

**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
<b>Middle Income Countries*</b>			
Jordan	Jalil et. al, 2017 [191]	<ul style="list-style-type: none"> <li>There were concerns with the high rate of SSIs following caesarean sections</li> <li>Determine possible risk factors to reduce SSIs in the future</li> </ul>	<p>Risk factors influencing SSIs included:</p> <ul style="list-style-type: none"> <li>Body mass index <math>\geq 36</math> kg/m<sup>2</sup> prior to pregnancy</li> <li>Hospital stay longer than 3.5 days</li> <li>Having the operation at a gestational age greater than 40 weeks</li> <li>Prescribed a higher weight-adjusted dose of cefazolin prophylactically for SAP was associated with lower odds of an SSI</li> </ul>
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"> <li>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></li> <li>Overall, hospital treatment protocols should be enforced and monitored to reduce current resistance rates</li> </ul>
<b>High-Income Countries*</b>			
Kuwait	Hamza et. al, 2018 [192]	<ul style="list-style-type: none"> <li>Assess the prevalence of SSIs following gastrointestinal procedures</li> <li>Determine possible risk factors that may be present to improve future patient management</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>The predominant pathogens causing SSIs were gram-negative bacilli (60% multidrug-resistant organisms) with a significant prevalence of multidrug-resistant pathogens</li> <li>In stomach procedures, using an endoscope showed a protective effect against SSIs</li> <li>Implementing focused preventative measures for identified risk factors should reduce SSIs</li> </ul>
Saudi Arabia	Alkaaki et. al. 2018 [61]	Describe the incidence, bacteriology, and risk factors related to SSIs	<ul style="list-style-type: none"> <li>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</li> <li>The incidence of SSIs was 35% versus 4% in open versus laparoscopic procedures respectively (p 0.001)</li> <li><i>Escherichia coli</i> (26 patients – 52%) and gram positive bacteria (19 patients – 38%) were the most typical bacteria to be isolated</li> <li>In patients susceptible to SSIs, antibiotic preventive regimens need to be tailored for maximum impact</li> </ul>
Saudi Arabia	Alsaeed et al., 2022 [60]	<ul style="list-style-type: none"> <li>Out of 209 surgical patients, 52 patients did not receive preoperative antibiotics (control)</li> <li>157 received SAP</li> </ul>	<ul style="list-style-type: none"> <li>One patient in the prophylactic group developed an SSI (0.6%) versus three patients in the control group (5.8%), which was statistically significant</li> <li>The mean hospital length of stay in the group receiving prophylaxis at 38.5<math>\pm</math>9.2 hours was significantly shorter than the control group at 57.3<math>\pm</math>12.1 hours</li> <li>The most commonly prescribed antibiotics for SAP were metronidazole (A), cefuroxime (W), cefazolin (A), and ceftriaxone (W)</li> <li>Prescribing preoperative antibiotics significantly reduced SSIs and the mean length of hospital stay</li> </ul>

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"> <li>• SSIs occurred in 1.4% of patients following a caesarean section</li> <li>• Increased gestational age of the fetus was a reliable predictor of SSIs</li> <li>• Targeted health care policies should be informed by identified risk factors to lower the incidence of SSIs</li> </ul>
United Arab Emirates	Alshehhi et al., 2021 [67]	<ul style="list-style-type: none"> <li>• Assess the appropriateness of antibiotic administration to prevent SSIs, particularly the length of administration</li> <li>• Ideally, the maximum length should be up to 24 hours post-operatively</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• The average duration of cefuroxime (most prescribed antibiotic – <b>W</b>) pre-ASP was <math>3.8 \pm 1.2</math> days</li> </ul>

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]).