

# Understanding Non-Medical Prescribers' Antimicrobial Prescribing and Stewardship Competency: Implications for Education and Policy

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## BACKGROUND

Antibiotics remain a cornerstone of modern medicine, yet inappropriate prescribing persists, contributing to antimicrobial resistance (AMR), a major global health threat [1,2]. Antimicrobial stewardship (AMS) programmes support safe prescribing by promoting knowledge, skills, and context-aware decision-making among prescribers [3,4]. Non-Medical Prescribers (NMPs) – including nurses, pharmacists, and allied health professionals – play an increasingly important role, but evidence on their AMS knowledge, competencies, and behaviours (NMP-APSC) is limited.

## AIM

To systematically map the existing literature on knowledge, competencies, and AMS-specific professional literacy among NMPs across healthcare settings.

## METHODS

- **Study Design:** This scoping review followed the framework by Arksey and O'Malley (2005) [5].
- **Search Strategy:** The search was guided by the Population, Concept, Context (PCC) framework. Relevant terms were developed with an academic librarian to construct search strings across 12 electronic databases.
- **Inclusion Criteria:** We included qualitative, quantitative, and mixed-methods studies in English examining NMPs' knowledge, competencies, context-specific literacy, or behaviours related to antimicrobial stewardship. All healthcare settings were considered, including primary care, community care, secondary/tertiary hospitals, outpatient clinics, and long-term care. Only studies from high-income countries were included to ensure comparability.
- **Screening and Selection:** Titles and abstracts were imported into Covidence, duplicates removed and independently screened by two reviewers. Full texts were assessed by two reviewers, with reasons for exclusion documented. Disagreements were resolved via discussion or a third reviewer.
- **Data Extraction:** A standardised form captured study characteristics and findings related to NMPs' knowledge, competencies, context-specific literacy, and antimicrobial prescribing behaviours. Two reviewers independently extracted outcome data

## RESULTS

From 10,032 records screened, 20 studies across five countries (UK, USA, Canada, Netherlands, New Zealand) met the inclusion criteria for data extraction and are currently under analysis. Preliminary key themes emerging include: (1) Training & Education, (2) Knowledge & Clinical Exposure, (3) Comparison with Medical Prescribers, (4) Guideline Adherence, (5) 'One-Size-Fits-All' Approaches, (6) Impact of COVID-19, (7) Behavioural & Cultural Influences, and (8) Support Structures & Systems.

## Prescribing the Future: Mapping Competency in Antimicrobial Stewardship

### THE GROWING THREAT OF ANTIMICROBIAL RESISTANCE

**10 MILLION**  
ANNUAL DEATHS BY 2050

Current trends suggest AMR could become a leading global cause of mortality within decades.

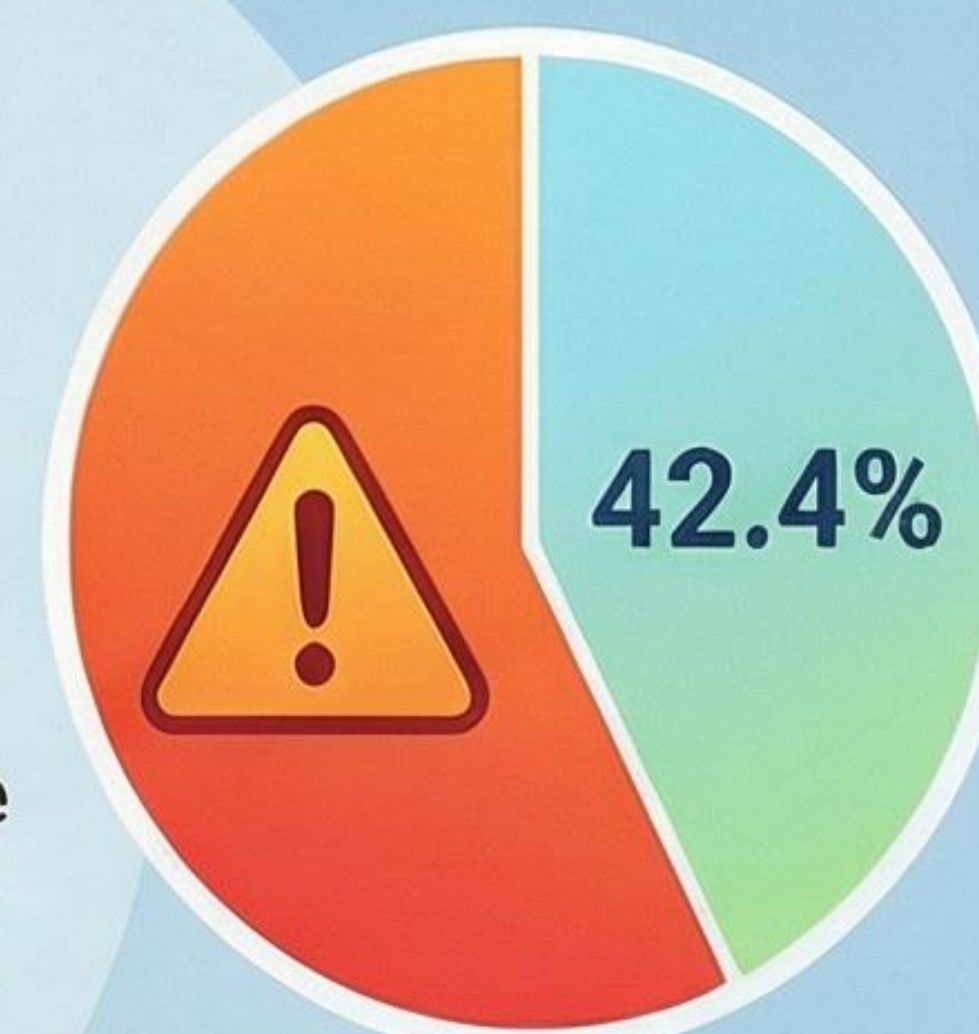
**NMPs Manage up to 11% of Prescriptions**  
Nurses, pharmacists, and allied health professionals are now primary contributors to antimicrobial use.

Metric	Current Status	Future Projection
Annual Deaths (UK)	7,000+	Rising Trend
Annual Deaths (Global)	~1.27 Million	10 Million (by 2050)
Inappropriate Prescribing	57.6% (Primary Care)	Risk of increased resistance

**57.6%**

of Antibiotic Prescriptions are Inappropriate

A global review found over half of primary care antibiotic scripts do not meet clinical standards.



### STRENGTHENING NMP COMPETENCY (NMP-APSC)



#### DEFINING NMP-APSC

The integrated knowledge, skills, and attitudes required to apply stewardship principles in clinical decisions.



#### MAPPING EDUCATIONAL AND POLICY GAPS

Systematic reviews are identifying variations in training and literacy across primary and secondary care.



#### INFORMING TARGETED INTERVENTIONS

Research findings will develop regulatory standards and workforce policies to support responsible prescribing.

NotebookLM

## CONCLUSIONS

Considering the expanding role of NMPs, mapping NMP-APSC competencies addresses a key evidence gap in understanding their contribution to antimicrobial stewardship. This is important given wider evidence linking limited health-related competence to poorer outcomes and increased healthcare costs. Emerging evidence indicates that educational and workplace interventions can strengthen AMS competencies, enhance prescribing confidence, and support appropriate antimicrobial use.

## References

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4. British Society for Antimicrobial Chemotherapy. (2018). Antimicrobial Stewardship From Principles to Practice. Birmingham: British Society for Antimicrobial Chemotherapy.
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