Opioid Sparing Strategies

Concepts-Implementation-Sustainability

Vijaya Gottumukkala
M.B;B.S, M.D (Anes), F.R.C.A
Professor & Deputy Chairman
Director, Cancer Anesthesia Fellowship Program
Director, Program for Advancement of Perioperative Cancer Care
Associate Head, Institute for Cancer Care Innovation
Department of Anesthesiology & Perioperative Medicine
The University of Texas MD Anderson Cancer Center
Houston, Texas- U.S.A

www.mdanderson.org/innovation/cancercarevalue
Objectives:

• Discuss the societal burden of the opioid epidemic
• Discuss comprehensive strategies to effectively manage patient’s pain experience
• Discuss a framework for implementing multimodal opioid sparing strategies
• Discuss data driven programs for sustainability of successful opioid sparing strategies
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The Opioid Crisis by the Numbers

Mortalities

174 Americans die from drug overdose each day.¹

66,817 People died from drug overdose for the 12 months ending June 2017.²

16.3% Increase in overdose deaths between June 2016 and June 2017.³

21% Increase in drug overdose deaths between 2015 and 2016.⁴

300,000 people reported using heroin in the past year.⁵

26,500 overdoses reversed by laypeople using naloxone from 1996 to 2014.⁶

2 million Americans had a substance use disorder involving prescription pain relievers in 2015.⁷

92,100 children in the foster care system in fiscal year 2016, whose removal from the home was associated with circumstances involving parents’ drug abuse.⁸

The opioid crisis cost $504 Billion in 2015.⁹

2.8% of GDP

Percentage of the U.S. Gross Domestic Product associated with the cost of the opioid crisis.⁴

20% of reduction in the male workforce is attributed to opioid use.⁹

Three states with the highest age-adjusted overdose rates per 100,000:³

- Ohio: 39.1
- West Virginia: 52.0
- New Hampshire: 39.0

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7 out of 10 high school seniors who reported nonmedical use of prescription opioids used them in combination with other drugs in the past year.

Frequency of Co-Ingestion With Other Drugs

- 34.2% with one other drug
- 38.7% with two other drugs
- 27% with three other drugs

Drugs Seniors Most Often Used in Combination With Nonmedical Use of Prescription Opioids

- Marijuana 58.5%
- Alcohol 62.1%
- Cocaine 10.6%
- Tranquilizers 10.3%
- Amphetamines 9.5%
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OPIOID OVERUSE ON THE RISE; MORE WIDESPREAD ACROSS U.S.

HOSPITALIZATIONS
Between 2002 and 2012, the rate of hospitalizations for opioid misuse among adults 18 years and older increased by more than 40 percent. By 2012, U.S. hospitals recorded a total of 700,000 opioid-related hospitalizations. Rates were highest in the Northeast and Midwest regions.

COSTS
Total spending on prescription opioids (painkillers like oxycodone, codeine, fentanyl, and hydrocodone) more than doubled (doubled) between 2002 and 2012. Even after adjusting for inflation, total out-of-pocket spending fell by more than 30 percent.

DEMOGRAPHICS
In 2012, young adults between the ages of 25 and 44 had the highest hospitalization rates for opioid misuse. Older than 65 years, hospitalization rates were highest among adults between the ages of 65 and 69.
# Opioid Sparing Strategies
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<table>
<thead>
<tr>
<th>Source</th>
<th>Opioid Sparing Strategies</th>
</tr>
</thead>
</table>
| **DOD/VA**<sup>1</sup> | - Opioid Safety Initiative (OSI)  
- “A multi-faceted approach to reduce the use of opioids among America’s Veterans using VA healthcare.” |
| **CDC**<sup>2</sup> | - Potential for long-term use, diversion, misuse, abuse, or overdose  
- “Prescription drug overdose is epidemic in the United States. All too often, in far too many communities, the treatment is becoming a problem.”  
  - Thomas Frieden, director of the CDC |
| **TJC**<sup>3</sup> | - Patient-centered approach; patients are actively looking for pain-management solutions that don’t lead to dangerous addiction  
- Pain management incorporated in quality-driven, value-based reimbursement models |
| **HHS/CMS**<sup>4,5</sup> | - ADE Action Plan: outcomes-based  
- Targeting 90% of Medicare payments for value-based care by end of 2018<sup>5</sup> |
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<table>
<thead>
<tr>
<th>Federal Government</th>
<th>State Government</th>
<th>Local Communities</th>
</tr>
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<tr>
<td>Data Gathering</td>
<td>Data Gathering</td>
<td>Data Gathering</td>
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<tr>
<td>Funding</td>
<td>Funding</td>
<td>Public &amp; Private Treatment Centers</td>
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<tr>
<td>Border Security</td>
<td>Regulatory Changes</td>
<td>Naloxone</td>
</tr>
<tr>
<td>Regulatory Changes</td>
<td>State Security/Interstate Highways</td>
<td>Public Awareness Campaigns</td>
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<tr>
<td></td>
<td></td>
<td>Law Enforcement</td>
</tr>
</tbody>
</table>

*Montrose Group LLC*

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There are no easy answers’ but there are simple answers. We must have the courage to do what we know is morally right.

Ronald Reagan
40% of all opioid overdose deaths involve a prescription opioid.

Source: Centers for Disease Control and Prevention
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5 opioids risk management strategies

1. Prevention & education
2. Minimizing early exposure
3. Reducing inappropriate supply
4. Treating the at-risk & high-risk
5. Supporting chronic populations and those in recovery

Optum.com
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• Better patient education on expectations, quantifying and managing pain experience with all available/appropriate options to maintain functionality

• Better training on monitoring and timely rescue of ORADE (Opioid Related ADverse Events)
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UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.

0 1 2 3 4 5 6 7 8 9 10

Verbal Descriptor Scale

0: NO PAIN
1: MILD PAIN
2: MODERATE PAIN
3: MODERATE PAIN
4: SEVERE PAIN
5: WORST PAIN POSSIBLE

WONG-BAKER FACIAL GRIMACE SCALE

0: Alert Smiling
1: No humor serious flat
2: Pursed lips breath holding
3: Wrinkled nose raised upper lips rapid breathing
4: Slow blink open mouth
5: Eyes closed moaning crying

ACTIVITY TOLERANCE SCALE

0: CAN BE IGNORED
1: INTERFERS WITH TASKS
2: INTERFERS WITH CONCENTRATION
3: INTERFERS WITH BASIC NEEDS
4: BEDREST REQUIRED
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• Better provider education on assessing and managing overall pain experience with a holistic approach

• Better understanding of clinical pharmacology of opioids and NOPA (Non Opioid Pain Adjuncts)

• Better training on monitoring and timely rescue of ORADE (Opioid Related Adverse Events)
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QUEST FOR Relief
Question the Patient
Use Pain Rating Scales
Evaluate Behavior
Set Realistic Pain Relief Goals
Take Action!

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GOAL
IS NOT
ZERO PAIN
EXPERIENCE: Optimal Analgesia = Best Experience

- Optimized Patient Comfort
- Fastest Functional Recovery
- Fewest Side Effects

http://aserhq.org
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Opioid based pain management regimens *alone* are not efficacious or cost-effective for functional recovery.
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Incidence of Pain Severity Post Surgery

Anesth Analg 2003;97:534–40

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## Risk-Adjusted Clinical and Cost Outcome Estimates for Patients With and Without ORADEs

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Value (95% CI)</th>
<th>No ORADE</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient mortality, %</td>
<td>3.0 (2.8-3.3)</td>
<td>0.1 (0.1-0.2)</td>
<td>2.9</td>
</tr>
<tr>
<td>Discharge to another care facility, %</td>
<td>20.0 (19.5-20.6)</td>
<td>10.4 (10.2-10.6)</td>
<td>9.6</td>
</tr>
<tr>
<td>LOS, d</td>
<td>6.8 (6.7-6.8)</td>
<td>5.2 (5.1-5.3)</td>
<td>1.6</td>
</tr>
<tr>
<td>Cost of hospitalization, $</td>
<td>25,599 (24,974-26,104)</td>
<td>17,374 (17,191-17,547)</td>
<td>8225</td>
</tr>
<tr>
<td>30-d Readmission, %</td>
<td>8.9 (8.5-9.4)</td>
<td>7.1 (7.0-7.3)</td>
<td>1.8</td>
</tr>
</tbody>
</table>
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Intensity of Pain After Discharge:
81% Report Moderate to Extreme Pain

# Opioid Sparing Strategies

**Concepts-Implementation-Sustainability**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Minor Surgery Group</th>
<th>Major Surgery Group</th>
<th>Control Group</th>
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</thead>
<tbody>
<tr>
<td>Varicose Vein Removal</td>
<td></td>
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<tr>
<td>Laparoscopic Cholecystectomy</td>
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<tr>
<td>Laparoscopic Appendectomy</td>
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<tr>
<td>Hemorrhoidectomy</td>
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<tr>
<td>Thyroidectomy</td>
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<tr>
<td>Transurethral Prostate Surgery</td>
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<tr>
<td>Parathyroidectomy</td>
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<tr>
<td>Carpal Tunnel</td>
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<tr>
<td>Ventral incisional Hernia Repair</td>
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<tr>
<td>Colectomy</td>
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<tr>
<td>Reflux Surgery</td>
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<tr>
<td>Bariatric Surgery</td>
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<tr>
<td>Hysterectomy</td>
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<tr>
<td>Nonoperative Comparisons</td>
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</tr>
</tbody>
</table>

*Incidence of New Opioid Use, %*

*JAMA Surg. 2017;152(6):e170504*
Use **condition/procedure specific multimodal opioid sparing strategies** to manage patient’s pain needs.
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Anesthesiology 2018; 128:891-902
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Complication Rate of High-Dose Opioid and Moderate-Dose Opioid Use

- High-Dose Opioid Regimen: 7.63%
- Moderate-Dose Opioid Regimen: 4.87%

Lower-opioid approach reduces complications by 36% (n= 2,569,321 cases, p<0.001)

Cost and Quality Impact of Multi-Modal Pain Regimens

- Length of Stay of Cases with High-Dose Opioid and Moderate-Dose Opioid Use
  - High-Dose Opioid Regimen: 3.71 days
  - Moderate-Dose Opioid Regimen: 2.64 days

Lower-opioid approach shortens LOS by 29% (n= 2,569,321 cases, p<0.001)

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# Opioid Sparing Strategies

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<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>Pain Components</th>
<th>Non opioid Meds</th>
<th>Infiltration Techniques</th>
<th>Regional Blocks</th>
<th>Neuraxial Techniques</th>
<th>Non Pharmacol</th>
<th>Patient Specific Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver</td>
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<td>Thoracic</td>
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<tr>
<td>Neuro Spine</td>
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<td>Ortho Spine</td>
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<td>Colorectal</td>
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<tr>
<td>Bladder</td>
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<tr>
<td>Gyn</td>
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<tr>
<td>Gyn (MIS)</td>
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<tr>
<td>Head &amp; Neck</td>
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<tr>
<td>Breast</td>
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</tbody>
</table>
# Opioid Sparing Strategies

**Concepts-Implementation-Sustainability**

## MDACC ERP Implementation Outcomes - LoS & MEDD

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>LoS</th>
<th>MEDD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gynecology</strong></td>
<td>0.6 LOS, 72% MEDD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bladder</strong></td>
<td>2.3 LOS, 63% MEDD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pancreas</strong></td>
<td>4 LOS, 20% Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Liver</strong></td>
<td>1 LOS, 60% MEDD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thoracic</strong></td>
<td>1 LOS, 85% MEDD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spine</strong></td>
<td>2 ICU LOS, 17% MEDD</td>
<td></td>
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</tr>
</tbody>
</table>
The estimated impact a 10% reduction in surgery-related opioid prescribing could have:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="pill.png" alt="Pills" /></td>
<td>332 million fewer unused pills per year that are flowing into communities, substantially reducing the opportunities for prescription opioid diversion and misuse</td>
</tr>
<tr>
<td><img src="checklist.png" alt="Checklist" /></td>
<td>300,000 fewer people each year becoming persistent opioid users following surgery, significantly reducing the number of patients at high risk of dependence or addiction</td>
</tr>
<tr>
<td><img src="dollar.png" alt="Dollar" /></td>
<td>$830 million saved annually in drug costs alone</td>
</tr>
</tbody>
</table>
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3.3 BILLION unused pills available for misuse

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Robust monitoring of opioid prescription, use and disposal practices, and recognition of overdose
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BMJ 2018;360:j5790
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BMJ 2018;360:j5790
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## Concepts-Implementation-Sustainability

Johns Hopkins Expert Panel Recommendations for Ideal Range of Oxycodone 5-mg Tablets to Prescribe to Opioid-Naïve Patients on Discharge after Undergoing Select Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Range (minimum-maximum)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Laparoscopic cholecystectomy (procedure 1)*</td>
<td>0–10</td>
</tr>
<tr>
<td>Laparoscopic inguinal hernia repair, unilateral (procedure 2)*</td>
<td>0–15</td>
</tr>
<tr>
<td>Open inguinal hernia repair, unilateral (procedure 3)*</td>
<td>0–10</td>
</tr>
<tr>
<td>Open umbilical hernia repair</td>
<td>0–15</td>
</tr>
<tr>
<td><strong>Breast surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Partial mastectomy without sentinel lymph node biopsy (procedure 4)*</td>
<td>0–10</td>
</tr>
<tr>
<td>Partial mastectomy with sentinel lymph node biopsy (procedure 5)*</td>
<td>0–15</td>
</tr>
<tr>
<td><strong>Thoracic surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Video-assisted thoracoscopic wedge resection</td>
<td>0–20</td>
</tr>
<tr>
<td><strong>Orthopaedic surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Arthroscopic partial meniscectomy</td>
<td>0–10</td>
</tr>
<tr>
<td>Arthroscopic ACL/PCL repair</td>
<td>0–20</td>
</tr>
<tr>
<td>Arthroscopic rotator cuff repair</td>
<td>0–20</td>
</tr>
<tr>
<td>ORIF of the ankle</td>
<td>0–20</td>
</tr>
<tr>
<td><strong>Gynecologic surgery and obstetric delivery</strong></td>
<td></td>
</tr>
<tr>
<td>Open hysterectomy</td>
<td>0–20</td>
</tr>
<tr>
<td>Minimally invasive hysterectomy</td>
<td>0–10</td>
</tr>
<tr>
<td>Uncomplicated cesarean delivery</td>
<td>0–10</td>
</tr>
<tr>
<td>Uncomplicated vaginal delivery</td>
<td>0</td>
</tr>
<tr>
<td><strong>Urologic surgery</strong></td>
<td></td>
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<tr>
<td>Robotic retropubic prostatectomy</td>
<td>0–10</td>
</tr>
<tr>
<td><strong>Otolaryngology</strong></td>
<td></td>
</tr>
<tr>
<td>Thyroidectomy, partial or total</td>
<td>0–15</td>
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<tr>
<td>Cochlear implant</td>
<td>0</td>
</tr>
<tr>
<td><strong>Cardiac surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Coronary artery bypass grafting</td>
<td>0–20</td>
</tr>
<tr>
<td>Cardiac catheterization</td>
<td>0</td>
</tr>
</tbody>
</table>
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Prescription Medicine Disposal

Unused medicines must be disposed of properly. Not doing so can be dangerous and may lead to unintended drug abuse. Use the options below to dispose of outdated or no longer needed medicines.

1. Bring to MD Anderson
   MD Anderson is now an authorized collection location. There are 2 locations, with green bins, where you can drop off medicine (this includes controlled substances such as hydrocodone, morphine, tramadol, etc.):
   - Floor 2 Pharmacy Main Building, Floor 2, near Elevator C
   - Mays Clinic Pharmacy Mays Clinic, Floor 2, near The Tree Sculpture
   - Visit the link below to find your local collection site:

2. DEA Drug Take Back Days
   - Accepts all medicines
   - Collects medicines 2 times a year
     - April
     - October
   - Visit https://takebackday.dea.gov for more information

3. At Home
   - Almost all medicines
   - Some can be flushed
     - For a full list of medicines that can be flushed visit: http://bit.ly/FlushableMed

If you choose to dispose of medicines at home, follow these tips:
1. Mix any unused medicine with garbage, coffee or cat litter.
2. Put the mixture in a sealed container.
3. Throw sealed container in trashcan.
4. Mark out all personal information on the medicine bottle.
5. Throw away the empty bottle.

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Look for these potential signs and symptoms...

- Blue or purple fingernails and lips
- Unresponsiveness to voice or touch
- Pinpoint-sized pupils

Recognizing an Opioid Overdose

When a person overdoses, breathing will slow dangerously and may stop altogether, eventually leading to brain damage or death.

- Slow heartbeat or low blood pressure
- Slow, irregular, or stopped breathing
- Pale, clammy skin

If you suspect an opioid overdose, call 911 and get emergency medical assistance immediately.

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HHS 5-POINT STRATEGY TO COMBAT THE OPIOID CRISIS

MORE ADDICTION PREVENTION, TREATMENT, AND RECOVERY SERVICES

BETTER PAIN TREATMENT

BETTER DATA

MORE OVERDOSE REVERSERS

BETTER RESEARCH

HHS.gov

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#### OneConnect Analytics – Across Subject Areas

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<th>Access</th>
<th>Billing</th>
<th>Patient Safety</th>
<th>Research</th>
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<tbody>
<tr>
<td>Clinical Ops Huddle</td>
<td>Referral Metrics</td>
<td>HB &amp; PB Overview</td>
<td>Patient Safety DB</td>
<td>Research Exec DB</td>
</tr>
<tr>
<td>CAD/CMD Dashboard</td>
<td>Strategic Capacity Management Dashboard</td>
<td>DI Revenue</td>
<td>Quality Tracking</td>
<td>Research Exec DB</td>
</tr>
<tr>
<td>Discharge Initiative</td>
<td>Patient Access Leadership</td>
<td>HB &amp; PB AR Director</td>
<td>Safety, Quality &amp; Outcome</td>
<td>Research Treated Protocols</td>
</tr>
<tr>
<td>Inpatient Leadership</td>
<td></td>
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<td>Research Revenue</td>
</tr>
</tbody>
</table>
Analytics Progress

• Partnering with ICCI, ERP Team & Pain Taskforce to provide institutional insights

• Focused deliverables to support institutional initiatives
Opioid MEDD Report

- Presents total morphine equivalent dose per day (MEDD) for previous X days during patient’s hospital admission
- Also displays patient’s current opioid orders as of midnight with calculated MED
Periop Pain Scores Report

- Interactive analysis of pain scores based on assessments from all phases of perioperative care
Hospital Days with High Pain Scores

- Interactive analysis of incidence of high pain scores during hospital admissions
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There are encouraging trends

Together we can make a difference
Thank you!