

# Reducing Opioid Prescribing Rates in Emergency Medicine

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**Background:** Pain management is one of the most common reasons patients visit the emergency department. Understanding the contributions of emergency medicine—and specifically Ochsner Health System’s emergency providers—to the opioid crisis is important. Benchmark prescribing data indicated that Ochsner Health System emergency medicine providers’ opioid prescription rates were significantly higher than the national average in emergency medicine.

**Methods:** Data relevant to visit and opioid prescription counts were extracted from the organization’s electronic health record system. Opioid prescription rates were calculated for each provider. A data transparency project was initiated in which provider opioid prescription rates were unblinded and distributed among the provider group.

**Results:** Opioid prescription rates declined in aggregate for the emergency services from 22% to 14% during the 1-year project timeline. Some physicians demonstrated a 70% reduction in prescription rates. Importantly, patient satisfaction scores were not negatively impacted by declining opioid prescription rates.

**Conclusion:** Provider performance transparency using unblinded and transparent data analytics can efficiently and significantly alter provider practice.

**Keywords:** Analgesics–opioids, chronic pain, drug prescriptions, emergency medicine, quality improvement, systems analysis

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## INTRODUCTION

Pain management is one of the most common reasons patients visit the emergency department (ED).<sup>1,2</sup> Several studies have validated this finding, and this conclusion is further supported by data from the Ochsner Health System, which show that 60% of ED superutilizers (defined as patients with more than 10 ED visits in a 12-month period) have a chief complaint related to acute or chronic pain syndromes. Understanding emergency medicine’s role in the opioid crisis is important.<sup>3</sup> A 2015 study seeking to understand the magnitude of the issue in emergency medicine found that 17% of all patients discharged from the ED received opioid prescriptions.<sup>3</sup> Interestingly, this statistic represents a much lower opioid prescription utilization by emergency physicians than is commonly assumed.<sup>4</sup>

## METHODS

To internally measure and benchmark the Ochsner provider opioid prescription rates, data from Epic (the institution’s electronic health record system) were used. The following data elements were extracted: (1) provider name, (2) patient encounters with a discharge disposition, and (3) opioid-classified prescription counts. Metadata

related to pill counts and morphine equivalents per prescription were also extracted.

These data elements were used to calculate the following: (1) opioid prescribing rate for emergency providers for patients discharged from the ED and (2) each prescriber’s percentile rank. The analytics were built to benchmark rates specific to both the provider’s home facility and the larger emergency services system overall. Related calculations measured pill counts and morphine equivalents per prescription.

The drug query looked for all ED patient discharges with an associated medication record pharmaceutical class (set by the First Databank medication record import) of “ANALGESICS, NARCOTICS [130].”

The Ochsner Health System prescription safety leadership team selected the Ochsner-West Bank ED for the initial intervention. Ochsner-West Bank is a moderately sized ED with a volume of 50,000 visits per year.

The project was designed in phases. Phase 1 included the distribution of educational materials describing the background of the opioid crisis and general information related to emergency medicine’s contribution to this crisis. Phase 2 initiated a monthly distribution of provider-specific opioid prescribing rates for a 3-month period. These results were initially blinded (Table). Phase 3 reported

unblinded data, showing provider opioid prescribing rates and associated percentile ranks. These reports were distributed monthly ongoing. The reporting included the providers' opioid prescribing rate for a fixed look-back period and the providers' percentile ranks compared to their department peers. The reports were anonymized for the first 3 months of the intervention period. After 3 months (May, June, and July 2016), the reports were unblinded so that providers could identify both their own prescribing rate and that of their peers. These reports were then distributed on a monthly basis to the Ochsner-West Bank emergency physicians. Within the first 2 months of distribution of the unblinded provider opioid prescription rates, it became clear that the distributed unblinded opioid prescription data were having a significant impact on provider prescribing behavior. Considering that impact, the project was then fast-tracked to include all of the remaining EDs.

The formula for calculating the prescribing rate was total opioid prescriptions divided by total patients discharged sorted by provider:

$$\text{total opioid prescriptions/total patient discharges} \\ = \text{prescribing rate}$$

The percentile ranking of each provider was determined by listing the prescribing rates for each individual in order and calculating what percentage of the group prescribed at a rate less than the prescriber being calculated for. This operation can be performed in Excel by using the following formula:

$$= \text{Percentile.EXC} (\text{range of all prescribing rates being} \\ \text{compared against, prescribing rate of an individual} \\ \text{for which the percentile is being calculated})$$

We postulated that providers had poor visualization of their individual practice behaviors generally and specifically of their opioid prescribing rates. Our project assumption, as demonstrated in the antibiotic stewardship research,<sup>5</sup> was that prescribing rate data distributed to physicians unblinded and trended over time might impact prescribing rates through behavior modification without the necessity of instituting incentives, penalties, or other draconian measures to impact provider practice. With this project, we tested the question, "Could using prescriber analytics lead the provider to take a thoughtful pause before prescribing opioids and instead consider alternative medications?"

Providers' practice environments vary, and a typical ED has a wide variety of patient types and acuities. Some EDs employ split-flow systems in which certain patient types and certain patient acuities are sorted and disproportionately routed to one arm of the patient flow stream. In such a system, many more low-acuity patient types, including pain management, are in one stream of the patient flow system, and these providers would be expected to have higher opioid prescribing rates. We understood, acknowledged, and openly communicated this statistical bias to our provider groups. The project goal was a reduction in opioid prescription rates independent of practice location, with no absolute opioid prescription rate target for any provider, facility, or practice nuance.

**Table. Blinded Facility Monthly Opioid Prescription Rate Report**

Provider	Opioid Prescribing Rate for Patients	
	Discharged	Percentile Rank
Blinded	16.7%	57
Blinded	17.2%	55
Blinded	18.2%	49
Blinded	18.4%	48
Blinded	19.0%	46
Blinded	19.2%	45
Blinded	20.1%	42
Blinded	21.7%	34
Blinded	22.4%	30
Blinded	24.4%	29
Blinded	24.9%	27
Blinded	25.5%	24
Blinded	26.1%	22
Blinded	26.1%	21
Blinded	27.9%	17
Blinded	28.0%	16
Blinded	28.2%	15
Blinded	28.4%	14
Blinded	28.5%	13

Furthermore, provider fear that reducing opioid prescription rates might adversely impact patient satisfaction with the ED visit needed to be addressed. Patient satisfaction was a potential and significant constraint. To determine the validity of this concern and potentially mitigate it, each provider's individual patient satisfaction scores were tracked along with his/her opioid prescription rates for the same period of time.

## RESULTS

Our analytics pegged the benchmark Ochsner ED opioid prescription rate at 22%. As noted, a 2015 study benchmarked emergency physicians' opioid prescribing rates nationally at 17%.<sup>3</sup>

Drilling down further into the Ochsner prescribing data, detailed analyses revealed that the top 3 drugs prescribed within the opioid drug group were hydrocodone (53.06%), tramadol (29.13%), and oxycodone (15.73%).

Figure 1 shows the opioid prescriptions per day for the prelaunch measurement period of April 2016 to June 2016 and the resultant decline in prescribing rates as the data were unblinded during the course of 1 year (July 2016 to July 2017). The number of opioid prescriptions decreased from 185 prescriptions per day in July 2016 to 115 per day in July 2017.

Figure 2 shows the opioid prescription rate for the prelaunch measurement period of April 2016 to June 2016 and the decline during the course of 1 year (July 2016 to July 2017). The opioid prescription rate decreased from

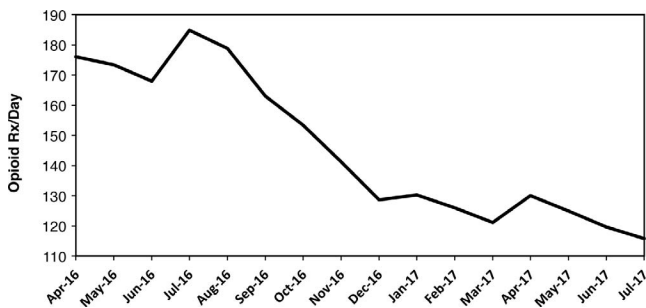


Figure 1. Daily opioid prescriptions (Rx).

22% in July 2016 to 14% in July 2017, lower than the benchmark national average of 17%.

Figure 3 shows the opioid prescription rates for 8 facilities in the Ochsner Health System beginning with the prelaunch period of April 2016 to June 2016 and continuing through the project period of July 2016 through July 2017. During the benchmark period, 25% of facilities had prescribing rates below the national benchmark of 17%. At project end, 100% of facilities were at or below the national benchmark.

Figure 4 demonstrates the statistically flat response of increasing opioid prescribing rates related to patient experience using Press Ganey Top Box score data. The dots represent individual provider prescription rates vs Top Box patient experience scores (trend line). During this time frame, patient experience scores actually improved incrementally with lower opioid prescription rates, the opposite of the commonly held belief that patient satisfaction would decline if patients were denied opioid prescriptions at discharge.

**DISCUSSION**

Our assumption that providers who received utilization and performance practice data would respond by significantly reducing opioid prescription rates purely through behavioral modification was proven to be true. All providers and all facilities significantly reduced opioid prescription rates, in some cases as much as 70%.

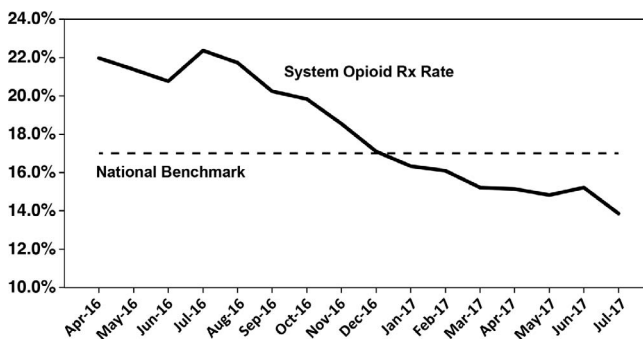


Figure 2. Average opioid prescription (Rx) rates vs national benchmark.

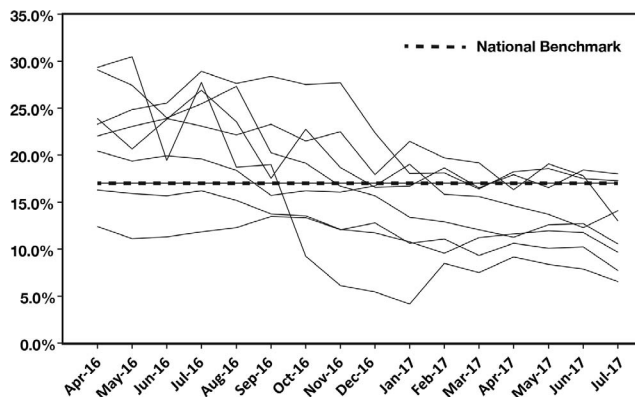


Figure 3. Ochsner Health System facility-specific opioid prescription rates.

Furthermore, we demonstrated no negative impact on patient satisfaction when prescribing rates decreased. Reducing opioid utilization for pain management did not result in lower patient experience scores. Establishing in the minds of providers that reducing opioid prescribing would not impact patient satisfaction was an important outcome of the project.<sup>6</sup>

Traditional incentives, including financial incentives, were not needed, nor were any punitive measures required. This initiative was an efficient, simply executed change management process. It was important to the project success to constantly and openly acknowledge the statistical bias and to emphasize that the analysis and results would not be judgmental, as practice location and patient selection prevented any such conclusions.

**CONCLUSION**

Provider performance data distributed in an open, unblinded format can have a significant impact on provider practice and represent an effective and efficient method for process improvement and practice modification through behavioral interventions.

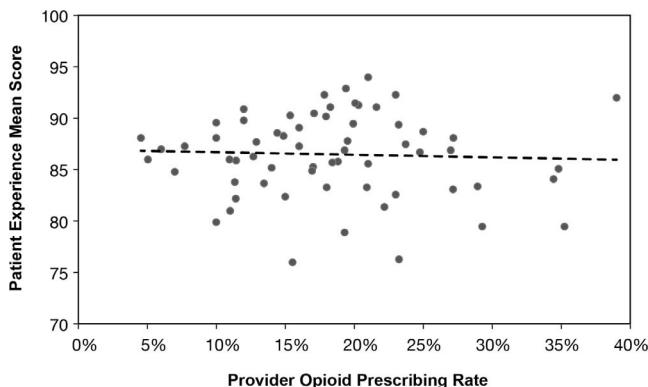


Figure 4. Opioid prescription rate vs Press Ganey Top Box patient experience scores.

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