Prescription Reporting with Immediate Medication Utilization Mapping (PRIMUM)

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Project Selection

The recent increase in narcotic prescriptions prescribed has led to a threefold increase in prescription drug abuse over the past decade. Poisoning is now the leading cause of accidental death in the United States, with opioid-related poisonings accounting for more deaths than cocaine and heroin combined.

PRIMUM was developed to address this epidemic by providing real-time risk information to prescribers at the point of care. This alert system supports the Atrium Health goal to maximize patient safety by:

- Identifying patients at risk of prescription misuse, abuse, and diversion
- Reducing the number of potentially risky prescriptions given to these patients
- Providing the platform for additional interventions in the future

These clinical decision supports empower prescribers to treat patients in the safest manner and according to best practice guidelines, thus improving patient experience and outcomes.

Goals

1. To create evidence-based, real-time clinical decision support within the EMR to identify at-risk patients utilizing searchable, objective indicators of risk for misuse, abuse, and diversion of prescription controlled substances based on peer-reviewed literature and consensus opinion.
2. To demonstrate a decrease in rate of prescriptions written to at-risk patients, as defined by the rate of cancellations of controlled substance prescriptions after an alert is generated based on the defined risk factors.
3. To utilize the data captured and the clinical decision support platform to improve patient safety and adhere to emerging legislation.

Improve Process

- Stakeholder Engagement (Figure 1)
- Iterative Improvement Process
  - "Silent" period to collect baseline data and tune alert to be sensitive yet not contribute to "alert fatigue"
  - Pilot phase to roll-out to specific sites
  - Full rollout to outpatient and emergency
  - Rollout to inpatient discharge
- Evaluation Process
  - Rate of cancellations of prescriptions in response to alert based on defined risk factors

Results

- A multidisciplinary team identified risk factors for misuse, abuse, and diversion of prescription opioids and benzodiazepines and created a real-time EMR alert system
- In six months, 3,860 opioid prescriptions and 2,857 benzodiazepine prescriptions were prevented entirely
- Rates of cancellation differed by specialty and trigger
- For opioids, behavioral health had highest cancellation rate, and “early refill” was trigger cancelled the most

Attainment of Goals

1) We successfully created an evidence-based, real-time clinical decision support tool to identify patients at risk for misuse, abuse, and diversion of prescription controlled substances that is useful for prescribers.
2) We documented a large number of prevented prescriptions written to at-risk patients in response to the alert.
3) These data and the PRIMUM platform have been used to create further clinical decision support.

Sustainability and Next Steps

- PRIMUM alert requires little maintenance after it was built with federal funding; therefore, it was sustainable to continue offering this tool
- PRIMUM platform provided groundwork for further clinical decision support and interventions, including:
  - Operationalization and Implementation of CDC Guideline for Prescribing Opioids for Chronic Pain
  - Controlled Substance Review Component
  - Standardized Pain Agreement
  - Standardized Patient Discharge Instructions
  - Alert to suggest prescribing naltrexone for high-risk patients
  - Alert to notify prescriber patient has reached 90 days of continuous opioid therapy with prompt for pain agreement