



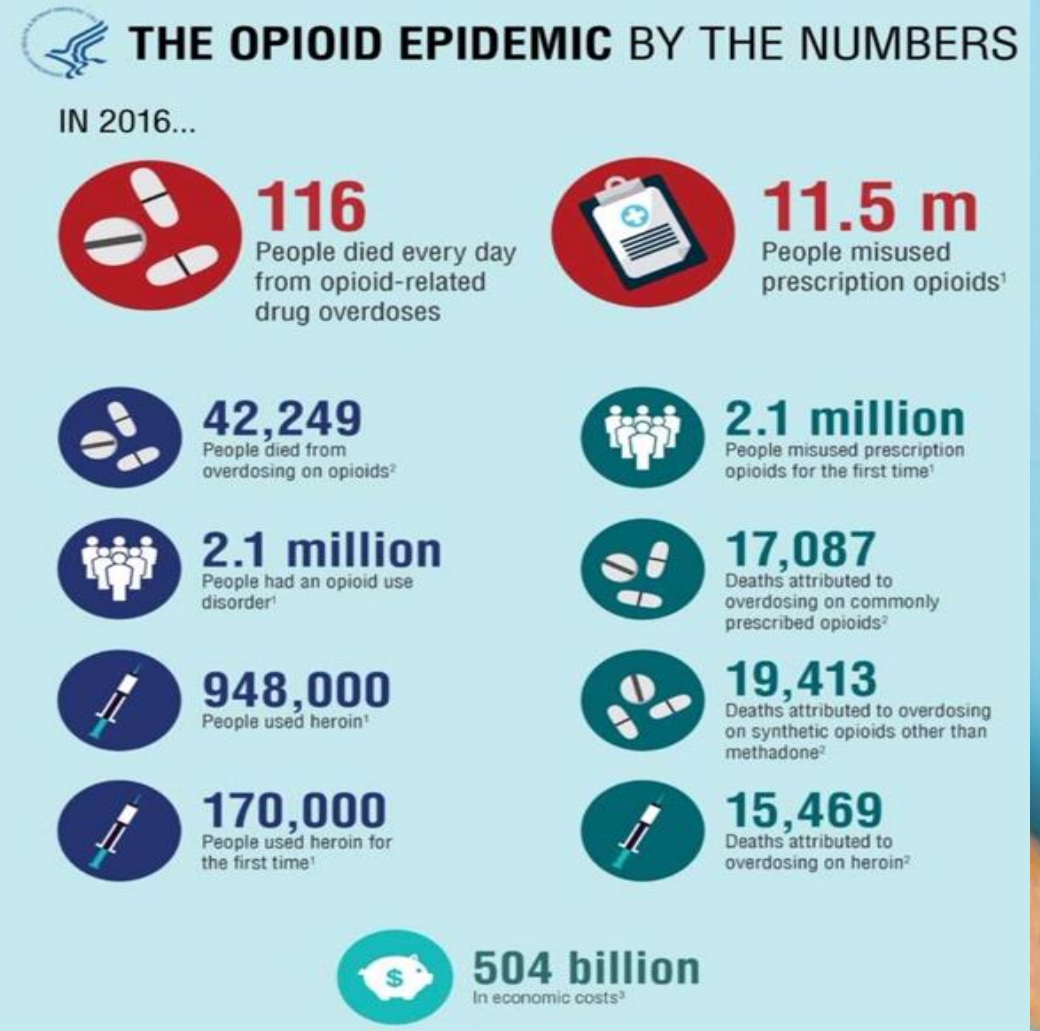
Why are we here?

The New Pain Management Environment

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Background

- Opioid medications are highly addictive pain medications
- Opioid overdose and abuse reaching epidemic proportions in the United States
- More people now die from drug overdoses than from accidents and firearms combined
 - 147 opioid related deaths occur every day in the US



Background



- Legitimate prescriptions are the largest source of prescription drug misuse
- In 2015,
 - 6220 youth surveyed annually
 - 12th grade to age 23 y,
 - Miech et al. demonstrated increase in opioid misuse at age 19-23 y among youth exposed to opioid medications prior to high school graduation

Background

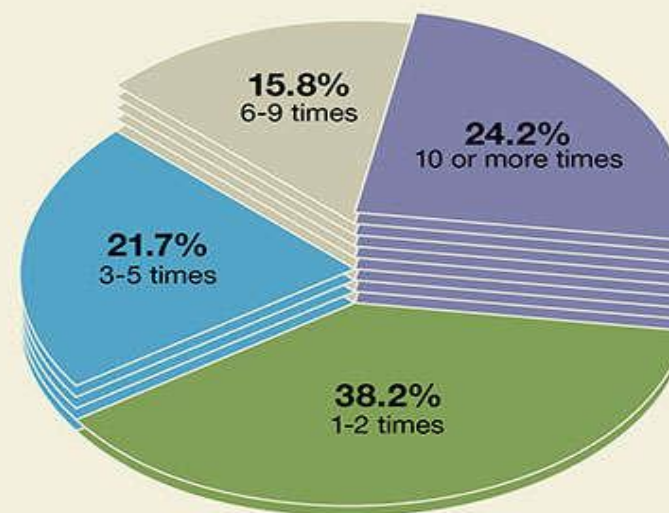


Variable		Relative Risk	Confidence Interval
Legitimate use of prescription opioids by 12th grade		1.33	1.04–1.7
Lifetime prescription opioid misuse occasions by 12th grade			
<u>NOTE:</u> Opioid misuse after high school as expected associated with prior opioid misuse up to 12 th grade. <u>Opioid misuse also associated with legitimate use of prescription opioids by 12th grade.</u>	None	Reference	
	1-2	1.97	1.4-2.77
	3-5	2.8	1.83-4.29
	6-9	3.2	2.06-4.96
	10-19	3.58	2.26-5.65
	20-39	5.88	3.19-10.8
	40+	4.63	2.79-7.67



high school seniors surveyed reported nonmedical prescription opioid use in the past year.

Past-Year Nonmedical Use of Prescription Opioids by High School Seniors



McCabe, et al
Archives Pediatr Adolesc Med, 2012b

Background



- **Neonatal abstinence syndrome**
 - US incidence of NAS has sharply increased from 1.19 per 1000 hospital births in 2000, to 5.63 in 2012.
- Growing body of evidence that **opioids may be associated with specific birth defects**
 - congenital heart disease, neural tube defects, and club foot
- **Adverse effects on fetal brain development** from gestational prescription opioid exposure demonstrated
 - Volumes of the basal ganglia, thalamus, and cerebellar white matter were reduced in the opioid-exposed group

Background

- Rady Children's Hospital-San Diego
 - Region's pediatric center serving San Diego, Imperial and southern Riverside counties
 - Largest children's hospital in California (based on admissions)
 - Provider of care to 91% of the region's children
 - More than 900 physicians and >1,200 nurses on staff



San Diego Background



- From 2000-2016, 197 substance abuse deaths occurred in the Greater San Diego region among 0-21 y persons
 - 174 involved opioids
- 46% persons previously evaluated at Rady's
 - Touch point at Rady's
 - Offers us the opportunity to make a difference

Rady Ambulatory

Background Data 2015-2016

- Among the 13,196 short-term opioids prescribed in the outpatient setting for pain, **71%** exceeded CDC guidelines to limit opioid prescription quantities to 3 days' duration
- Surgical subspecialties were 5.1 (4.8, 5.6) times more likely than medical to violate CDC guidelines
- In a clinician survey (N=190)
 - **64%** No standard protocol for pain management
 - 39% Unable to recall or never received any education on pain assessment/management

Rady Inpatient

Background Data 2015-2016

- **225,219** opioid doses delivered to **11,575** patients over 14,350 inpatient encounters.
- Opioids were administered during **35.8%** of encounters and to **38.7%** of inpatients over the studied time period.
- On average, inpatients who received opioids received a median(IQR) of 5(3,10) doses & mean(SD) of 14(53) doses.
- Less than half (42.6%) demonstrated improvement in pain scores with opioid dosing

Rady Inpatient

Background Data 2015-2016

Surgical

- Cardiothoracic/CVICU
- Pediatric Surgery/Trauma
- Orthopedic Surgery
- Neurosurgery
- Plastic Surgery
- Otolaryngology
- Urology
- Oral Maxillofacial Surgery
- Anesthesia

Medical

- Hospital Medicine
- General Pediatrics
- Emergency Medicine
- Endocrinology
- Gastroenterology
- Genetics
- Gynecology
- Hematology
- Oncology
- Infectious Disease
- Metabolism
- Service
- Nephrology
- Neurology
- NICU
- Ophthalmology
- Pain Medicine
- Rehab Medicine
- PICU
- Psychiatry
- Pulmonology
- Rheumatology
- Unknown

Rady Background Data

- Survey to parents of children who had received an opioid prescription (November 1, 2016 – February 13, 2017)
- The majority of parent respondents (N=165, **93%**) reported filling opioid prescriptions when prescribed
- Of those who took opioids, most (**55%**) took the medication for 3 days at most (6% took none), and **86%** had left-over medication
- Most patients (**90%**) did not require a pain medication refill
- Among those with residual opioid medication, a minority (**35%**) disposed of the remaining medication

How did we get here?

- **Many theories**
- **Universal pain assessment – the 5th vital sign**
 - Pain is often underestimated, inadequately treated
 - Particularly in children
- **Problematic –**
 - Assessment by number
 - Drivers to eliminate all pain
 - Treatment to a number



Rethinking Our Approach

- Pain Assessment
- Multifactorial
 - Physical
 - Emotional
 - Socio/cognitive
- **While all pain deserves a management plan, not all pain demands pharmacy**
 - *Tolerable v. Intolerable*



Strategy



COPE

- Consider the patient and his/her situation
- Provide Non-pharmaceutical Options
- Consider Non-opioid Pharmaceuticals
- Eliminate risk

C = Consider the Patient

- Pain is a multidimensional experience
 - Physical
 - Emotional
 - Sociocognitive
- Factors
 - Family



O = Options



- There are a number of options available for treatment of pain
- Not all involve medications
- Non-pharmaceutical options exist, including many that will be presented here
 - Distraction
 - Acupuncture
 - Healing Touch

P = Pharmacy



- There are also a number of pharmaceutical options for pain
- Common belief that opioids are the most effective for pain management
- Recent studies refute this.
 - No benefit of opioid over non-opioid therapies for pain resolution among children taking pain medications for musculoskeletal trauma (Clark et al, Pediatrics 2007; Drendel et al, Ann Emergency Medicine, 2009)
 - Morbidity/Mortality established in infants, youth with respiratory issues (Verghese et al, J Pain Res 2010; Kelly et al, Pediatrics, 2012; Voelker, JAMA, 2012)

E = Eliminate Risk

- Legitimate prescriptions = largest source of prescription drug misuse
- **86%** patients prescribed opioid medications have left over medications
- Minority (**35%**) disposed of the remaining medication
- Need to ensure medications are secured in the home (locked cabinet) and/or safely disposed



Rethink the Culture

- Rethinking the Culture of Pain Assessment and Management
 - Takes support
 - Takes time
 - Takes effort
 - All in the team have to be on board
- Messaging consistent from prescriber to healthcare team to patient education



Join the Culture

- Join us in the effort for safe pain management at Rady's
- Several efforts at Rady's
 - Urology
 - Plastic Surgery
 - Orthopedics
 - Emergency Medicine
- Opioid Task Force



Urology

Aim Statement: Reduce narcotic **use** in patients undergoing outpatient urologic surgery (inguinal and penile surgery, excluding hypospadias), by reducing median narcotic doses **prescribed** per patient by 25%.

Baseline

- 11.4 doses

Goal

- ≤ 8.5 doses

Outcome

- 5.0 doses

Measure:

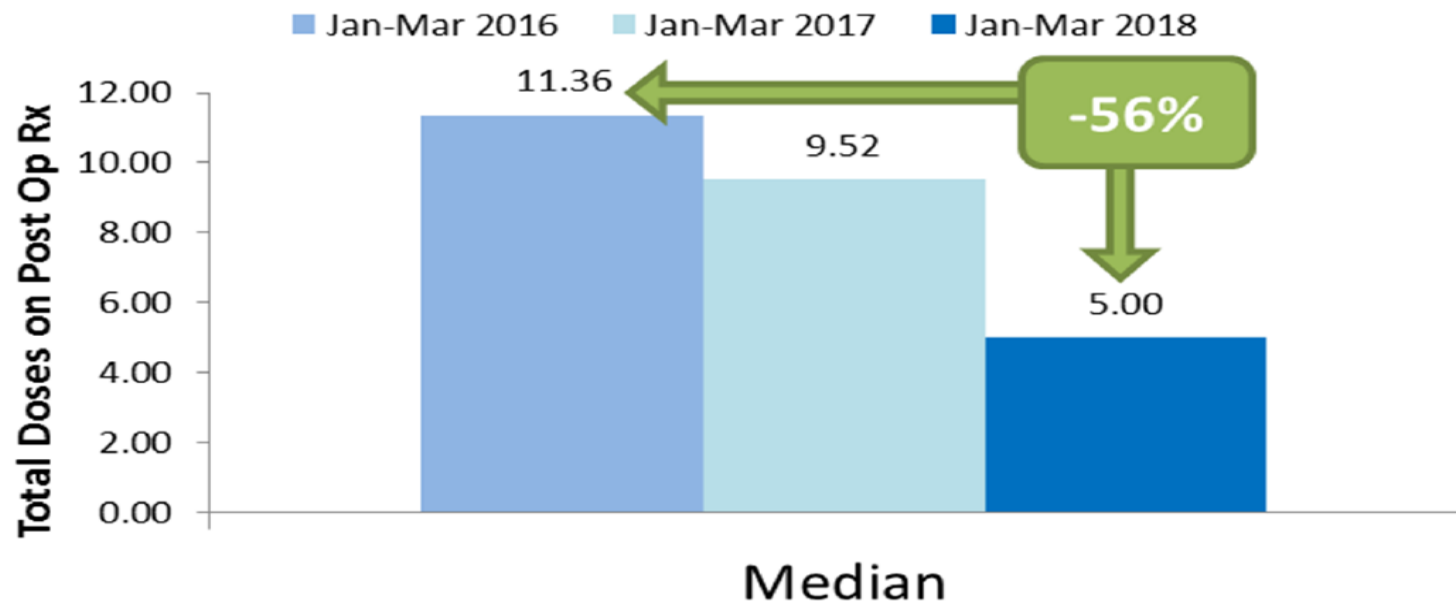
Median Narcotic doses prescribed per outpatient urologic surgery case

Measurement Period:

Jan-Mar 2018

*76 patients per month
*Decrease of 6.4 doses per patient
5,800 fewer post-op opioid doses per year

Post Op Opioid Doses Prescribed - All Outpatient Urology Sx Pts (excl. Hypospadias)



Plastic Surgery

Aim Statement: The division of Plastic Surgery will seek to reduce its post operative narcotic use to less than **3 days** of doses prescribed post operative in more than 75% of patients undergoing surgery.

Baseline

- 69% < 3 days

Goal

- $\geq 75\%$

Outcome

- 94% < 3 days

Measure:

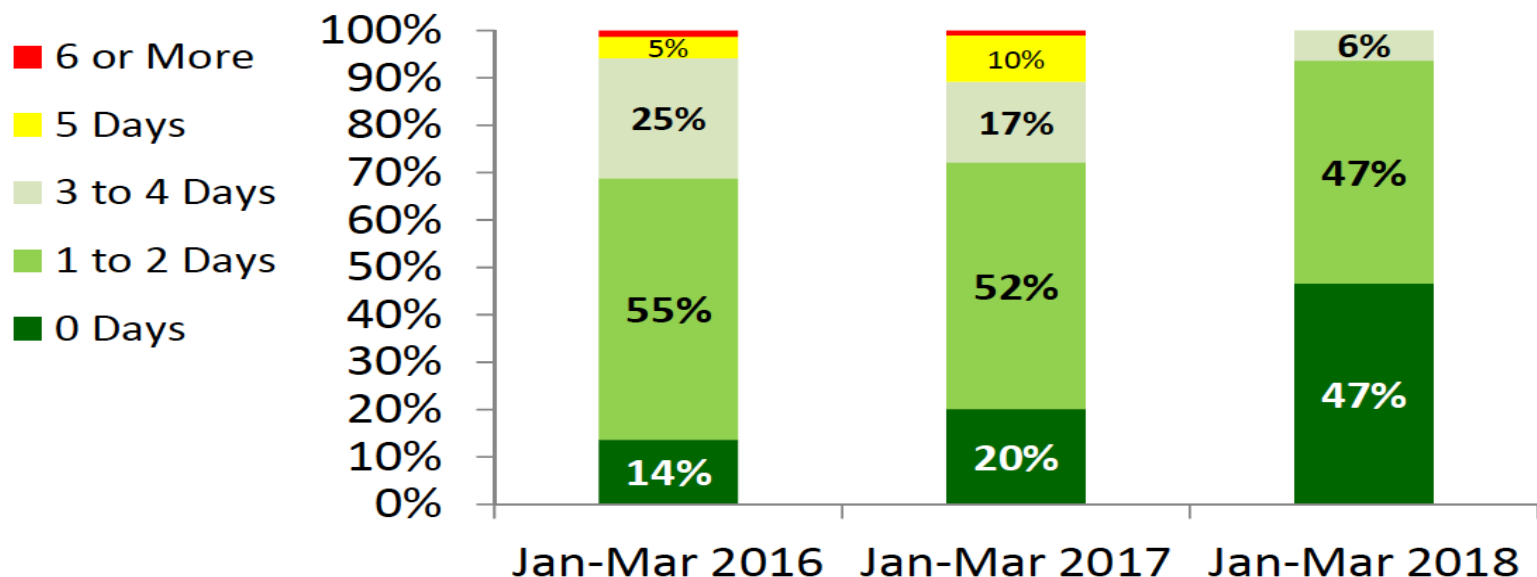
Percent Plastic Surgery cases prescribed < 3 days of opiate pain medication

Measurement Period:

Jan-Mar 2018

*72 patients per month
*Decrease of 4.6 doses per patient
4,000 fewer post-op opioid doses per year

Days of Post Op Opioid Doses - % of All Patients with Plastic Surgery



Pts with Zero doses:

From 14%



Increased to 47%

Pts < 3 days doses:

From 69%



Increased to 94%

Pts < 5 days doses:

From 94%



Increased to 100%

Orthopedics

Aim Statement: Decrease median narcotic doses prescribed by 50% for patients with a completed posterior spinal fusion, periacetabular osteotomy or ACL reconstruction surgery in Jan-Mar 2018.

Baseline

- 40 doses

Goal

- ≤ 20 doses

Outcome

- 20 doses

Measure:

Median Narcotic doses prescribed per included surgery case

Measurement Period:

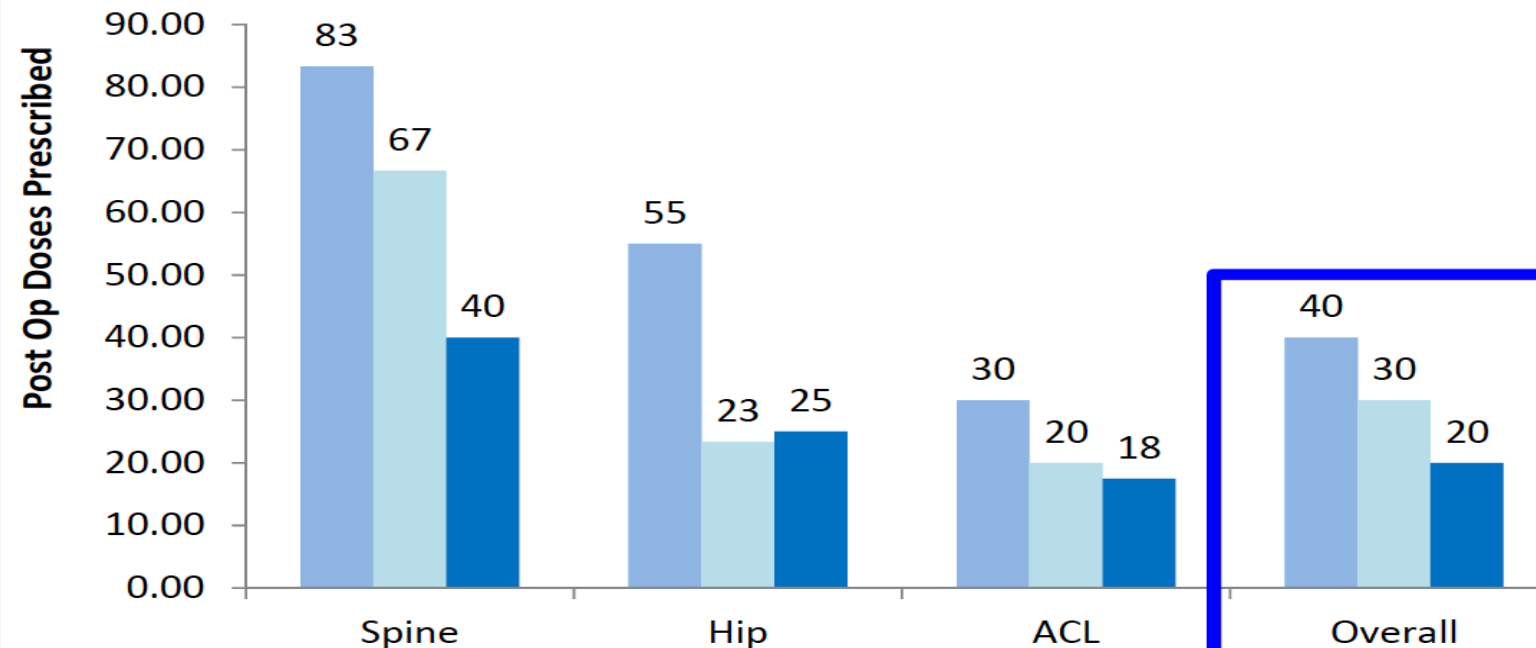
Jan-Mar 2018

*30 patients per month
*Decrease of 20 doses per patient

7,200 fewer post-op opioid doses per year

MEDIAN Post Op Doses Prescribed

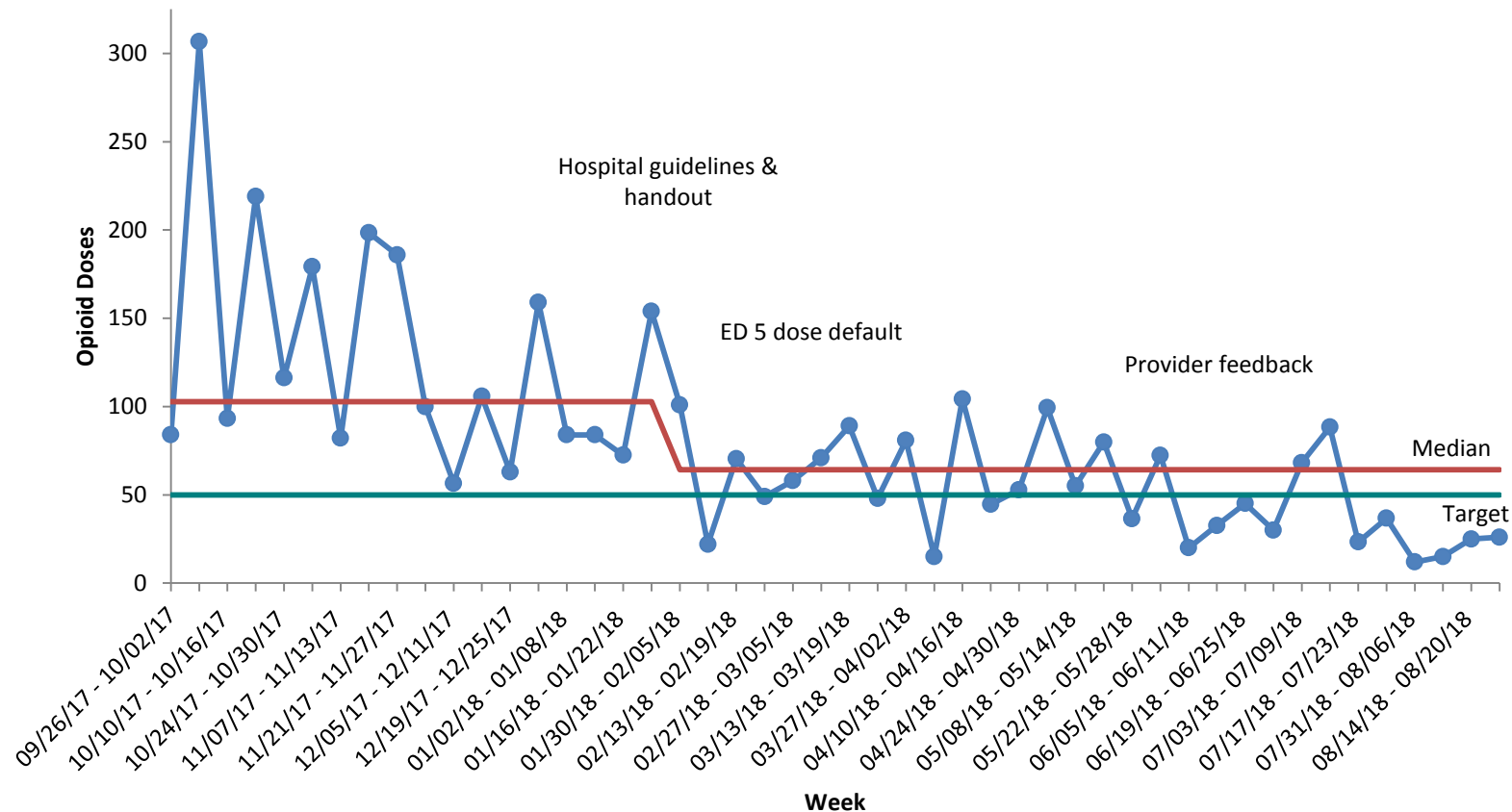
■ Jan-Mar 2016 ■ Jan-Mar 2017 ■ Jan-Mar 2018



Emergency

Aim Statement: To reduce total opioid doses prescribed weekly from the Pediatric Emergency Department by 50% within 6 months

Total # Opioid Doses Prescribed Weekly from ED



Intervention:

- Hospital guidelines/opioid discharge handout
- 5 dose default in EPIC for ED Opioid prescriptions
- Provider education
- Provider specific feedback

Measure:

Total opioid doses prescribed weekly from ER

Outcomes:

Significant reduction in total # opioid doses prescribed from the ER

Opioid Task Force Intervention

- Multi-pronged
 - Ambulatory
 - Inpatient
 - Education
- Multi-disciplinary Task Force
 - Physicians
 - Pharmacists
 - Nurses
 - Patients/Families



Opioid Task Force Intervention



An EHR supported intervention to reduce unnecessary prescription of opioid medications for acute pain management in children

- Initial targets in the ambulatory care arena
- Provided decision support to reduce duration of opioid prescriptions
- Provided patient education materials discussing opioid-related risks, opioid overdose presentation, need for safe storage and disposal of remaining medication

Preliminary Outcomes

Feb-June PRE (2017) v. POST (2018)

Notable reduction in number of opioid prescriptions

- # prescriptions: 3,794 v. 2,933, 2017 v. 2018 = **861** fewer prescriptions

Reduction in # days' duration of opioid prescriptions by 1 day

- Median (IQR): 4 (3, 6) v. 3 (2, 5) days, 2017 v. 2018, $p < 0.0001$

Increase in % prescriptions ≤ 3 days: now over 1/2

- % $\leq 3d$: 44% v. 57%, 2017 v. 2018, $p < 0.0001$

Largest effects seen in surgical services

- *Days' Duration*: 4 (3, 7) v. 3 (2, 5), 2017 v. 2018, $p < 0.0001$

The CMS Quality Improvement And Innovation Group Challenge Coin Award

National Expert Panel, August 3, 2018

Rady Children's Hospital – Pain/Opioid Management Task Force



Pain/Opioid Management Task Force



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