Title:

The application of the Hub and Spoke Model in Antimicrobial Stewardship Programmes - A Scoping Review

Appendix A:

**Hub and spoke search strategy**

**Review aim:**

To identity and evaluate the application and implementation of HSM in AMS programmes

**Review question:**

Primary: How is the HSM model implemented within AMS programmes?

Secondary: What is the effectiveness of the HSM model in delivering interventions in AMS programmes?

**To develop the search strategy, the following steps were used:**

Define a research question

Identify key concept

Identify MeSH terms

Search for keywords

Find alternate search terms

Use truncation, boolean operators

Define search limits

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Model** | **Aspect** | **Interventions-effectiveness** | **Key term 4** | **Intervention- implementations** | **Miscellaneous** |
| Hub and spoke | Antimicrobial | Knowledge | implementation | Adopt\*ion | CFIR |
| Hub and spoke model | Antimicrobial stewardship | Training of healthcare professionals | barrier\* | Implementation | Proctor et al |
| Hub-and-spoke model | Antibiotic stewardship  | Establishment of ASP | facilitator\* | Reach | RE-AIM |
| ECHO | AMS | Development of antibiogram  | Barriers and facilitator\* | effectiveness | Project ECHO |
| Hub and spoke network | Antimicrobial stewardship programme | Development of policies or guidelines | Barriers & facilitator\* | adoption | Implementation frameworks |
| Star network | Healthcare  | Pre- and post-intervention surveys * Identification of pattern of use of medication
* Change in classes of antibiotics used
* Acceptability and feasibility by healthcare professionals of the hub and spoke model
* Barriers to the application of the hub and spoke model
 | determinant\* | maintenance | **One health**- Animals |
|  | InfectionInfectious / Infectious diseases  |  | implement\* | Accept\*ability | health |
|  | Medicine\*  |  | challenge\* | Penetration  | Health care |
|  | Drug Resistance, Microbial |  | limit\*ation | Sustain\*ability | healthcare |
|  | Antimicrobial resistance |  | evaluation | Appropriat\*eness | Health and social care |
|  | AMR |  | Program evaluation | Cost\* |  |
|  | Antibiotic resistance |  |  | Feasibility  |  |
|  |  |  |  | Fidelity |  |
|  |  |  |  | evaluation |  |

**Search criteria/limitation**

English language-

Inception- (no year filter)

Full papers

Excluding abstracts- IPC abstracting- needed full papers

|  |  |
| --- | --- |
| Inclusion Criteria | Exclusion Criteria  |
| * AMS related articles that applied the HSM with an economic, clinical or humanistic outcome
* Application of HSM in AMS context in both adult and/or pediatric populations
* Application of HSM in antimicrobial prescribing/use
* Studies discussing the application of HSM in AMS context (including protocols and commentaries)
* Studies evaluating or exploring the barriers and facilitators of applying HSM in AMS context
 | * Articles focused on diagnosis of diseases, gene therapy, digital health and surgical outcomes
* Studies conducted in a single setting
* Studies focusing on veterinary medicine
* Studies focusing only on educational activities e.g. ECHO training model
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