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# Hospital antimicrobial stewardship program implementation in the Gulf Cooperation Council States: a systematic review of evidence of implementation.

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# Hospital Antimicrobial Stewardship Programs in Gulf Cooperation Council States - A Systematic Review of Evidence of Implementation



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## Introduction

Antimicrobial resistance (AMR) has led to the development of initiatives aimed at optimizing antimicrobial use.<sup>1</sup> Co-ordinated 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.

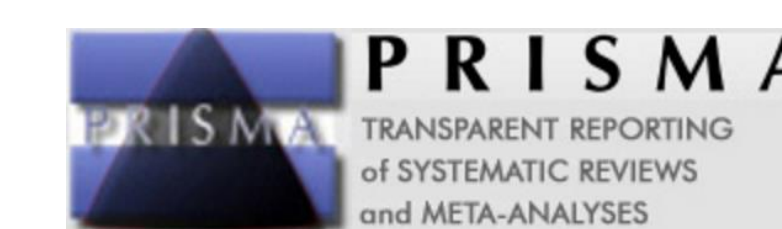
## Review Aim and Objectives

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.
- 2- To determine the outcomes reported in studies of ASP intervention in GCC states.
- 3- To identify facilitators and barriers to effective ASP implementation, sustainability and scalability in GCC states.

## Method

- Protocol followed Prisma-P guidelines.<sup>3</sup>
- **Search strategy:** On (MEDLINE, CINAHL, International Pharmaceutical Abstracts, Cochrane database and Web of science).
- **Quality assessment:** Using National Heart and Lung 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 which is considered a 'Gold Standard' for systematic assessment of key ASP interventions.<sup>5</sup>



## Conclusion

- **Lack of robust studies** on 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.**



## Inclusion Criteria

- Population:** health professionals and /or hospitalized patients
- Intervention:** ASP implementation
- Comparator:** Pre and post implementation
- Outcome:** Clinical, microbiological and economic outcomes
- ❖ Any type of study design
- ❖ Published 2010 to date
- ❖ English language only

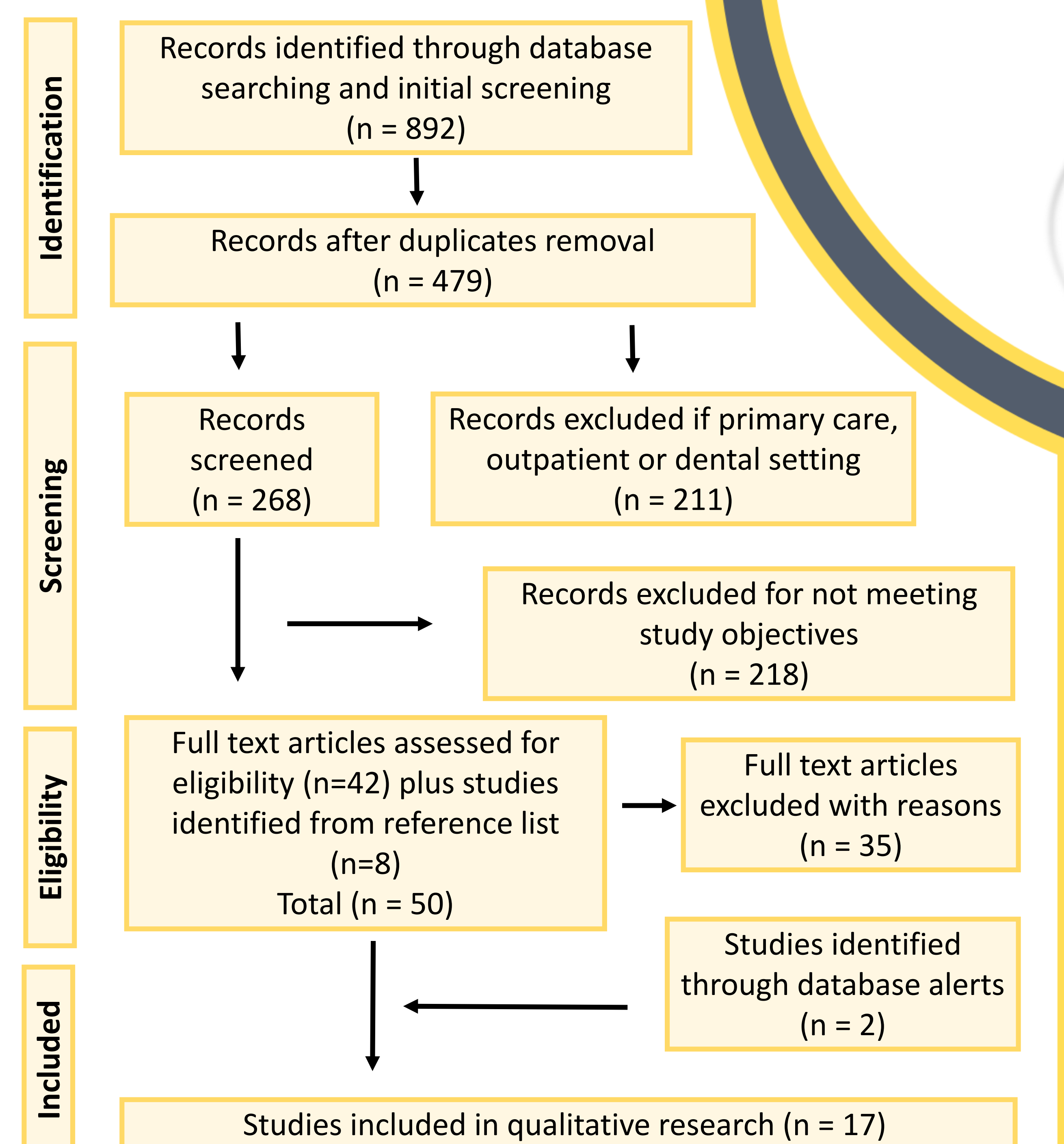


Figure 1: PRISMA flow chart for search and inclusion process

## NHLBI quality assessment tool

- ✓ Two studies of 'good quality.'
- ✓ Two studies 'poor.'
- ✓ Remaining studies 'fair.'

## Interventions implementation

- ✓ Implementation is weakly aligned with CDC checklist.
- ✓ Prospective audit and feedback ranked high for specific actions.

## Outcomes

- ✓ Antibiotic consumption most commonly reported.
- ✓ Very little microbiological, clinical and economic outcomes.

## Facilitators

- ✓ Key facilitators: physician, organisation support and education.

## Barriers

- ✓ Barriers: Lack of dedicated staff, workload issues and lack of sufficient funding for implementation

## References:

1. World Health Organization. Antimicrobial Resistance Global Report on surveillance. Switzerland: World Health Organization; 2014.
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3. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement | Systematic Reviews | Full Text Available at: <https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/2046-4053-4-1>.
4. NHLBI. Study Quality Assessment Tools | National Heart, Lung, and Blood Institute (NHLBI) Available at: <https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>. Accessed 8/12/2018, 2018.
5. CDC. Checklist for Core Elements of Hospital Antibiotic Stewardship Programs | Antibiotic Use | CDC [homepage on the Internet]. 2017 [updated 23 February 2017; cited 2018 9/25/2018]. Available from: <https://www.cdc.gov/antibiotic-use/healthcare/implementation/checklist.html>.

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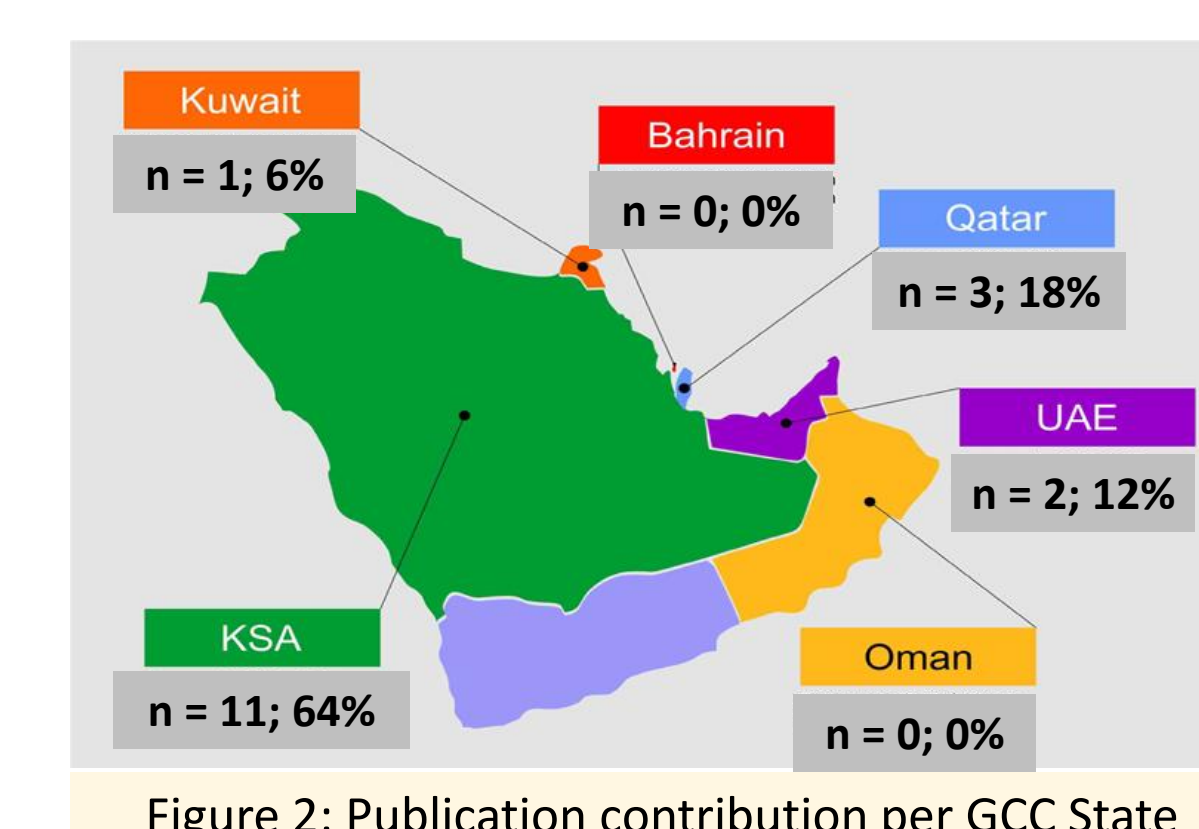


Figure 2: Publication contribution per GCC State