more resistant organisms.
- Antibiograms may be less useful when guiding empiric therapy in patients with recent or recurrent infections.
- In smaller health service organisations, particularly in rural and remote regions, the number of clinical isolates may be inadequate to prepare an annual antibiogram. In these settings, options may include developing multiple year antibiograms or utilisation of regional data available through the [HOTspots platform](#).



Resources

- [Antimicrobial Stewardship in Australian Health Care \(the AMS Book\)](#)
- [APAS Data Explorer](#)
- [CARAlert Data Explorer](#)
- [CSIRO HOTspots](#)
- [Specification for a Hospital Cumulative Antibigram](#)
- [Therapeutic Guidelines: Antibiotic](#)
- [What is an antibiogram?](#)

For more information

Please visit: safetyandquality.gov.au/AMS

© Australian Commission on Safety and Quality in Health Care 2026