Comparison of Voluntary Reporting Systems and Naloxone Trigger Tool to Identify Adverse Opioid-related Events

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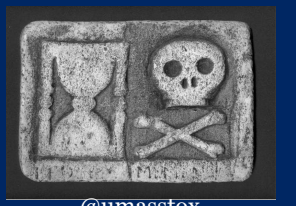

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Background

- Opioid analgesics are administered to more than ½ of all hospital inpatients.
- Multiple formulations, methods of delivery, and potencies can contribute to opioid-related adverse drug effects (ADEs).
- Iatrogenic opioid-induced respiratory depression reported in 1.8-13% of administrations in prior studies.
- Safe opioid administration in hospital is a key quality and safety goal.

Objective

- To compare a voluntary reporting system and naloxone trigger tool for identifying opioid-related ADEs in the inpatient setting.

Methods

- Retrospective analysis of a large, tertiary care center's voluntary ADE reporting system to identify cases involving opioid medications.
- Cases in which naloxone was administered to adult patients admitted to an ICU or general medical/ surgical floor were separately identified through a trigger tool.
- Cases in which an a priori opioid-related diagnosis (e.g., heroin overdose) was known were excluded.
- Cases categorized using NCC-MERP level of harm criteria when entered into voluntary system; cases of naloxone administration categorized with same criteria by two separate abstractors.

Results

- Between 01/01/14 and 03/31/14 there were 261 voluntary ADE reports.
- Of these, 25 cases involved opioid medications.
- The most common error types: omitted drug/dose, incorrect time, incorrect dose/drug.
- None of the reported errors reached the patient.
- During the same period, the naloxone trigger identified 84 naloxone administrations to unique patients.
- The trigger tool identified 5 NCC-MERP Class E and 2 Class H cases which were not voluntarily reported.

Discussion

- Historically, voluntary reporting systems have been know to capture less than 5% of the events identified through structured trigger tools.
- In our review, the voluntary system identified multiple events that did not reach the patient, while the trigger tool identified uncommon, yet clinically significant opioid-related ADEs.

Conclusion

- Combined use of voluntary medication error reporting and naloxone trigger-initiated case review may provide an improved perspective on opioid-related ADEs across the spectrum of patient harm.
- Voluntary reporting systems are essential for identifying systems issues and near-misses, although events that reach the patient are likely to be underreported.
- The naloxone trigger is helpful in identifying events that have reach the patient (e.g., respiratory depression, hypoxia).; however, it will not identify near-misses.

Selected References

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