

Table S1. – Concerns with the development of SSIs among MENA Countries and potential risk factors.

Country	Author and year	Study background and aims	Findings and implications
Middle Income Countries*			
Jordan	Jalil et. al, 2017 [191]	<ul style="list-style-type: none"> There were concerns with the high rate of SSIs following caesarean sections Determine possible risk factors to reduce SSIs in the future 	<p>Risk factors influencing SSIs included:</p> <ul style="list-style-type: none"> Body mass index ≥ 36 kg/m² prior to pregnancy Hospital stay longer than 3.5 days Having the operation at a gestational age greater than 40 weeks Prescribed a higher weight-adjusted dose of cefazolin prophylactically for SAP was associated with lower odds of an SSI
Jordan	Ennab et. al 2022 [17]	Identify bacteria from SSIs to determine antimicrobial susceptibility profiles to guide future antibiotic choices	<ul style="list-style-type: none"> 17 out of the 28 identified bacteria had resistance levels above 0.2 including <i>Escherichia coli</i>, <i>Pseudomonas aeruginosa</i>, <i>Proteus mirabilis</i>, <i>Klebsiella pneumoniae</i>, <i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i> Overall, hospital treatment protocols should be enforced and monitored to reduce current resistance rates
High-Income Countries*			
Kuwait	Hamza et. al, 2018 [192]	<ul style="list-style-type: none"> Assess the prevalence of SSIs following gastrointestinal procedures Determine possible risk factors that may be present to improve future patient management 	<ul style="list-style-type: none"> Following gastric, colon, and small bowel 1operations, respectively, 0.8% (13/1722), 19.8% (38/192), and 10.8% (20/185) of 2,099 patients experienced SSIs The predominant pathogens causing SSIs were gram-negative bacilli (60% multidrug-resistant organisms) with a significant prevalence of multidrug-resistant pathogens In stomach procedures, using an endoscope showed a protective effect against SSIs Implementing focused preventative measures for identified risk factors should reduce SSIs
Saudi Arabia	Alkaaki et. al. 2018 [61]	Describe the incidence, bacteriology, and risk factors related to SSIs	<ul style="list-style-type: none"> 16.3% of patients (55/337) had documented SSIs – 5 had deep infections (9% - 5/55) and 25 (45% - 25/55) had both superficial and deep infections The incidence of SSIs was 35% versus 4% in open versus laparoscopic procedures respectively (p 0.001) <i>Escherichia coli</i> (26 patients – 52%) and gram positive bacteria (19 patients – 38%) were the most typical bacteria to be isolated In patients susceptible to SSIs, antibiotic preventive regimens need to be tailored for maximum impact
Saudi Arabia	Alsaeed et al., 2022 [60]	<ul style="list-style-type: none"> Out of 209 surgical patients, 52 patients did not receive preoperative antibiotics (control) 157 received SAP 	<ul style="list-style-type: none"> One patient in the prophylactic group developed an SSI (0.6%) versus three patients in the control group (5.8%), which was statistically significant The mean hospital length of stay in the group receiving prophylaxis at 38.5\pm9.2 hours was significantly shorter than the control group at 57.3\pm12.1 hours The most commonly prescribed antibiotics for SAP were metronidazole (A), cefuroxime (W), cefazolin (A), and ceftriaxone (W) Prescribing preoperative antibiotics significantly reduced SSIs and the mean length of hospital stay

United Arab Emirates	Alnajjar et al., 2020 [62]	Identify key elements associated with SSIs following a caesarean section, with 100% of mothers receiving a single dose of cefazolin within one hour of skin incision	<ul style="list-style-type: none"> • SSIs occurred in 1.4% of patients following a caesarean section • Increased gestational age of the fetus was a reliable predictor of SSIs • Targeted health care policies should be informed by identified risk factors to lower the incidence of SSIs
United Arab Emirates	Alshehhi et al., 2021 [67]	<ul style="list-style-type: none"> • Assess the appropriateness of antibiotic administration to prevent SSIs, particularly the length of administration • Ideally, the maximum length should be up to 24 hours post-operatively 	<ul style="list-style-type: none"> • Antibiotics for SAP were typically administered for 3 days (104 patients; 32.9%); 5 days (89 patients; 25.7%) and 7 days (41 patients; 11.8%) prior to an ASP • The average duration of cefuroxime (most prescribed antibiotic – W) pre-ASP was 3.8 ± 1.2 days

NB: ASP: Antimicrobial Stewardship Program; AWaRe classification for antibiotics – A = Access, W = Watch, R = Reserve [45]; SAP: Surgical Antibiotic Prophylaxis; SSIs: Surgical Site Infections; * World Bank Status (Based on [131]).