

# Antimicrobial Prescribing Clinical Guideline

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# Antimicrobial Prescribing Clinical Guideline

## 1. Introduction

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Antimicrobial resistance poses a major threat to public health with infections from resistant organisms compromising the safety and quality of health care. An important strategy in combatting the development and spread of antimicrobial resistance is optimisation of prescribing of antimicrobials in all clinical settings, ensuring antimicrobials are prescribed and utilised according to principles of evidence based medicine.

Medical staff employed by SA Health should be appropriately trained and supported to optimise the quality use of antimicrobials, in accordance with up to date clinical practice, and with program guidance as outlined in the National Safety and Quality Health Service Standards Second edition (Standards 3.15 and 3.16). (1)

## 2. Background

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Education of clinicians regarding the principles of prudent use of antimicrobials is an important clinical strategy to optimise patient outcomes and minimise adverse consequences of antimicrobial use, including the development and spread of resistance. Current evidence clearly demonstrates the inappropriate use of broad-spectrum antibiotics is associated with the selection of antibiotic-resistant bacteria and the risk of *Clostridium difficile* infection. Antimicrobials should be used for the shortest duration possible that gives an optimal clinical outcome, and should have the narrowest spectrum of activity targeted at the pathogen concerned.(2)

Clinical guidelines on the use of antimicrobials facilitate uniformity in prescribing practice. The current version of the *Therapeutic Guidelines: Antibiotic* (3) is endorsed by SA Health as the primary basic reference for antimicrobial prescribing, and should be available to prescribers in all clinical settings. The South Australian expert Advisory Group on Antimicrobial Resistance ([SAAGAR](#)), develops [statewide guidelines](#) for a range of indications where antimicrobial therapy is required. Locally developed clinical guidelines may be necessary for some conditions to reflect practice differences and antimicrobial resistance patterns at a state or local health network (LHN) level. LHN antimicrobial stewardship (AMS) and drug and therapeutics (DTC) committees must endorse these for local use, and where possible should be in line with prescribing guidelines across all SA Health facilities.

The SA Pathology microbiology laboratory, or other contracted laboratories, will provide guidance for directed therapy. Where appropriate, these laboratories should utilise systems of cascade susceptibility reporting to steer prescribers towards the use of appropriate narrow spectrum antimicrobial agents wherever possible.

The assistance of specialist infectious diseases, clinical microbiology and/or clinical pharmacy services should be available to enable timely clinical consultation, feedback and education to prescribers.

### 3. Definitions

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**ACSQHC:** Australian Commission for Safety and Quality in Health Care.

**AMS:** Antimicrobial Stewardship. An effective approach to improving antimicrobial use in hospitals with a view to optimising patient outcomes and minimising adverse consequences of their use (including antimicrobial resistance, toxicity and unnecessary costs).

**Antimicrobial:** a chemical (medication) used for the management of human disease which has an action to kill or stop the replication/growth of microbiological organisms. This includes medications which are being used for a non-infectious reason if they are known to also possess antimicrobial activity.

**Clinical staff** refers to: all medical officers, enrolled and registered nurses / midwives, and registered allied health professionals including pharmacists.

**DTC:** Drug and Therapeutics Committee

**EPAS:** Enterprise Patient Administration System, a system incorporating electronic medicines prescription.

**LHN:** Local Health Network.

**MINDME:** an acronym referring to the 'antimicrobial creed', a set of guiding principles for antimicrobial therapy developed by the Therapeutic Guidelines: Antibiotic. Specifically, it stands for:

- M** Microbiology guides therapy wherever possible
- I** Indications are evidence based
- N** Narrowest spectrum required
- D** Dosage appropriate to the site and type of infection
- M** Minimise duration of therapy
- E** Ensure monotherapy in most cases

**NSQHSS:** National Safety and Quality Health Service Standards.

**Prescriber refers to:** a registered health professional qualified to prescribe therapeutic substances (medical officer, dentist or nurse practitioner).

**SAAGAR:** the South Australian expert Advisory Group on Antimicrobial Resistance. SAAGAR's role is to review and promote the safe and appropriate use of antibiotics in SA, including fostering the development and review of antimicrobial guidelines for statewide use.

**SAMF:** South Australian Medicines Formulary - a list of core medicines which are approved for use within SA public hospitals and health services.

**SAPPG:** South Australian Perinatal Practice Guidelines - outline the principles for managing pregnancy and newborn related conditions and/or performing a procedure related to pregnancy and/or the newborn.

**Therapeutic monitoring:** refers to the individualisation of dosage by maintaining plasma or blood drug concentrations within a target range.

## 4. Principles of the NSQHSS standards

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1. Standard 1 aims to ensure care provided by the clinical workforce is guided by current best practice and the clinical workforce have the right qualifications, skills and approach to provide safe, high quality health care.
2. Standard 3 aims to prevent patients from acquiring preventable healthcare associated infections and effectively manage infections when they occur by using evidence-based strategies. The safe and appropriate prescribing of antimicrobials (Antimicrobial Stewardship) is a key element of preventing healthcare associated infections.
3. Standard 4 aims to ensure that competent clinicians safely prescribe, dispense and administer appropriate medicines (in this case, antimicrobials) and patients and/or carers are informed regarding treatment options, benefits and associated risks.

## 5. General

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The principles of the MINDME 'antimicrobial creed' and the Clinical Care Standard for Antimicrobial Stewardship Quality Statements (4) are to be considered when prescribing antimicrobials for patients with, or at risk of, infection.

1. In life-threatening conditions due to a suspected bacterial infection, give prompt empiric antibiotic therapy without waiting for the results of microbiology tests.
2. Take all reasonable steps to ensure that an appropriate clinical sample is obtained for microbiological investigation **prior** to commencing antimicrobial therapy.
3. If microbiology tests are conducted to identify a suspected bacterial infection, ensure results are reviewed in a timely manner (consistent with bacterial incubation periods and time to clinical response) and the patient's therapy modified if indicated.
4. Adhere to the latest version of the *Therapeutic Guidelines: Antibiotic* or endorsed local clinical guideline (e.g. guidelines developed by SAAGAR) when managing patients with infections, especially when selecting empirical therapy. If in doubt, consult an infectious diseases physician/clinical microbiologist for advice.
5. Modify antimicrobial therapy according to each patient's history of medication allergy or adverse drug reaction.
6. Use a planned approach to antimicrobial therapy, by recording the clinical reason for antimicrobial therapy, drug name, route of administration, and its expected duration or point of review on the medication chart or in EPAS and in case notes.
7. Ensure empiric antimicrobial therapy is reviewed and changed to a narrower spectrum agent where appropriate, as soon as possible following availability of microbiology results.
8. Prescribe antimicrobials according to the South Australian Medicines Formulary (SAMF) and EPAS order sets, complying with LHN restricted antimicrobial protocols where these apply, or seek exemption from the LHN AMS committee where desired prescribing practices are non-compliant with restrictions. Seek advice from a clinical microbiologist or specialist infectious diseases physician as required.
9. Switch from parenteral to oral route for drug administration whenever it is safe and clinically appropriate to do so, in accordance with SA Health [IV to Oral Switch Clinical Guideline](#)
10. Ensure therapeutic monitoring for safety and efficacy occurs in all patients, and that their therapy is modified as appropriate.

11. Provide adequate information and opportunity for discussion with patients, their families and carers regarding their condition and treatment options, which may or may not include antimicrobial therapy.
12. If antibiotics are prescribed, ensure patients or carers are informed (either by the prescriber or another suitably qualified health professional) about dosing requirements, length of treatment, potential side effects and a plan for follow up options in a format and language that they can understand.
13. Prescribe surgical prophylactic antibiotics in accordance with the latest version of *Therapeutic Guidelines: Antibiotic* or locally developed evidence based guidelines (e.g. SAAGAR guidelines, SAPPG), taking into consideration the patient's clinical condition.

## 6. Workforce implications

Adequate resources and training are required for the implementation of this guideline throughout each LHN.

LHNs should provide training programs for prescribers on the principles of Antimicrobial Stewardship, and this *Antimicrobial Prescribing Clinical Guideline* should be included in all orientation packages for new clinical staff at SA Health facilities.

Mechanisms for timely consultation with infectious diseases or clinical microbiology specialists should be established within each LHN.

Prescribers should ensure sufficient time is allocated during patient visits for review of laboratory results, and accurate and clear documentation of medical records as outlined in the General Principles section above.

## 7. Safety, quality and risk management

The Australian Commission for Safety and Quality in Healthcare (ACSQHC) has developed an Antimicrobial Stewardship Initiative to improve the safe and appropriate use of antimicrobials in Australian hospitals. Resources for implementation of AMS programs, prescribing e-learning modules and accreditation workbooks are available from the ACSQHC website. When appropriate resources have been developed by ACSQHC, SA Health adopts these initiatives.

The SAMF provides a list of core medicines which are approved for use within SA Public Hospitals and health services. Through a statewide approach to the availability of medicines, SA Health aims to optimise the quality use of medicines, improve and promote equity of access to medicines for patients and increase the cost-effectiveness of medicine use across SA Health.

### National Safety and Quality Health Service Standards

									
<u>National Standard 1</u>	<u>National Standard 2</u>	<u>National Standard 3</u>	<u>National Standard 4</u>	<u>National Standard 5</u>	<u>National Standard 6</u>	<u>National Standard 7</u>	<u>National Standard 8</u>	<u>National Standard 9</u>	<u>National Standard 10</u>
<u>Governance for Safety and Quality in Health Care</u>	<u>Partnering with Consumers</u>	<u>Preventing &amp; Controlling Healthcare associated infections</u>	<u>Medication Safety</u>	<u>Patient Identification &amp; Procedure Matching</u>	<u>Clinical Handover</u>	<u>Blood and Blood Products</u>	<u>Preventing &amp; Managing Pressure Injuries</u>	<u>Recognising &amp; Responding to Clinical Deterioration</u>	<u>Preventing Falls &amp; Harm from Falls</u>
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## 8. Eligibility criteria

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### Inclusion

All prescribers and clinical staff involved with prescribing decisions (employed directly or contracted by SA Health) should adhere to this guideline. All other clinical staff need to be aware of antimicrobial stewardship principles for safe, responsible and appropriate use of antimicrobials.

### Exclusion

All other staff.

## 9. References

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1. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards 2nd ed. Sydney [<https://www.safetyandquality.gov.au/wp-content/uploads/2017/12/National-Safety-and-Quality-Health-Service-Standards-second-edition.pdf>]; 2017.
2. Australian Commission on Safety and Quality in Health Care. Antimicrobial Stewardship in Australian Health Care 2018. Sydney [<https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/antimicrobial-stewardship/book/>]; 2018.
3. Antibiotic Expert Group. Therapeutic Guidelines: Antibiotic (version 15). Melbourne; 2014.
4. Australian Commission on Safety and Quality in Health Care. Antimicrobial Stewardship Clinical Care Standard. Sydney [<https://www.safetyandquality.gov.au/publications/antimicrobial-stewardship-clinical-care-standard/>]; 2014.

## 10. Document ownership & history

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