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Determinants and opportunities of antimicrobial stewardship implementation in hospitals in low- and middle-income countries: a qualitative study

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BACKGROUND & OBJECTIVES

Antimicrobial Stewardship (AMS) requires a contextualized approach, particularly in low- and middle-income countries (LMIC). This study investigates barriers and facilitators to hospital AMS implementation, as identified by local AMS team members in the Global-PPS network.

METHODS

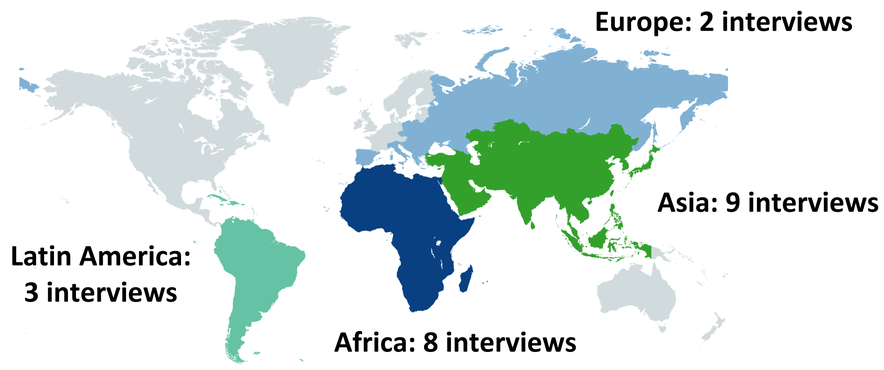
- Semi-structured interviews with transcription of online video recording.
- Purposive sampling: healthcare workers (HCW), involved in AMS in LMIC hospitals in the Global-PPS network.
- Combination of inductive & deductive thematic analyses.
- Barriers & facilitators: categorized using Flottorp's determinants of practice.

RESULTS

Study participants

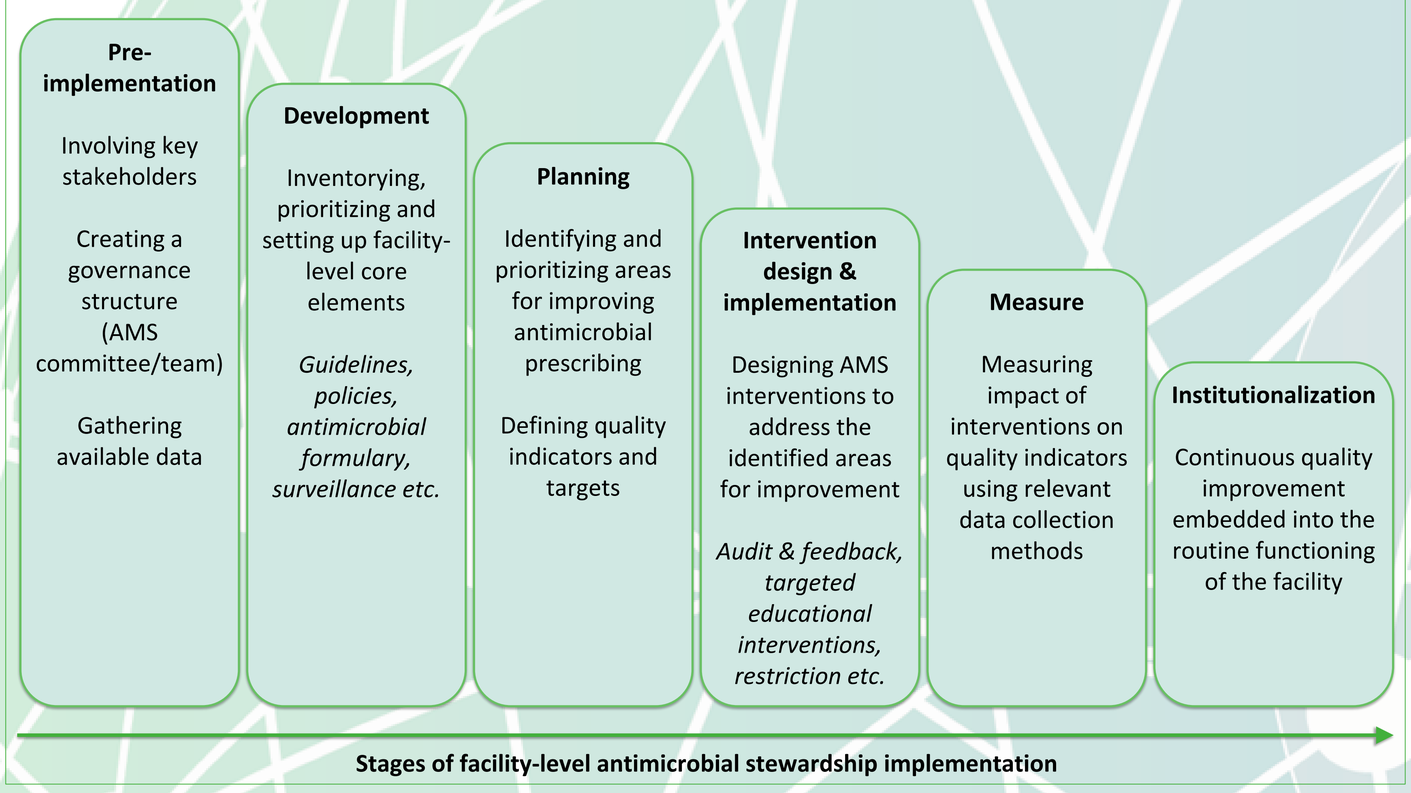
- 22 interviews conducted (June 2022 - April 2023)

- 21 hospitals (14 tertiary, 6 secondary, 1 paediatric)
- 16 low-, lower-middle-, and upper-middle-income countries, across 4 continents



To what extent has AMS been implemented in your hospital ?

Hospitals were at different stages of AMS implementation, with a smaller number of hospitals progressing through each subsequent stage. A limited number of hospitals had collected evidence to show that their interventions had an impact on antibiotic prescribing.



What influences AMS implementation in your setting?

- Numerous, inter-related determinants (barriers or facilitators) were observed from all domains of the Flottorp checklist.

Themes	Examples of determinants	
Theme 1. Support and resources for AMS	**Incentives & resources:** • Financial focus of hospital management • AMS as part of accreditation system • Access to antimicrobials • Laboratory capacity • Presence of trained human resources **Capacity for organisational change:** • Interest/engagement of leaders • Mandate & authority of AMS team • External support & collaborations • Availability & sustainability of funding	**Social, political, legal factors:** • Bureaucracy • Government support • Healthcare budget factors • Social security regulations & out-of-pocket payment • Political stability
Theme 2. Functioning of the AMS team	**HCW factors:** • Expertise on infectious diseases/antimicrobials • Familiarity with AMS principles • Skills (e.g. communication, data analysis) • Confidence to engage in dialogue with prescribers **Professional interactions:** • Mentorship within AMS team • Hierarchy between AMS team members and other HCW	**Incentives & resources**: • Tools for planning, evaluating & assessing AMS activities • Career opportunities inside & outside of hospital • Opportunities for knowledge exchange
Theme 3. acceptance & uptake of recommendations by targeted HCW	**Guideline factors:** • Observability of guidelines • Quality of guidelines & underlying evidence • Disciplines involved in guideline creation **HCW factors:** • Domain knowledge • Expected outcome • Fear • Feeling restricted in autonomy **Patient factors:** • Real or perceived patient needs	**Professional interactions:** • Presence of champions among HCW • Hierarchy & social norms **Incentives & resources:** • Diagnostic capacity to guide treatment **Capacity for organisational change:** • Presence of monitoring & feedback • Ways of delivering feedback **Social, political, legal factors**: • Malpractice liability

Strategies to enhance AMS implementation

- Involving different disciplines in guideline development & AMS implementation.
- Identifying champions among targeted HCW & leaders.
- Tailoring communications and activities to target HCW's needs (e.g. "handshake stewardship").
- Fostering mentorship within the AMS teams.
- Training non-specialized HCW's to take on a role in AMS.
- Increasing observability of guidelines.
- Addressing financial concerns of management with economic evidence.
- Leveraging existing systems for quality improvement (e.g. accreditation).

CONCLUSION

Determinants of AMS implementation in a set of LMIC hospitals in the Global-PPS network were complex and presented as a continuum. Identified opportunities could be leveraged during implementation, though empirical evidence of their impact was limited. These insights provide guidance for future intervention studies. Continuous efforts are needed to ensure sustainable funding, equitable antibiotic access, and accessible AMS training and tools across LMIC settings.

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