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.

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 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.
national drug shortages to facilitate the medication exchange and sharing between organizations to prevent drug wastages and shortages for better patient care.

**38** IDENTIFICATION OF THE INCIDENCE OF ADVERSE DRUG REACTIONS (ADRs) USING NALOXONE AS A TRIGGER TOOL: A RETROSPECTIVE ANALYSIS

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10.1136/bmjoq-2019-PSF.38

**Background** Adverse drug reactions (ADRs) adversely affect patient outcomes, which may cause patients to lose confidence in the healthcare system. Even with the drastic improvement in healthcare practices, detection of ADRs continues to be an important safety tool to ensure patient treatment outcome and safety. The Institute for Healthcare Improvement (IHI) developed a trigger tool as a method to identify possible adverse events from medicine use in the inpatient setting. In this context, we identify naloxone as a trigger tool to detect unreported adverse effects secondary to the use of medicine.

**Methods** A retrospective chart review of naloxone prescribed to all admitted patients at KAMC-J over 1 year (2016 to 2017) was done to assess the trigger tool efficacy in the identification of ADRs and to assess the appropriate use of naloxone. We defined the appropriate use of naloxone as documentation of the reason for ordering being present and appropriate. The other objective was to determine the proportion of incidents documented through the safety reporting system (SRS).

**Results** A total of 100 patients who received naloxone orders were identified, for which all were administered in the inpatient setting. The majority of naloxone orders (n=62, 62%) were to reverse mental status changes, while six patients (6%) required intensive care admission. Only four (4%) cases out of 100 had a documented ADR report through the SRS. The most commonly prescribed dose of naloxone was 0.4 mg (56%) followed by 0.2 mg (23%). Only two patients received a higher initial dose of 2 mg. The majority were prescribed secondary to morphine (IV) or fentanyl (IV or patch), or hydromorphone (PO in patient with end-stage renal disease), and three patients received naloxone secondary to benzodiazepine administration. Two geriatric patients received naloxone without clear justification and they were not on any opioid drugs. The rest of the patients received various doses (0.04 to 1.2 mg).

**Conclusion** Using naloxone as a trigger tool is effective in tracing and tackling ADRs in our institution. We found that naloxone administration was often inappropriate. The most common order for naloxone was a 0.4 mg IV push dose, which caused a reversal of analgesia. Development of guidelines and order sets defining the appropriate use of naloxone will help guide healthcare providers on the appropriate ordering of naloxone based on the clinical situation. Although serious ADR reports are minimal in our data (6%), it did not eliminate the chance of missing important serious reports due to under-reporting.