

ABSTRACTS: VOLUME 8, SPECIAL ISSUE {8th Undergraduate Conference}

EVALUATION OF ANTIBIOTIC SUPPLY CHAIN IN GAZA

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Abstract

Background: Antibiotics are essential for treating infectious diseases, particularly in pediatric and emergency care. In conflict-affected settings such as the Gaza Strip, prolonged political instability, blockade, and recurrent wars have severely disrupted healthcare systems, including pharmaceutical supply chains. These disruptions increase the risk of antibiotic shortages, compromise treatment outcomes, and contribute to antimicrobial resistance.

Objectives: This study aimed to assess risks associated with the antibiotic supply chain in the Gaza Strip during prolonged crises, identify key challenges affecting availability and distribution, and evaluate the impact of shortages on patient health outcomes.

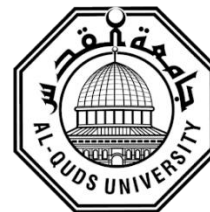
Methods: A descriptive cross-sectional study was conducted using a structured questionnaire targeting healthcare professionals involved in antibiotic prescribing, dispensing, and supply chain management, including physicians, pediatricians, pharmacists, and supply officers. A total of 143 participants were randomly selected based on predefined inclusion criteria. Data were analyzed using SPSS to generate descriptive statistics.

Results: The findings revealed a dramatic increase in antibiotic shortages during the war, with 84.6% of respondents reporting frequent shortages compared to 7.7% before the conflict. Political and economic instability (26%), lack of funding (24.8%), and shipment delays (20.6%) were identified as the main causes of supply disruptions. Transportation barriers delayed antibiotic delivery in 73.4% of cases, while 80.4% of participants reported that storage-related issues negatively affected antibiotic quality. Clinically, more than 80% of healthcare workers observed patient deterioration due to delayed antibiotic administration, and 36.4% reported prolonged hospital stays exceeding five additional days.

Conclusions: Antibiotic supply chain disruptions in Gaza represent a critical public health challenge with serious implications for patient outcomes and healthcare system resilience. Strengthening supply chain coordination, improving funding mechanisms, enhancing logistics and storage infrastructure, and



PalStudent Journal
A Palestinian Scientific Journal for the Youth



promoting rational antibiotic use are essential to mitigate shortages and protect patient health during ongoing and future crises.

Keywords: Antibiotic shortages, Gaza Strip, Supply chain, Armed conflict, Healthcare system, Public health.