current study identified risk factors for the acquisition of these MDR gram-negative critical priority pathogens in King Abdulaziz Medical City, Jeddah, to inform strategies for their containment.

Methods A case-control study was carried out from January to April 2015, in which 100 patients with healthcare-associated infections (infections arising 48 hours after admission) caused by MDR GNB were compared with two control groups, i.e., 100 patients with healthcare-associated infections caused by non-MDR GNB (not meeting the criteria of MDR) and 100 patients without infection caused by GNB. MDR bacteria were defined as bacteria that were non-susceptible to at least one antibiotic in three or more classes of antibiotics. Data were analyzed using descriptive statistics (frequency and percentage of categorical variables). Multivariate regression analysis was undertaken to identify significant predictors of MDR GNB. Odds ratios (ORs) with 95% CIs were calculated and the level of significance was determined as $p < 0.05$.

Results A total of 388 organisms were isolated during the study period from 332 patients. 56 (14%) patients were infected with more than one organism. Antibiotic therapy (OR 5.50, 95% CI 2.19–13.84; OR 3.98, 95% CI 1.68–9.44), stay in intensive care unit (OR 11.11, 95% CI 4.58–26.93; OR 8.60, 95% CI 3.28–22.57), and having indwelling medical devices (OR 3.02, 95% CI 1.45–6.33; OR 2.43, 95% CI 1.11–5.33) were the significant risk factors in patients infected with MDR GNB compared with each of the other two control groups, respectively.

Conclusion The risk factors identified in our study provide guidance for healthcare workers for the prevention and containment of MDR GNB with special emphasis on effective implementation of an antimicrobial stewardship program and enhancing infection control practices in intensive care units.

36 THE EFFECTIVENESS OF STERILE TECHNIQUE IN REDUCING FALSE-POSITIVE BLOOD CULTURE RESULTS IN QATIF CENTRAL HOSPITAL EMERGENCY DEPARTMENT

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Background Blood culture contamination is a common and preventable problem in the emergency department (ED). In previous studies, changing the process of ED blood culture collection into a more sterilized procedure resulted in a substantial reduction in the rate of blood contamination. The present study assessed the degree of blood contamination and evaluated the effect of using a sterile technique with monitoring and feedback on contamination rate over a 1-year period.

Methods We documented the rate of blood contamination among blood samples sent from the ED in the period from January 2016 until March 2016. A workshop for all ED nurses was held in March 2016 by clinical nurse instructors and this was followed by daily bedside teaching sessions for the whole study period. Nurses were instructed and audited on proper sterile blood withdrawal techniques. During the intervention period, we measured the rate of blood contamination for the period from April 2016 until September 2016.

Results Our average contamination rate dropped from the baseline of 12.6% (58 out of a total of 736 samples) to an

average contamination rate of approximately 5.6% (122 out of a total of 1549 samples), with an odds ratio of 0.411 (95% CI 0.303–0.559; $p < 0.001$).

Conclusion Changing the method of blood culture collection from the commonly used aseptic technique to a sterile process resulted in significant reductions in blood culture contamination in a busy community hospital ER. Monitoring the implementation process was important to identify and overcome operational challenges. In addition, this study could be a good initiative to start a multicentric quality improvement project to reduce blood contamination in the neighboring community and public hospitals.

37 MEDICATION EXCHANGE AND SHARING NETWORK PROGRAM (MESNP) INITIATIVE TO COPE WITH DRUG SHORTAGES IN THE KINGDOM OF SAUDI ARABIA (KSA)

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Background Drug shortages are a major public health concern and remain a persistent problem worldwide. Saudi Arabia is one of the richest and fastest growing countries in the Middle East. Despite that, Saudi Arabian drug markets are not immune to drug shortages. Although exact figures about drug shortages in Middle Eastern countries in general and in Saudi Arabia, in particular, are lacking, there is an emerging yet still limited number of reports about the drug shortage. It is, however, a fact that the drug shortages are affecting the Middle East in general and the Kingdom of Saudi Arabia (KSA) in particular. At the time we conducted this project, the Saudi Food and Drug Administration (SFDA) had not yet fully activated and implemented its role in tracking drug shortages and the role of other regulatory bodies were either outdated or unknown. Healthcare is one of the main focus areas of Saudi Vision 2030, which represents a comprehensive plan for the entire economic structure of Saudi Arabia. In order to ensure the Saudi Vision 2030 becomes reality, we should focus on more efficient use of our current resources. Based on that, we identified an innovative solution at the national level to collaborate and cope with the current situation by developing a centralized Medication Exchange and Sharing Network Program (MESNP).

Methods A quality improvement process map method was used for this project. Baseline evaluation included a review of possible reasons and strategies to manage medication shortages, recognize potential associated safety issues, and we developed MESNP as a national novel project to cope with medication shortages using a telegram as the preferred social media platform for group creation and communication.

Results A total of 500 reports were received. The majority of reports (70%) were raised by the Ministry of Health (MOH). A number of reports constituted requests for drug supplies due to shortages ($n=315$) and reports indicating the availability of overstock items for redistribution ($n=185$). Almost 98% of overstocking drug reports were redistributed, which covered 75% of drug shortage requests.

Conclusion We believe that this is the first national novel project aiming to address drug shortages. The optimistic findings of this project were the proactive identification of data and development of a framework to collect data about