

Table 1. Summary of twenty studies describing antimicrobial stewardship strategies in the Middle East (continued)

Study	Country	Design	Setting (No. of patients)	Evaluated component	Comparator	Outcome	Recommendations
Al Harbi, 1998	Saudi Arabia	Retrospective evaluation of case records	Hospital (888)	Appropriateness of prescribing practices of surgeons for antimicrobial prophylaxis in the surgical ward	Compliance with the hospital local antibiotic prescribing policy	Unwarranted and overuse of prophylactic agents ( $\geq 70\%$ of patients) with increased cost to the hospital	<p>Strict enforcement of the local policy</p> <p>Strict surveillance and prophylactic antibiotic audit</p> <p>Supervision by health care team including infectious disease specialist, clinical microbiologist and clinical pharmacist for the appropriate use of antibiotics</p> <p>Formulary restrictions</p> <p>Preprinted standing orders</p> <p>Revision of compliance with the principles of prophylactic administration by the infection control committee</p>
Senok et al. 2009	Bahrain	Retrospective evaluation of patients' case files	Hospital (184)	Appropriateness of antimicrobial prescribing patterns of physicians	Compliance with the AAP, CDC and the IDSA guidelines for the treatment of upper respiratory tract infections	Antibiotic overuse	<p>Development of national guidelines based on local knowledge of clinical presentation and antimicrobial resistance patterns</p> <p>Integration of guidelines into structured continuing medical education courses</p> <p>Public health awareness campaigns actively supported by opinion leaders</p>
Musmar et al. 2014	Palestine	Observational non-interventional prospective cohort	Government hospital (400)	Surgeons' Adherence in terms of prescribing pattern, selection, dosing and duration of antimicrobials after surgery	Compliance with the ASHP guidelines	Very low compliance in all aspects (2% compliance for studied parameters with significant p-values)	<p>Adopting guidelines for prophylaxis;</p> <p>Training all health care providers</p>
Al-Balushi et al. 2014	Oman	Retrospective cross-sectional review of prescriptions using medical files	Hospital (499)	Appropriateness of antimicrobial prescribing patterns of physicians	Compliance with CDC and WHO definition of "appropriate antibiotic prescription practices"	Similar results with studies conducted in developed countries (North America, Europe and Asia)	<p>Encouragement of guideline-based antibiotic prescription practices</p> <p>Implementation of a uniform antibiotic prescribing policy based on local sensitivity patterns</p>