

Antimicrobial Shortages

About this resource

This resource provides general information for acute and primary care prescribers and pharmacists on how to manage shortages of antimicrobials in acute and primary care settings.

Specific advice on alternative agents to use during shortages is not included. A list of [useful resources](#) is included for information.

Why are antimicrobial shortages important?

Issues with availability of medicines (known as stock shortages) are challenging for clinicians because patients need to receive appropriate therapy. Medication shortages have become an increasing problem, particularly since the COVID-19 pandemic began, and antimicrobials are commonly affected.¹ Shortages can occur with little warning. They can be due to manufacturing issues, supply chain problems or an unexpected increase in demand.

Medication shortages can impact the quality and effectiveness of antimicrobial therapy, including:

- Increased medication safety risks – e.g. errors due to unfamiliar medicines.
- Sub-optimal treatment options – e.g. use of alternative antimicrobials that may be less effective or more toxic.
- Increased treatment costs – e.g. alternative agents, staff to manage the shortage.
- Increased risk of antimicrobial resistance – e.g. use of broader-spectrum antimicrobials may be required.

How are clinicians informed about medication shortages?

Medication shortages are reported by pharmaceutical companies to the [Therapeutic Goods Administration \(TGA\)](#) and published on the Medicine Shortage Database. Information about shortages may also come from a wholesale supplier, or from the organisation in a hospital setting.

How to manage an antimicrobial medication shortage

Collaboration between prescribers, pharmacists and consumers is key to navigating local shortages.

When advised of an antimicrobial medication shortage, **pharmacists** can:

- Review what stock is available and make a forecast of antimicrobial usage from pharmacy dispensing or prescribing reports.
- Communicate the medication shortage to prescribers in their hospital or surrounding suburbs in primary care, if appropriate.
- Consider if there are alternative brands, strengths of the formulation or a different formulation of the same antimicrobial.
- When considering alternatives, review whether the dose and strength of the formulation need adjusting e.g. a lower concentration of a suspension may require a larger quantity to complete the course.
- Investigate TGA instruments that assist with shortages ([see below](#)).



If all options for supply of the same antimicrobial are exhausted, then **prescribers** can:

- Consider an alternative therapy, [Therapeutic Guidelines](#): Antibiotic includes information on alternative antimicrobial agents to ensure appropriate prescribing that minimises the risk of antimicrobial resistance.
- For some conditions there may be no alternative therapies (due to patient tolerability or lack of effective options), seek urgent advice from prescribers, pharmacists and/or infectious diseases experts.
- Provide pharmacists with their direct contact information to facilitate timely communication.
- If the shortage is for an intravenous antimicrobial, an oral switch may be appropriate. [Therapeutic Guidelines](#): Antibiotic has further information.

Both **pharmacists** and **prescribers** should:

- Consider the flow-on effect of shortages e.g. the piperacillin-tazobactam shortage caused issues with cefepime.

A flowchart is [attached](#) to show how prescribers and pharmacists can manage shortages.

Specific considerations for primary care

Community pharmacists should consider contacting local prescribers early about shortages and ask if they would like to leave standing orders or instructions for the pharmacist. This may not be practical in some settings. [Primary Health Networks \(PHNs\)](#) can facilitate communication.

Specific considerations for acute (hospital) care

If the antimicrobial is on imprest, consider moving stock to one location to better manage the shortage. Restricting use for specific indications or patient populations may also be considered. Hospitals may need to provide the antimicrobial medicine at discharge if it is unavailable in the local community.

Shortages are an opportunity for [antimicrobial stewardship](#). If you are based in a health service organisation, work with your local antimicrobial stewardship team or committee to develop guidance that reflects local formulary and recommended alternative therapies.

Specific information about medication formulations:

1. Encourage the administration of oral tablets or capsules

- Consider recommending an oral lubricant gel to assist with swallowing tablets or capsules.
- Check "[Don't Rush to Crush](#)" to see if the tablet or capsule can be crushed or dispersed.
- If crushing or dispersing the solid oral dosage form is appropriate, provide advice on masking the taste. Some tips include:
 - Using cordial, jam, apple sauce or yoghurt as a vehicle.
 - Using a small amount of food or drink, as the whole amount must be consumed to ensure that the entire dose is provided.
- After crushing/dispersing the tablet or capsule ensure it is administered immediately. Don't let it sit around.

2. Consider pharmacy compounded alternatives for liquid formulations

- Compounding pharmacies may be able to prepare liquid formulations.

TGA instruments that can assist with stock management and be used to access alternative drugs in a shortage:

1. Serious Scarcity Substitution Instruments

[Serious Scarcity Substitution Instruments \(SSSIs\)](#) issued by the TGA allow community pharmacists to substitute specific medicines without prior approval from the prescriber if the permitted circumstances within the SSSIs are met. This means that, patients can receive their medicines from their pharmacist without delay through an SSSI, and treatments are not interrupted. However, this does not apply to hospital pharmacists, as hospital drug committee and/or state and territory health departments will guide hospitals.

2. Access to overseas registered alternatives: Section 19A of the Therapeutic Goods Act 1989

When there is a shortage of a medicine registered on the [Australian Register of Therapeutic Goods \(ARTG\)](#), the TGA may approve the temporary supply of an overseas-registered alternative under section 19A of the [Therapeutic Goods Act 1989](#). This allows clinicians to temporarily access specific overseas

registered alternatives without **Special Access Scheme (SAS)** approval. S19A products are not automatically listed on the Pharmaceutical Benefits Scheme (PBS), which means for some S19A products, there may be additional costs to the patient. A list of **PBS-subsidised S19A medicines** is available. Issues may arise if there are export bans on the product in the country of origin.

Special Access Scheme

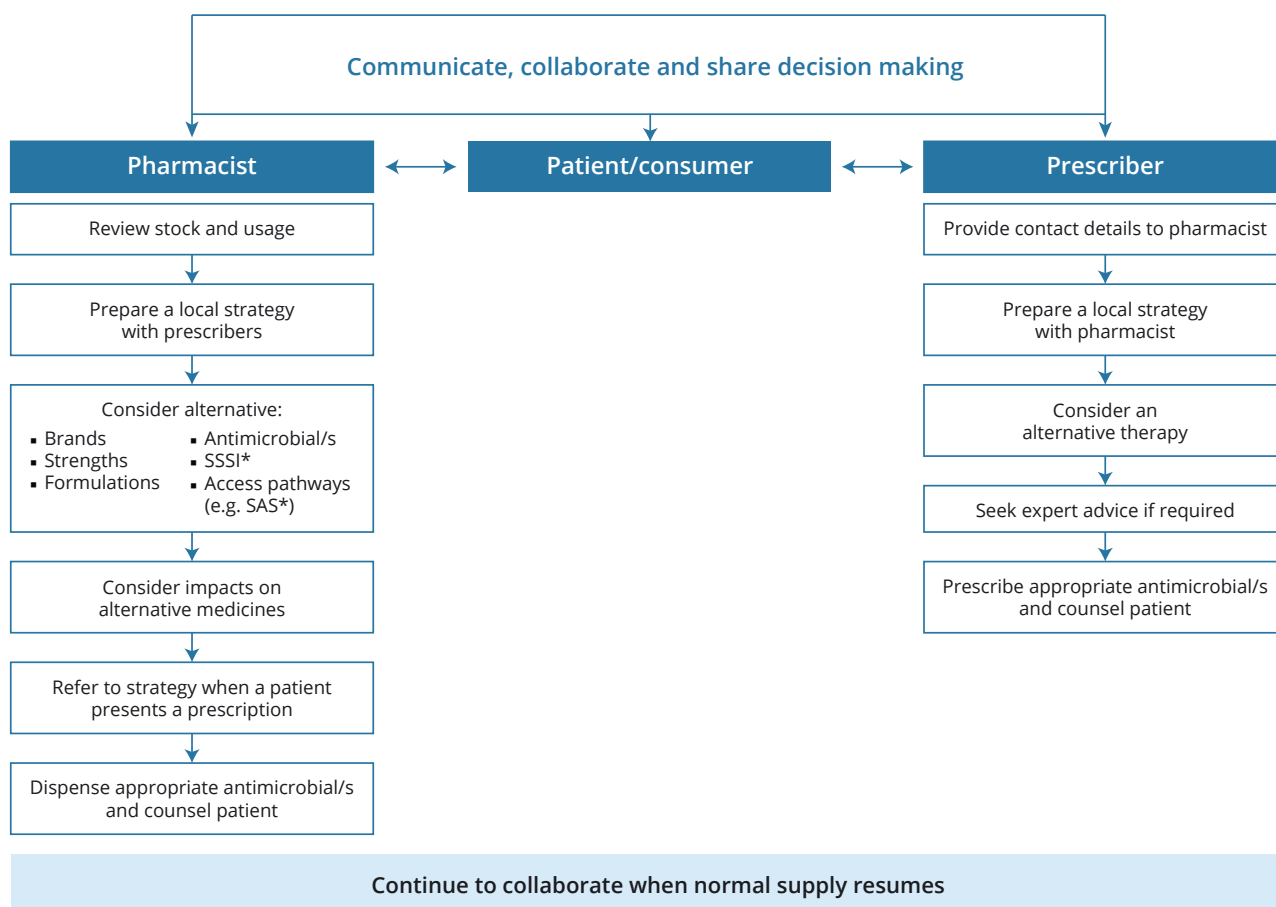
The **SAS** allows certain health practitioners to access therapeutic goods (such as medicines, medical devices or biologicals) that are not included in the ARTG for a single patient. Therapeutic goods that are not included in the ARTG (and are not otherwise exempt from being in the ARTG) are described as 'unapproved'. To access the SAS, a form must be submitted to the TGA. There are three separate forms depending on the clinical

situation. SAS medicines are only available from certain wholesalers.

Labelling on stock accessed via the SAS may be in another language or have a suboptimal presentation. Risks can be minimised by ensuring clear and thorough dispensing label directions. Refer to the **National standard for labelling dispensed medicines**. Additional administration instructions can also be provided. Consider consulting a medicines information pharmacist for assistance.

SAS products do not attract a PBS subsidy, this may result in significant cost implications for the patient, which may impact compliance and/or the need to reconsider the treatment approach.

Managing Antimicrobial Shortages



*Special Access Scheme; Serious Scarcity Substitution Instrument

Useful resources

- **National Centre for Antimicrobial Stewardship** – (ncas-australia.org) – Medication Shortage Fact Sheets. This site provides information about prescribing choices and alternatives for common infections.
- **National Centre for Antimicrobial Stewardship** – (ncas-australia.org) – Stock shortages.
- **Therapeutic Guidelines** Antibiotic.
- **Antibiotic prescribing in primary care: Therapeutic Guidelines summary table 2023** (freely accessible).
- **AMH Children’s Dosing Companion** – Administration of medicines to children.
- **Shortages | Therapeutic Goods Administration (TGA)** – Consider subscribing to receive regular updates.
- **Serious Scarcity Substitution Instruments (SSSIs) Therapeutic Goods Administration (TGA).**
- **Central Australian Rural Practitioners Association (CARPA) Standard Treatment Manual.**
- **Don’t Rush to Crush – The Society of Hospital Pharmacists of Australia (shpa.org.au).**
- **Safe selection and storage of medicines Australian Commission on Safety and Quality in Health Care.**
- **Principles for the safe selection and storage of medicines – Guidance on the principles and survey tool. Sydney: ACSQHC; 2020.**
- Find your local Primary Health Network – visit <https://www.health.gov.au/our-work/phn/your-local-PHN>.

References

1. Shafiq N, Pandey AK, Malhotra S, et al Shortage of essential antimicrobials: a major challenge to global health security BMJ Global Health 2021;6:e006961.