SETTING THE STAGE

Why did you select this project and what methods were used to identify the need?

> The need for this project stemmed from the rapidly increasing death rate in the United States from opioid overdose. The prescriber’s role in generating and sustaining opioid abuse has been made clear by studies that link practitioner’s prescribing patterns to a patient’s likelihood of long-term opioid dependence. In response to this epidemic, the medical staff initiated a pilot review of prescribing among physicians, physician assistants, and nurse practitioners in primary care and emergency departments using the health system’s electronic medical record (EMR) to collect data on prescribing frequency and overall opioid volume.

> Analysis from this pilot revealed high variability within Anne Arundel Medical Center (AAMC) in prescribing among practitioners and other deficiencies in management of chronic opioid users, which provided the rationale for this comprehensive campaign. This report conformed to the Standards for Quality Improvement Reporting Excellence (SQUIRE) reporting guideline for health care safety innovations.

> Opportunities to create standard guidelines and reduce the community surplus of opioids became evident with the histogram of variability in the primary care and orthopedic office prescribing and emergency department.

PROJECT DESIGN

Who was involved in the improvement effort?

> The interdisciplinary team started as a small, collaborative group to review current processes related to opioid prescribing and areas of opportunity to reduce variability and decrease the surplus of unused opioids in the community through appropriate and standardized prescribing practices. Since then, the team has grown and added partners from multiple disciplines throughout the health system. We regularly have local, county, and state participants.

> Please refer to the organization chart below to see team members involved:
What methodology was used?
> In terms of prescribing practices, a standing report was created that identified all prescription opioids and converted the prescription dose into morphine milligram equivalents (MME) using a standard reference table. The prescription was then assigned to individual prescribers and organized by department or service. The ED, primary care, and the orthopedic clinic were chosen for the initial focused efforts due to high opioid prescription rate and volume. Prescribing trends were overseen by a newly created Opioid Prescribing Task Force composed of clinical and administrative leaders from pharmacy, mental health, surgery, orthopedics, primary care, ED, community health, informatics, quality, and health system administration.

> A multilevel campaign was initiated comprising large group education that included departmental grand rounds, service meetings with data review, and a circulation of medical journal articles with information on overprescribing.

> The focus on general public education sought to enhance the public’s level of caution about opioids and reduce their unnecessary demand.

> For patients, new patient safety instructions were created to accompany every EMR-generated opioid prescription in the after-visit summary, including safe storage and disposal as well as the side effects.

What was the desired scope of the impact (e.g. specific patient population, cultural change, etc.)?
> The specific aims of the report were to reduce unwarranted variability in opioid prescribing; create accountability from prescribers and medical directors by collecting and sharing prescribing data from the EMR; and observe adverse effects by monitoring patient satisfaction with pain management and return visits to the ED.

### DATA COLLECTIONS AND RESULTS

How was the data collected and how did you use the data to guide your process improvement efforts?
> The study included a 6-month pre-intervention data review beginning in April 2016 to assess any secular pre-intervention trends already under way. The post-intervention observation period began on January 1, 2017 and continued through April 30, 2018. The key outputs measured were the volume and rate of opioid prescribing through the EMR. Data was analyzed as MME per patient encounter per month, MME per prescription, and number of opioid prescriptions per encounter. Separate linear regression analyses were performed for the parameters of aggregated MME per encounter per month, MME per opioid prescription, and rate of opioid prescription per encounter for the 6-month baseline period and for the 16 months of post-intervention observation.
The objective of this project was to create appropriate and evidence-based guidelines and education related to appropriate prescribing practices while measuring the effects of multilevel interventions on opioid prescribing within a health system. The results yield that opioid overprescribing was reduced with multifocal interventions targeting patient and public demand, creating prescriber awareness and accountability, and creating tools for clinical leadership accountability.

The study demonstrates that it is possible through a coordinated, multilevel campaign to reduce overprescribing without impairing patient satisfaction. For example, patient satisfaction in terms of pain management improved after the intervention from 52% to 61%. Early adopters of conservative prescribing relayed anecdotes of patients expressing gratitude for the discussion about non-opioid alternatives. In addition, prescribers came to understand that the gravity of the overdose crisis warrants more oversight by clinically informed medical directors.

Using tools in the EMR, such as visualization of the opioid use in the last 24 hours to guide discharge prescribing, and setting defaults combined with guidelines for the emergency department and discharge prescribing, were found to be the most impactful interventions.
SPREAD AND SUSTAINABILITY

The overall findings strengthen our quality of care as hospitalists, and clinicians expressed satisfaction with department-wide standards that made it easier for them to cite adherence to protocols to reduce prescribing volumes. AAMC hopes to sustain success with opioid prescribing through our ability to electronically prescribe opioids remotely through the EMR. This will facilitate smaller-volume initial prescriptions because a subsequent prescription can be provided more easily and only if necessary. Enhanced access to information can aid in determining future aims such as ideal opioid discharge volume.