Prescription Reporting with Immediate Medication Utilization Mapping (PRIMUM): Impact of an Alert on Controlled Substance Prescribing

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Purpose: Prescription narcotic abuse has reached alarming numbers. Specifically, orthopaedic trauma patients are at risk given the amount and duration of opioids given post-injury, previous histories that heighten risk, and lack of coordination between prescribers. To address this epidemic, integrated clinical decision support within the electronic medical record (EMR) to impact prescribing behavior was developed and tested.

Methods: A multidisciplinary expert panel convened to address opioid prescribing. A central EMR is utilized in 19 hospitals and emergency departments (EDs), 450+ outpatient clinics and urgent care facilities. The team identified the following risk factors for misuse, abuse, or diversion of opioids or benzos: early refill; 2+ visits to ED/urgent care with onsite opioid treatment within 30 days, 3+ prescriptions for opioids/benzos within 30 days, previous opioid/benzo overdose, and positive toxicology screen in the EMR. Risk factors were built as triggers for a rule that powers a prescriber-facing alert at the point of care. Prescribers may continue/cancel the prescription upon receiving the alert. Baseline data were collected by running the alert "silently"; 6 months of live data were collected.

Results: During the analysis period, our system had over 5 million patient encounters; a prescription for an opioid or benzo was initiated in 389,583 (8%). An alert was triggered in 23% of these encounters, with "early refill" being the most prevalent trigger (64%). For encounters with opioid prescriptions initiated (n = 300,912), the alert was triggered in 76,154 (25%), of which 14% were cancelled (n = 10,382). For encounters with prescriptions for benzodiazepines initiated (n = 102,804), the alert was triggered in 23,063 (22%), of which 24% were cancelled (n = 5409). Specifically, orthopaedic trauma surgeons at our Level I trauma center received alerts in 36% of prescribing encounters and canceled 8%.

Conclusion: Our goal is to integrate information to support clinical decision making to increase patient safety and decrease subjectivity when assessing risk for prescription drug misuse or abuse. There are legitimate medical uses for these medications; the desired outcome is not always a cancellation. Risk information is useful to the prescriber, as indicated by the number of prescriptions cancelled. Finally, this platform lays the groundwork for further clinical decision support incorporating evidence-based prescribing guidelines, and meeting emerging requirements to check drug monitoring programs.