

The Case for Restricting Antimicrobials in Healthcare

The development of antimicrobial restrictions is considered a core strategy of antimicrobial stewardship (AMS) in Australian hospitals.¹ Effective models of restriction can have a significant impact on prescribing behaviours and improve the appropriateness of prescriptions by creating a 'choice architecture' that is engineered towards more prudent use.² Successful implementation of antimicrobial restriction policy has also been associated with significant cost savings and reduced rates of resistance in key healthcare-associated pathogens,^{3,4} and often has an immediate and observable impact.⁴



How can we measure the impact of a restriction policy in our small facility?

Pre- and post-intervention data for antimicrobial usage often shows dramatic changes as a result of new (or newly enforced) restrictions. This effect may decline over time however, particularly if staff do not see the value of complying with restriction policy. Periodic snapshot audits should be used to track the proportion of antimicrobial prescriptions that are compliant with restriction policy and over time should contribute to the ongoing evaluation and modification of restriction policy. *Indicators for Quality Use of Medicines in Australian Hospitals - Indicator 2.2* (available from the [NSW Therapeutic Advisory Group website](#)) is a tool designed to facilitate this type of audit.

As approval-based requests are likely to be relatively infrequent in small facilities, an approver may be able to keep a log of requests for restricted agents. Patterns of requests and their approval outcomes can then be reviewed to better direct education and training for antimicrobial prescribers at a local or LHD level.

AMS teams may wish to obtain qualitative data by surveying medical staff with regards to the impact of restrictions on their prescribing. Such opportunities provide valuable feedback and insight to small hospitals which assists in further developing the AMS program plan.

CONSTRUCTING A LOCAL RESTRICTION POLICY

Before developing or reviewing an antimicrobial restriction policy, each facility must construct a clear picture of available personnel and off-site contacts, their time constraints, existing duties and respective levels of infectious diseases expertise. The committee that oversees AMS needs to consider local capacity to manage restrictions both within and outside of business hours. It may be wise to examine the processes of other hospitals, evaluating what works well (or not so well) in facilities of a comparable size and resource base.

A finalised restriction policy ought to provide information that informs or supports the practical application of restrictions. Out-of-hours access to restricted antimicrobials should be outlined, as should default procedures for when circumstances cause a breakdown of the restriction model (e.g. absence of an approver). Policy documents

should also provide clear conflict resolution pathways that have been endorsed at a facility or LHD level.

When making decisions about restricting individual agents, your AMS Committee (or equivalent) should consider the following:

- ▶ **What is the rationale for restriction?**
- ▶ **What is the most appropriate type of restriction?** (E.g. criteria-based, expert approval, prescriber declaration)
- ▶ **Can restriction of this agent be managed with existing AMS resources?**
- ▶ **What are the likely gains from this restriction?** (E.g. cost savings, altered local resistance patterns)
- ▶ **What are the risks associated with this restriction?** (E.g. impaired access to therapy in life-threatening conditions)

For more advice, see the [List of Recommended Antimicrobial Restrictions](#) available on the [QUAH website](#).

MODELS OF ANTIMICROBIAL RESTRICTION

Antimicrobial restriction policy should follow a set framework to organise and understand restrictions and approvals. The most successful models of restriction are those designed according to the specific needs and resources of an individual facility, and often involve grouping of antimicrobials into a specific level or category of restriction.

Basic Category Model **A B C**

Category models classify antimicrobial agents into specific groups according to the nature of their restriction. For example, **Category A** may contain agents for which expert approval is mandatory while **Category B** contains agents with pre-approved access for nominated indications or specialties. (**Category C** may list all other antimicrobials.) Some facilities may create categories based on whether or not the decision to prescribe requires an entry in the local electronic approval system, while others may classify agents as simply 'restricted' or 'unrestricted'.

Traffic Light Model



A traffic light model classifies antimicrobials according to a relative degree of restriction. **GREEN** antimicrobials are unrestricted, indicating agents which are appropriate for regular access. **ORANGE** antimicrobials are restricted, prompting the prescriber to 'proceed with caution' as the agent has limitations placed on its use or accessibility. **RED** antimicrobials are highly restricted, indicating that a prescriber must 'stop and review' prior to prescribing, as there are strict limitations or risks that must be addressed.

Smaller hospitals have limited resources with which to manage a restricted antimicrobial formulary, and restriction policy may be somewhat different from those used in larger hospitals. Small facilities must find the right balance between applying best practice restrictions and taking action that is safe, achievable, sustainable and relevant to their patient population.

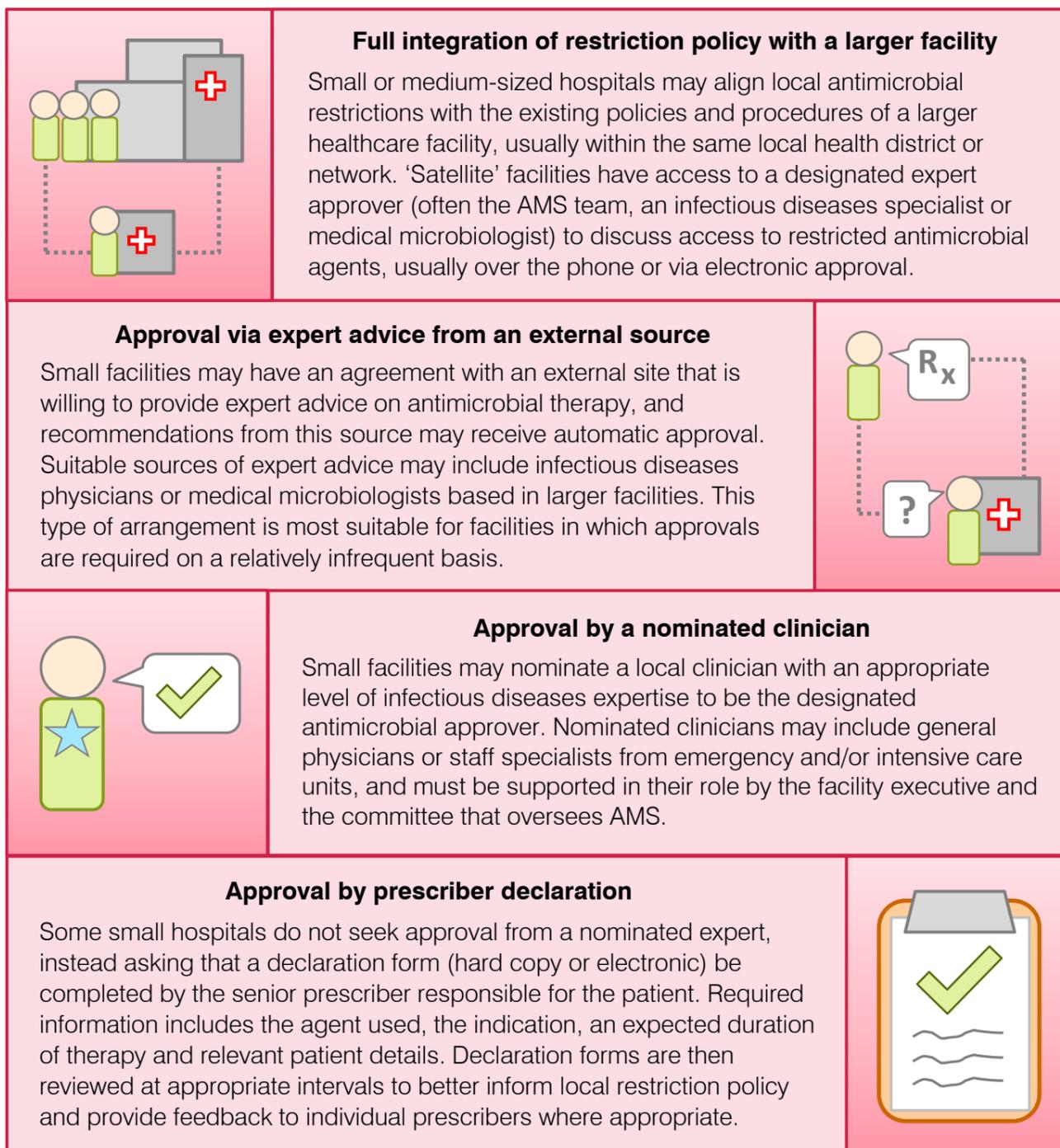
Managing Expert-Approval Restrictions in Smaller Facilities

Restrictions based on expert approval require a nominated expert to have input or involvement in the prescribing process. This restriction type is useful for antimicrobials used in particularly challenging or rare disease states, or for infections with multi-drug resistant organisms. The need to involve a nominated 'approver' can be labour-intensive, thus widespread use of restrictions requiring expert approval may not always be achievable in facilities with limited resources. Smaller hospitals may successfully manage expert approval restrictions using one of the

models outlined in *Figure 1*, as endorsed by the committee that oversees AMS and the hospital executive.

Please note that while arrangements for granting antimicrobial approvals may be more flexible in smaller facilities, these do not substitute for the clinical advice provided by infectious diseases specialists in complex and challenging cases. All hospitals must have agreements in place to be able to access a specialist for consultant services, where expert opinion or review is deemed necessary.

Figure 1: Models for expert-approval restrictions in small hospitals



Managing Criteria-Based Restrictions in Smaller Facilities

Criteria-based restrictions outline conditions that must be met for an antimicrobial prescription to gain automatic approval. These restrictions stipulate pre-approved indications, clinical scenarios or a duration of therapy, and often revert to an approval-based restriction should these criteria not be met. Criteria-based restrictions may also specify automatic approval when an antimicrobial is prescribed by a particular specialty or according to a locally endorsed prescribing protocol. Allowing for approval based on established criteria reduces the

burden of prescriptions that require expert review. As the amount of criteria-based restrictions increases however, the responsibility of monitoring and enforcing these restrictions may become more challenging. Local policy should specify whether particular antimicrobials require modified dispensing rules or confirmation by a pharmacist within a given time frame. Alternatively, facilities may opt to undertake periodical audits to monitor compliance with restriction criteria, rather than impose 'front-end' checks.⁵

Tips for engaging your prescribers

Prescriber engagement is critical to the successful implementation and maintenance of a restricted antimicrobial formulary. The following actions will assist in developing a cooperative relationship with clinical stakeholders.

1 Provide easy access to information regarding antimicrobial restrictions

Prescribers are more likely to understand and accept restrictions when they have ready access to the relevant policy documents. The local restriction policy should be able to be explained easily and succinctly, and the committee that oversees antimicrobial stewardship should be able to offer a rationale for each restriction on request. Lanyard cards containing a quick reference list for restrictions may also be a useful tool for improving prescriber engagement.

2 Offer opportunities for prescriber input and feedback

Prescribers need to be recognised as key stakeholders of a restricted formulary, and as such there should be clear lines of feedback and opportunities for clinician input on existing antimicrobial restrictions. This may be coordinated via the AMS Committee or Drug & Therapeutics Committee.

3 Include antimicrobial restrictions in prescriber education sessions

The education and training of prescribers is an excellent forum for generating an understanding of antimicrobial restriction policy. Prescribing workshops should cover how to access information on local restrictions and case tutorials can provide examples which offer insight into prescribing restricted agents.

4 Use an evidence-based approach, integrating local data where possible

To achieve optimal compliance, prescribers need to believe their local restrictions are evidence-based, achievable and do not compromise patient safety for the sake of financial gain. Where possible, committees should examine a combination of published evidence and local data on antimicrobial usage and appropriateness, particularly when justifying specific restrictions which may be perceived as contentious or unnecessary.

References: Please see the QUAH page on the CEC website for full fact sheet references.
www.cec.health.nsw.gov.au/programs/quah