

# EQIC OPIOID “ROADE” WORK

## Reducing Opioid Adverse Drug Events

Webinar 2: Opioid prescribing guidelines and best practices

September 28, 2021



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EASTERN US QUALITY  
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# Agenda



<b>TOPIC</b>	<b>PRESENTER</b>
Introduction and recap	Aashna Taneja, MS, CPHQ Project Manager, EQIC
Opioid safety, prescribing and weaning	Matthew Jared, MD
Questions and next steps	Lindsay Milchteim, MPH, PCMH CCE Project Manager, EQIC

# Work so far. . .



- Opioid multi-disciplinary team
- Adverse Drug Event Gap Analysis for Opioids
- ListServ

# Gap analysis and best practices



## Adverse Drug Event Gap Analysis for Opioids

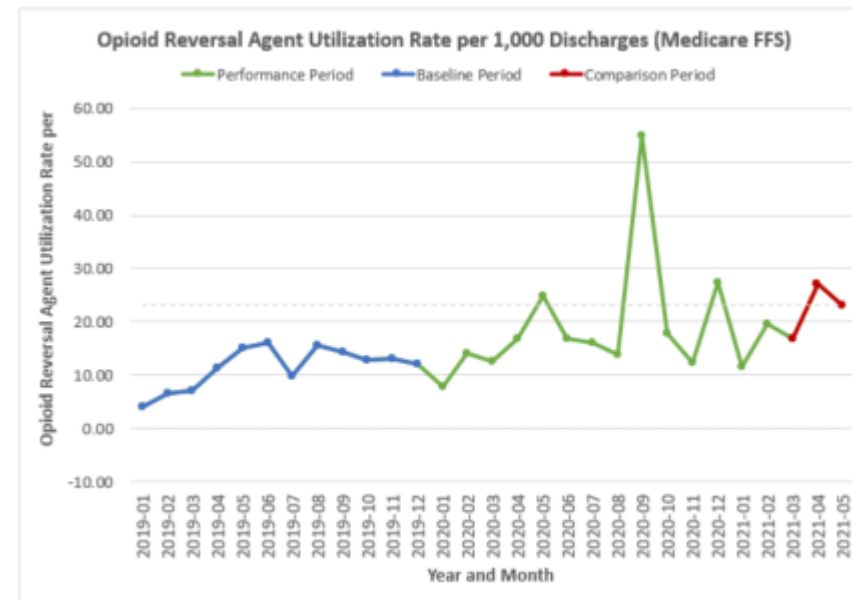
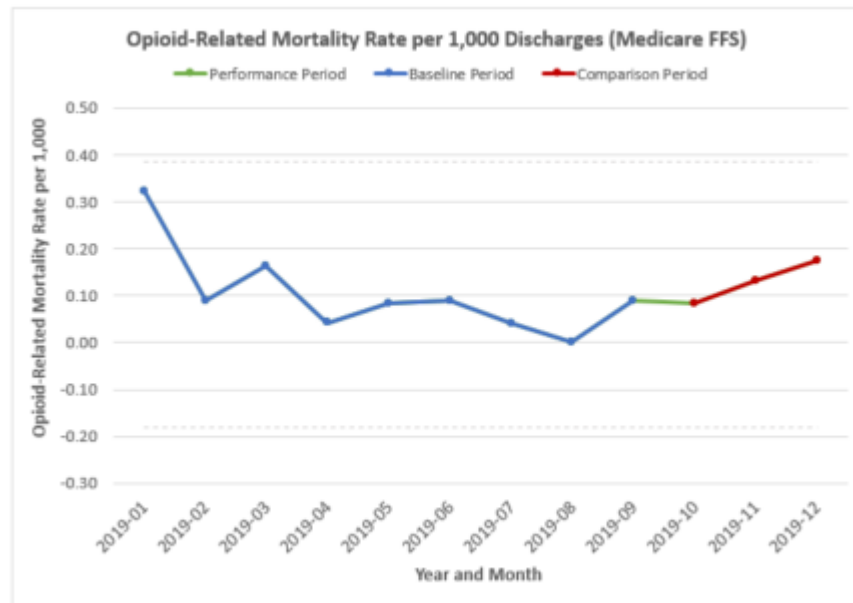


The following checklist assesses a hospital's compliance with best practice strategies to reduce opioid-related adverse drug events.

EVIDENCE BASED BEST PRACTICE FOR OPIOIDS	IMPLEMENTATION STATUS			ACTION PLAN/NEXT STEPS List specific activities your team will seek to accomplish to fully implement each practice recommendation.
	FULLY	PARTIALLY	NONE	
<b>HOSPITAL LEADERSHIP AND OVERSIGHT</b>				
Hospital has a leader or leadership team that is responsible for safe opioid prescribing and development and monitoring of performance improvement activities related to opioids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Hospital routinely tracks and trends opioid usage and ADE data and information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Hospital routinely provides departments and physicians with opioid usage data and information such as: <ul style="list-style-type: none"> <li>• referrals to medication-assisted treatment;</li> <li>• percent of patients discharged on opioids with Narcan prescriptions;</li> </ul>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

# Historic Medicare-only data

- Begins to show the trend for the senior community



# Subject matter expert

## Matthew Jared, MD

Matthew Jared, MD is the Associate Chief Hospitalist at SSM St. Anthony Hospital in Oklahoma City, OK. He is currently working with SHM Hospital Quality and Safety Committee, SSM Opioid Stewardship team and SHM Vaccine Hesitancy Mentorship Program.

He has been working to improve opioid safety and stewardship through mentorship programs and continuing medical education since 2015. Dr. Jared studied medicine at the University of Oklahoma Health Sciences Center and graduated in 2009. He completed residency at St. Anthony Hospital in Family Medicine in 2012.

He has helped several hospital quality improvement projects, including Opioid Stewardship, Acute Stroke, Hospital Transitions of Care, Graduate Medical Education and Sepsis. His goal is to foster a better understanding of safe and effective opportunities for pain relief in our hospitals.



# Objectives

1. Understand best practices and guidelines for prescribing opioids.
2. Explore strategies for dosing, tapering, dual ordering and avoiding co-prescribing and exceptions to opioid “rules.”
3. Develop care team support workflows to reduce opioid-related errors.
4. Define the pharmacist’s roles in the care team and in opioid management.
5. Develop best practices for communications with the care team and patient.

# Quick quiz



Which of the following are risk factors for prolonged use of opioids after surgery?

- Younger age
- Lower economic status
- Heart failure
- Open thoracic surgery
- SSRI use

An estimated 3% of surgeries are associated with use greater than 90 days.



# Quick quiz

- When prescribing opioids in the hospital, offering multiple options for the same pain rating is best practice?

- True
- False

Dual ordering is not recommended and can lead to increased adverse event rates.

# Opioids: Pharmacology & Pathophysiology

# Opioid class



## Opioid medications are not just one size fits all

- Mu, Delta, Kappa receptors
  - Different medications affect different receptors
- Systemic effect
  - Brain, spinal cord, peripheral nerves and end organ agonist effect
- Agonist and antagonist effect on these receptors can change response
  - Full agonist — strong analgesic effect
    - Morphine, hydromorphone, fentanyl, oxycodone
  - Partial agonist — moderate analgesic effect, less adverse effects
    - Buprenorphine, nalbuphine
  - Antagonist
    - Naloxone and naltrexone
  - Combined agonist/antagonist — meant to reduce diversion while still producing analgesia
    - Buprenorphine/naloxone

# High-risk medical conditions



- Obesity
- Pulmonary disease
- Cardiac disease
- Renal disease
- Chronic pain
- Hepatic disease
- Substance abuse
- Major mental illnesses
- Elderly

# Safe Prescribing Guidelines

## Opioid Naïve and Opioid Tolerant

# Functional goals



- Establish functional goals from the patient for pain control
  - Complete ADLs independently
  - Tolerate physical therapy
  - Tolerate dressing changes/wound care
  - Transition to outpatient treatment modalities
- Limit opioid use based on functional goals, not just pain scores

# Hospital uncontrolled pain: Opioid naïve



- General considerations:
  - Opioid should not be the first option for pain control
  - Oral route preferred – slower, safer onset
  - Clear orders
    - Clear functional goal
    - Range orders not recommended
- Use a standard stepwise approach
  - Multimodal therapy likely very effective in this population
  - Pay attention to dosing intervals
    - Reassess after dose for pain and sedation level
      - Pain Score/CPOT
      - POSS/RASS
    - Increase only if tolerated well without signs of stacking effect when pain is uncontrolled

# Hospital uncontrolled pain: Opioid naïve



- Give education about opioids to patients and families prior to first dose
  - Handout, audio or video link, link to web resources
    - May benefit from making in-house tip sheet to set expectations
- Limit exposure by weaning off more quickly than opioid tolerant patient
  - Consider one-time doses when appropriate for short relief
- Evidence-based prescriptions at discharge to limit unused doses at home
  - Counsel on pill take-back programs in the area
- Use PCA with caution
  - Recommend not setting a basal rate



# Opioid treatment progression



## Stepwise approach to uncontrolled acute pain:

**PO**



- > Acetaminophen 1g PO q6 hrs scheduled, max 4g/day
  - Reduce 50% if patient is >70 yrs



- > Ibuprofen 400-800 mg PO q8 hrs scheduled
  - Alternative: Ketorolac 15mg IV q6hrs X 24 hrs unless contraindicated
  - Reduce/Omit: if patient is >70 yrs, renal



- insufficiency, coagulopathy, bleeding
- > Gabapentin 300-600 mg PO q 6 hrs



- > Oxycodone 5-10 mg PO q 3hrs PRN
- > Alternative: Hydromorphone (Dilaudid) PO 2-4 mg q 3hrs PRN



- > Oxycodone 10-20mg q 3hrs PRN
- > Alternative: Hydromorphone (Dilaudid) 4-8 mg PO q 3hrs PRN



- > Consider Pain Service consult

# Hospital uncontrolled pain: Opioid tolerant



- Confirm home dosages
  - Outpatient pharmacy records
  - Opioid prescriber(s)
  - Family members
  - State prescriptions drug monitoring program database
- Continue home dosages if not at risk and can take PO
- Continue home long-acting oral opioids
- Be careful with fentanyl patches — do skin exam
- If switching opioids or switching to IV, start at 30-50% equianalgesic dose
- If new acute pain, they may require high doses (MME/dose)

# Safe Prescribing Guidelines

## Opioid Selection and Dosing

# When to avoid opioids



- Chronic pain present before hospitalization
- Some specific conditions:
  - Pelvic pain
  - Fibromyalgia
  - Headaches, migraine
  - Low back pain
  - Temporomandibular disease
  - Irritable bowel syndrome
  - Ill-defined pain syndromes
- Consider avoiding when potential present for secondary gain or diversion

# Opioid selection



- Understanding the pharmacology of each medication, metabolism and interactions with chronic diseases necessary to pick individual medication
- Most utilized medications
  - Parenteral: Morphine and Hydromorphone
  - Oral: Oxycodone, hydrocodone, morphine immediate-release
  - Transcutaneous: Fentanyl patch
- Consider tramadol in select populations
  - Avoid in patients with high risk for seizures
- IV fentanyl may be used in critical care or surgical units
  - Requires close monitoring and more frequent reassessment
  - Induction or sedation for ventilated patients
- Combination hydrocodone products benefit in doubt
  - Acetaminophen with NSAID more effective for severe extremity pain
  - More likely to lead to abuse

# Non-preferred agents: Hospital/acute pain



- Codeine — Risk for toxicity
- Meperidine — Risk for Seizures, accumulation in renal insufficiency
- Long-acting opioids — Not advised for initiation of therapy in hospital
- Fentanyl patch — Not advised for acute pain

# Dosing considerations



- Lowest effective dose, fewest number of administrations for all pain and frequent reassessment with adjustment
  - Nurse and provider communication key to success
- MME daily maximum
  - Goal is between 50-90 MME per day dosing (EQIC goal is 90 MME)
  - Home medications may be higher than goal range
  - Range dosing prevents consistent measurement
- Acute on chronic pain
  - Multimodal therapy is **key to success**
  - If acute pain is present or expected:
    - Higher doses than usual for tolerant patients expected
    - Consider long-acting pain control only if acute pain relief not achieved
    - Limit use of PCA in patients with opioid tolerance
      - Only most highly motivated patients with severe pain and poor oral options

# Schedules and dose ranging



- Fixed doses
  - Schedule individualized to the patient
    - Chronic diseases, pharmacology of the medication selected
  - Even at low doses, dose stacking can happen
  - Overlap schedule with non-opioids to assure multimodal approach
- Range dosing
  - Generally, not recommended
  - If ranges are used, start with the lowest dose in the range
  - Judge response to sedation and pain prior to using higher range dose
  - Frequently associated with difficulty weaning, inconsistent daily MME measurement
- Avoid using opioids alone for pain control
- Opioid tolerant patients may require more frequently scheduled doses



# Dual ordering



- Use of two opioid medications for the same indication
  - Commonly IV and oral doses for same pain level
  - Sometimes used instead of range orders
- Strategies to avoid dual ordering
  - Using functional goals for pain treatment
  - Breakthrough doses may be ordered
  - One-time doses for special indications (i.e. MRI, wound care, PT)
  - EHR decision support

# Benzodiazepines and sedatives



- Combination of sedatives with opioids creates high risk for fallouts with the safety processes
  - Alarm fatigue for nurses
  - High-risk patients for respiratory depression
- Combinations can cause additive sedation and respiratory depression
  - Type II and III respiratory failure
- Awareness of the sedating potential of different medications and classes
- Frequent monitoring of sedation level is necessary in these patients
  - POSS or RASS

# Opioid Morphine Milligram Equivalents

†Tapentadol is a mu receptor agonist and norepinephrine reuptake inhibitor. MMEs are based on degree of mu-receptor agonist activity, but it is unknown if this drug is associated with overdose in the same dose-dependent manner as observed with medications that are solely mu receptor agonists.

Opioid	Conversion Factor
Codeine	0.15
Fentanyl transdermal (in mcg/hr)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone: 1-20 mg/day	4
Methadone: 21-40 mg/day	8
Methadone: 41-60 mg/day	10
Methadone: ≥61-80 mg/day	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3
Tapentadol <sup>†</sup>	0.4

# Opioid Conversions

**Table 11: Equianalgesic Table (based on single immediate-release dosage forms)**

Drug	Parenteral	PO	Parenteral:PO Ratio	Duration of Action (hr)
Morphine	10	30	1:3	3 to 4
Hydromorphone	1.5	7.5	1:5	3 to 4
Oxymorphone	1	10	1:10	3 to 4
Oxycodone	n/a	20 to 30	n/a	3 to 4
Codeine	130	200 n/a	1:1.5	3 to 4
Hydrocodone	n/a	30	n/a	3 to 4
Meperidine	75	300**	1:4	2 to 3
Fentanyl	0.1	n/a	n/a	1 to 3

Duration of action based on use of short-acting formulations.

n/a = equianalgesic data unavailable. Codeine doses should not exceed 1.5mg/kg because of an increased incidence of side effects with higher doses.

\*\*Avoid multiple dosing with meperidine (no more than 48 hrs or at doses greater than 600mg/24hrs). Accumulation of toxic metabolite normeperidine (half-life 12-16 hrs) can lead to CNS excitability and convulsions. Contraindicated in patients receiving MAO inhibitors. Oral meperidine is not recommended due to very poor oral bioavailability.

*Adapted from Gordon DB, Stevenson KK, Grifflie J, et al. Opioid equianalgesic calculation. J Palliat Med. 1999;2(2):209-2018*

# Safe Dispensing and Administration

# Administration best practices



- Confirm patient, dose and indication
  - Avoid giving IV and oral doses for same indication
  - Confirm patient sedation level (POSS, RASS, Ramsay)
  - If range dose ordered, start with lowest dose in range to gauge effect
- Reassess in timely manner
  - IV route evaluated within 30-45mins
  - Oral route within 1 hour
  - Repeat assessment of pain and sedation at reassessment
  - Communicate inappropriate levels of sedation immediately
- Recognize indicators for opioid use disorder
  - Setting alarms, frequent requests for additional doses, cheeking or chewing pill
  - Requesting coadministration of sedative or Benadryl
  - Family reporting pain score rather than patient
  - New efforts often show up, remain diligent

# Further considerations for dispensing policy



- Patient home doses and medications reconciliation
  - Assure this happens in a timely manner
  - Look for inconsistencies from the pharmacy and patient.
  - Remove any transdermal patches (fentanyl, buprenorphine)
- Pharmacy confirms dose and interactions
  - Pharmacy to confirm doses, potential medication interactions, assess floor stock for inconsistencies
  - Avoid dual ordering from providers
  - Develop clear communication from pharmacy to provider for any high-risk orders
- Nursing protocol for wasting and fidelity of floor stock
  - Buddy system to confirm excess
  - Timely removal of patient from floor medication station/locker
  - Regular review to prevent unnecessary exposure to opportunity for diversion

# Using alternate routes of administration

- Transcutaneous
  - Fentanyl patch
    - Has risk of overdose because of lingering effect, dose stacking, variation in absorption
    - May be used safely in patient in the hospital with clear policy and regular assessments
    - Reserve for severe uncontrolled pain, particularly in patient NPO
- Intrathecal pumps
  - Evaluate patients at admission for any pain control delivery systems
  - Recommend stopping at admission
  - May affect response to medications and increase adverse events
- Oral liquid
  - Utilized primarily in kids and palliative care
  - Better than IV preparations at end of life for comfort and and quality of life
  - Minimize use as cough suppressant if co-prescribed another opioid for pain



# PCA safety considerations

- Careful patient selection
- High-risk screening
- Not for patients with cognitive impairment
- Administration policies and procedures for nursing
- Nursing education
- Monitoring policies and protocols
- Consider pharmacy and/or anesthesia oversight
- Require prescribing via protocol
- Conversion to PO when can take PO
- Basal rate — not advised for opioid naïve patients
- Family education

# Special Situations

# Exceptions to the rule(s)



- Cancer and end of life care
  - Comfort and quality of life is more important in this population
  - May have higher doses and more frequent use of long-acting medications in this population
    - Need to have clear plan for cancer treatments and adjustments for post-chemo toxicity
    - Discuss risk and benefits with patient
    - Focus on functional goals and quality of life
- Hospice
  - Oral routes preferred, avoid IV dosing
  - Consider more frequent lower dose administrations
- Comfort care (Gen Inpatient Hospice)
  - May be used for air hunger as well as pain
  - Define goals of care with patient and family

# Weaning Opioid Therapy

# Consider tapering if...

- Patient requests to cut back
- No clinically meaningful response to opioid treatment
- Using doses greater than 50-90 MME daily
- Showing signs of opioid use disorder
  - DSM V criteria
- Demonstrates Pasero-Opioid Sedation Scale level 3 or 4
- Experiences overdose or adverse events

# Opioid weaning



- Multiple considerations:
  - When
    - Stages of Change Model (Determination/Action)
  - Rate of taper
    - Rates >10% associated with relapse/abuse
  - Risks
    - High fallout rate
  - Flexibility
    - Making improvement is the most important thing

# Opioid weaning— Tolerant and addicted patient



- Weaning may be difficult to achieve, medication assisted therapy may be safer and quicker
- Mental health support is advised
- Avoid arbitrary goals or treatment doses
  - Hard MME goals, fixed schedules
- Avoid dismissing as much as possible
  - These patients have a pathophysiology that requires treatment
  - Consider chronic disease model of evaluation, follow up and reassessment of treatment

# Methadone



- Methadone is not a first line pain medication
- Doses of methadone should be confirmed and continued
  - Exception for trauma and severe acute pain where PCA or parenteral pain control is relied upon
- Methadone is often prescribed in very high doses
  - Sedation should be monitored
  - Reducing the dose unnecessarily may cause withdraw
- Patients admitted to the hospital on Methadone can be safely treated for most chronic or acute conditions while continuing methadone
  - If admitted with opioid overdose or opioid use disorder, consulting pain management specialist is recommended before using methadone
  - Conversion is 2:1 for low daily doses (<30MME), 4:1 for high doses (30-99MME)
  - Requires specialized waiver to prescribe and clinic dispensation is typical



# Buprenorphine



- Partial agonist to mu opioids
  - High affinity and low potency
  - May induce withdraw if patient is taking high-dose opioids prior to starting buprenorphine
- Multiple dosing forms make it easy to use
  - SL, oral, transcutaneous patch
  - Be sure to confirm dose type and remove patch if present
- Continuation in the hospital is possible
  - May require higher doses of full agonists to control acute pain or post-operative pain
  - If presenting for non-pain admission diagnosis, it is a very safe option and likely to be useful
- Combination product with naloxone not recommended in the hospital
- X-waiver has been released, but physicians still must file a notice of intent in order to prescribe
- Limited utility in starting it for acute pain in the hospital

# Care Team and Quality Improvement

# System/team-based approach



- The problem: Making the subjective objective
- Safety is the first goal
  - Reassess after adverse events
  - Develop recurring education for staff
- Team-based approach to assessment
  - Nurses, techs, physicians, pharmacists, IT
  - Equal responsibility for patient safety
  - Bidirectional communication
- Prevention of adverse events
  - Know the local complication rates
  - Prevention is better than forgiveness
- Clear indicators of opioid use for rapid response teams

# Care team responsibilities



- Assess, monitor and treat pain
  - Identify type, location and severity of pain
  - Treat pain based on quality and severity
  - Monitor response
- Identify potential patient risks
  - History of high-risk conditions
  - History of previous opioid use
  - Allergies
- Partner with others to improve patient safety environment with reference to opioid prescribing and dispensing in their hospital or health system
  - Develop systems-based practices
  - QI with multidisciplinary team

# Know your role



- Champion
  - Know the local situation and common barriers
  - Encourage group participation
  - Set clear goals for the group
  - Set schedule and measures for PDSA cycles
- Providers
  - Give clear feedback to administration about team function
  - Set clear goals with patient
  - Make sure orders are clear and goal directed
  - Consider chronic conditions and risk factors for adverse events
  - Work with team to create effective EHR-based interventions

# Know your role



- Pharmacists
  - Develop policies for dosing and dispensing using clear evidence-based goals
  - Verify dosing, medication interactions and maintain floor stock
  - Consider equianalgesic dosing, suggest dose adjustments based on risk
  - Verify outside doses of chronic opioids (PMP verification)
  - May be key manager of the project data
- Nurses
  - Develop clear implementation plans in coordination with the team
  - Data analysis of program successes
  - Communicate patient response and concerns
  - Review orders, communicate opportunities, represent frontline staff
  - Limit exposure of other nurses to high-risk situations for opioid diversion
- Information Technology
  - Operationalize EHR-related decision support, order set and risk alerts

# Clear communication between care team



- TeamSTEPPS
- Always Safe Culture
- Develop scripting for nurses around pain assessment and medication administration
  - Share functional goals
  - Weaning protocols
- Involve pharmacy in screening dose conversion, PMP review, medication interactions
- Share the responsibility so burden doesn't fall on the provider alone
  - Bidirectional Communication
  - Just-in-time Education

# Clear communication between care team



- Serial Sedation Assessments
  - Communicate at-risk scores
  - Reinforce standardized teach-back learning for staff
- Pasero-Opioid Sedation Score
  - Clinical implications
  - Use outside ICU
  - Requires training of staff on subtle differences
- Richmond Agitation Sedation Scale
  - Better suited for ICU than POSS
  - Use in combination with other objective measures



# Clear communication: Team to patient



- Key elements to discuss when prescribing opioids at discharge
  - Name of the medication, brand and generic
  - Route, dose, schedule, tapering, duration
  - Principle risks
  - Side effects and what the patient needs to do to lessen them
- Empower a multidisciplinary approach to help patients make the transition at discharge
  - Physicians
  - Pharmacy
  - Nursing

# Inpatient to outpatient communication



- Opioids are High-Risk Medication
- PCP needs to know
  - Indication
  - Medication, dose, route, duration
  - Tapering schedule
  - Your concerns for risks of adverse events
  - Need for refills
  - Need for specialty referral
- PMP evaluation prior to prescribing
- Pharmacist follow-up evaluation

# Hospital quality improvement

- **Develop appropriate teams**

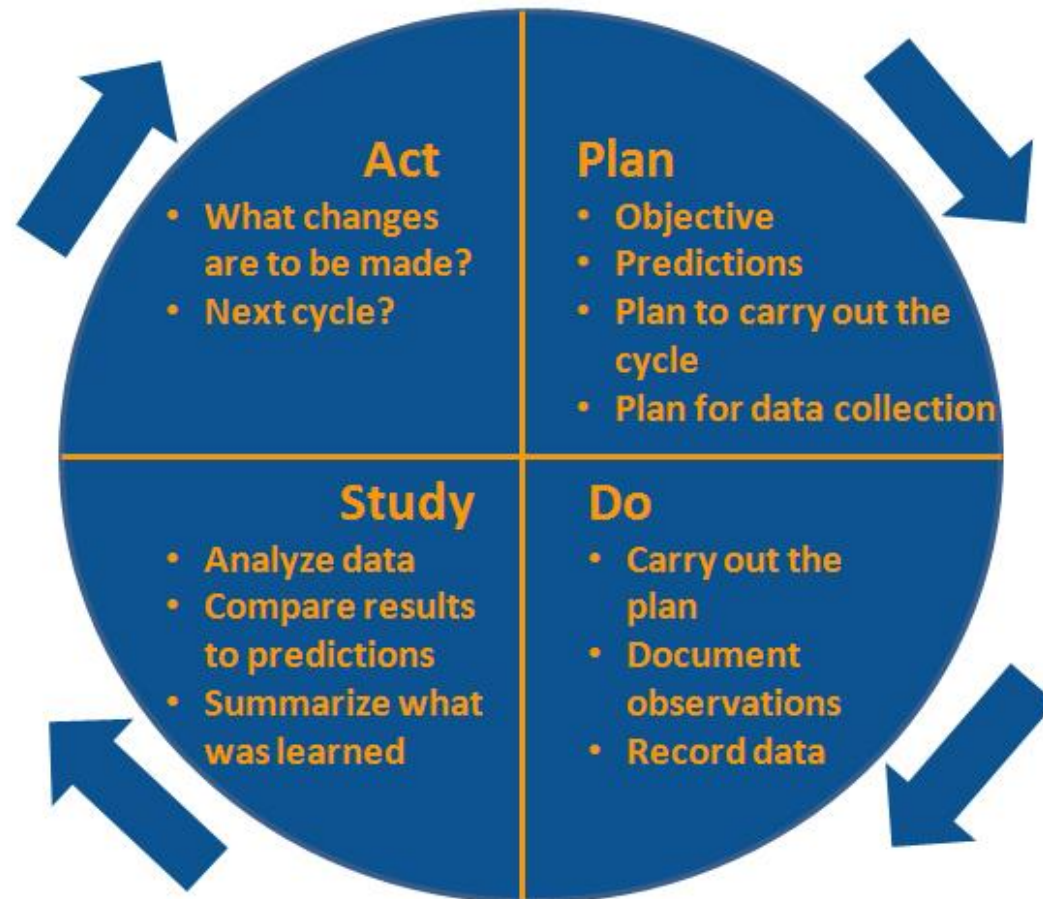
- Champion
- Key stakeholders
- Administrator
- Frontline provider/nurse
- Pharmacist
- Pain management specialist/anesthesiology
- IT/EHR representative
- Safety officer/quality improvement manager/statistician

# Hospital quality improvement



- Requirements:
  - Organizational support
  - Sustained leadership
  - Training and support
  - Measurement and data collection systems
  - Aligned incentives
  - Cultural receptivity to change
- Successful QI program will focus on:
  - QI work as systems and processes
  - Focus on patients
  - Focus on being part of the team
  - Focus on use of the data

# QI process of improvement (PDSA)



# Questions?

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# Next steps



- Work on action plan for implementation
  - Consider completing a high-level flow chart of the process
  - Start with harvesting the top areas for improvement from your gap analysis
  - Review the best practices with your PM and opioid team
  - Map out the who, when, what of the plan
- Reach out to your PM for additional support
- Next scheduled Webinar: October 26, 2021, 1-2 p.m.

# Thank you.

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