HAITOOL – A CO-DESIGNED SURVEILLANCE AND DECISION-SUPPORT SYSTEM TO SUPPORT ANTIBIOTIC STEWARDSHIP PROGRAMS IN PORTUGAL

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Abstract:

Background: Antibiotic-resistant healthcare-associated infections (AR-HAIs) are linked with high levels of morbidity and mortality. Strategies to effectively prevent/control AR-HAIs and antibiotic misuse (i.e.: hand hygiene, surveillance information system, Antibiotic Stewardship Programs (ASP)) should be implemented and adapted to local context.

Objectives: To co-design (with healthcare workers) and implement an information system adapted to Portuguese context, that impacts on AR-HAIs and antibiotic use, promote antibiotic prescription based on guidelines, and improve antibiotic prescription.

Methods: The study is being conducted in three Portuguese Hospitals using Design Science Research Methodology.

Results: HAITool is a surveillance and decision-support system adapted to Portuguese context. HAITool aggregates all data in a single information system and includes integrated views of patient, microbiology and pharmacy data, displayed in innovative graphics that enables visualization of patient clinical evolution, antibiotic consumption trends, AR-HAIs distribution, and local antibiotic susceptibility patterns. HAITool is also a decision-support system for antibiotic prescription, displaying alerts for antimicrobial therapy in excess duration, not in accordance with microbiology results, without previous microbiological culture, and isolation of ESKAPE+C and multidrug-resistant microorganisms.

Conclusion: HAITool can be an important element of ASP since enables monitoring of AR-HAIs, antibiotic use and helps antibiotic prescription, contributing to reduce antibiotic misuse and AR-HAIs.