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.