## **Antimicrobial Stewardship Program** Implementation in Gulf Cooperation Council States - A Systematic Review



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Introduction

Antimicrobial resistance (AMR) has led to the development of initiatives aimed at optimizing antimicrobial use. Coordinated interventions for promoting and monitoring safe and effective use of antimicrobials are termed antimicrobial stewardship programs (ASP).<sup>2</sup> Aspects of implementation and outcomes of ASPs have been researched and reported in the literature.

**Review aim** and objectives

To critically appraise, synthesize and present available evidence on ASP implementation in Gulf Cooperation Council (GCC) States.

- 1. To compare ASP *interventions* in GCC States to international guidelines
- To determine the *outcomes* reported in studies of ASP intervention in GCC States
- To identify facilitators and barriers to effective ASP implementation, sustainability and scalability in GCC States

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- Protocol followed PRISMA-P guidelines<sup>3</sup>
- Databases searched: MEDLINE, CINAHL, International Pharmaceutical Abstracts, Cochrane database and Web of Science
- Quality assessed: using National Heart, Lung and Blood Institute critical appraisal tools (NHLBI)<sup>4</sup>.
- ASP interventions were compared to the seven core elements of the Center of Disease Control and Prevention (CDC) checklist, a 'Gold Standard 'for systematic assessment of key ASP interventions <sup>5</sup>.

## **Population: Intervention:** Patients admitted to ASP implementation institutionalized health care settings in any GCC States **Inclusion criteria Comparator: Outcome:** Pre and post implementation Clinical, microbiological and economic outcomes Any type of Published 2010 to date | English language only study design

Records identified through database searching and initial Identification screening (n = 892)

Records after duplicates removal

(n = 479)

NHLBI quality assessment tool

✓ Two 'good quality', two 'poor' and the remainder 'fair'

Records screened (n = 268)

Screening

Results

Records excluded if primary care, outpatient or dental setting (n = 211)

(n = 218)

Full text articles

excluded with

reasons

(n = 35)

Records excluded for not meeting study objectives

✓ Implementation weakly aligned with CDC checklist.

**Interventions** implementation

- ✓ Majority of studies reporting only 30% of the expected CDC criteria.
- ✓ Prospective audit and feedback on top of specific actions

Full text articles assessed for eligibility (n=42) plus studies identified from reference list (n=8)

Total (n = 50)

**Outcomes** 

✓ Antibiotic consumption most commonly reported.

✓ Very little microbiological, clinical and economic outcomes.

Included

Eligibility

Studies included in qualitative research (n = 15)Cross sectional survey, n = 1

Before and after control study, n = 6 Observational Cohort, n = 8

Facilitators and barriers

- ✓ Key facilitators: physician, organisation support and education.
- ✓ Barriers: Lack of dedicated staff, workload issues and lack of sufficient funding for implementation

PRISMA flow chart for search and inclusion process

**Conclusion** 

**Lack of robust** studies of ASP implementation in the GCC States.

Studies should focus on CDC criteria in developing the ASP intervention

Report valid and reliable outcome (microbiological, clinical and economic)

A need for qualitative research to focus on facilitators, barriers and solutions to implementation.

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