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

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METHODS

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.

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.

BACKGROUND & OBJECTIVES

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

Europe: 2 interviews

Asia: 9 interviews

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.

	Pre-					
	implementation					
		Development				
	Involving key					
	stakeholders	Inventorying, prioritizing and	Planning			
	Creating a	setting up facility-	Identifying and	Intervention		
/	governance	level core	prioritizing areas	design &		
	structure	elements	for improving	implementation	Measure	
/	(AMS		antimicrobial			
	committee/team)	Guidelines,	prescribing	Designing AMS	Measuring	
ľ		policies,		interventions to	impact of	
	Gathering	antimicrobial	Defining quality	address the	interventions on	
	available data	formulary,	indicators and	identified areas	quality indicators	
/		surveillance etc.	targets	for improvement	using relevant	
					data collection	
				Audit & feedback,	methods	
				targeted		
				educational		

Institutionalization

Continuous quality improvement embedded into the routine functioning of the facility

Latin America: **3** interviews

Africa: 8 interviews

What influences AMS implementation in your setting?

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

Themes Theme 1. Support **Incentives & resources:** and resources for Financial focus of hospital management AMS • 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

HCW factors: Theme 2.

- Expertise on infectious diseases/antimicrobials Functioning of the • Familiarity with AMS principles AMS team
 - Skills (e.g. communication, data analysis) Confidence to engage in dialogue with prescribers

Examples of determinants

Social, political, legal factors:

- Bureaucracy
- Government support
- Healthcare budget factors
- Social security regulations & out-of-pocket payment
- Political stability

Incentives & resources:

- Tools for planning, evaluating & assessing AMS activities
- Career opportunities inside & outside of hospital

interventions, restriction etc.

Stages of facility-level antimicrobial stewardship implementation

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).



- **Professional interactions:**
- Mentorship within AMS team
- Hierarchy between AMS team members and other HCW

Guideline factors: Theme 3.

- Observability of guidelines acceptance & uptake of
- recommendations by targeted HCW
- 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

Opportunities for knowledge exchange

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

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. Acknowledgements: we thank all members of the Global-PPS network

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