

# A Novel Approach to Educating Patients About Thoughtful Pain Medication Use

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## Goals & Objectives

1. Review the scope of current research to reduce unnecessary pain medication use, its gaps and opportunities.
2. Describe a novel strategy for patient education as a means of minimizing the current problem.
3. Identify opportunities for application in a patient care setting including incorporation of pharmacy learners and technicians.

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## Disclosures

1. I have received payment from the Illinois Human Performance Project for my expert opinion as a panelist.
2. I have received stipend compensation as a continuing education provider for pharmacists and pharmacy technicians
3. I have lent my clinical expertise to legislative lobbying at the federal level resulting in the passage of federal opioid legislation attached to the December 2022 Omnibus Spending Bill and to efforts to maintain access to medications through Medicare Part D.

**All relevant conflicts of interest have been resolved.**

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## The Scope of America's Opioid Epidemic

- The death toll from overdoses is staggering
  - 2022: More than 82,000 opioid deaths
  - Synthetic opioids, led by fentanyl, accounted for nearly 68,000 (82.3%) opioid deaths
- Over ten years the number of total Rx's has fallen
  - 2010: More than 251,000,000 prescriptions written
  - 2020: More than 142,000,000 prescriptions written
  - More than 258million adults in the US in 2020
- **Bottom line: there's a significant disconnect!**

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## Phases of Despair: The American Opioid Crisis

### Three Waves of Opioid Overdose Deaths

Source: CDC.gov, Understanding the Opioid Overdose Epidemic, 2023

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## Presentation of the Crisis to the Public

**'A staggering increase': Yearly overdose deaths top 100,000 for first time**

The largest increases were seen in Vermont, West Virginia and Kentucky.

Source: NBC News, nbcnews.com, originally published, Nov. 2021

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## KNOWLEDGE CHECK #1

Understanding the climate of current research

Which of following gaps in current opioid research does **NOT** justify a new approach to helping Americans manage acute pain?


- A. Despite focusing on dangers of misuse, deaths continue to rise
- B. Studies demonstrate patients' favorable response to education
- C. Demonstrated benefits of misuse education are often short-lived
- D. Data does not suggest surgery is a risk for opioid misuse



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## Let's Explore a Different Direction

Time to focus on education about thoughtful use




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## How Did I Get To This Concept?

I Listened to One Patient Express the fear so many others are scared to voice!

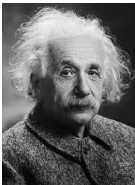
- A family friend had arthroscopic shoulder surgery at Northwestern Memorial Hospital
- She was scared and nervous and wanted to ask questions
- She voiced her greatest fear...
  - "Am I going to get addicted to the pain medications?"
- It hit me!
  - Patients don't know how to take their pain meds
  - Everything around them tells them to be frightened
  - Let's put it right out in the open... it's ok to talk about it!
  - Let's decode it together



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## Time to Take a Different Path

We Need a New Philosophical Approach




*"No problem can be solved by the same consciousness that created it. We need to see the world anew."*

- Albert Einstein




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## ABOUT THE INNOVATOR



- Surgical Pharmacy Practice for 16 years
- Orthopaedic Surgery Faculty
- Business entrepreneur
- Doctor of Pharmacy (PharmD)
- Masters in Broadcast Journalism
- Former TV and Radio Professional
- Undergraduate education in Chemistry



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### Let's Explore a Patient Case

It's about helping people accomplish an end goal

- A.A. is a 22 year-old male with no known allergies
- Occupation:** Professional baseball player at the minor league level
- PHM:** No significant history for chronic diseases, history of soft tissue injuries, history of upper extremity fracture
- Complaining of acute pain and inflammation of the right elbow with imaging positive for a partial tear of the ulnar collateral ligament (UCL)
- Currently managed with PRN acetaminophen and diclofenac 50mg orally twice daily
- Presents to the surgery center for arthroscopic UCL reconstruction (Tommy John Surgery)

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### Let's Explore a Patient Case

It's about helping people accomplish an end goal

- Surgery was completed in 130 minutes under general anesthesia without the assistance of a peripheral nerve block
- Intra-operative and post-operative recovery were without incident
- Discharged on the same day to the care of the athletic training staff
- Medications on discharge:
  - Hydrocodone/acetaminophen 5-325 1 tab orally every 4-6 hours prn pain
  - Acetaminophen 1,000mg orally every 6 hours as needed for pain
  - Diclofenac 50mg twice daily with meals for 10 days

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### Navigating Acute Post-Operative Pain

Surgery is a significant driver of acute pain

- Helpful to think about it as three (3) phases
  - Immediate post-operative pain: PACU
    - Periodic nursing assessment with orders PRN from anesthesia & surgery
    - Durational activity of a pre-operative or post-operative block
  - Early phase recovery: Same day D/C & POD 1
    - Guidance by nursing
    - May require one or more doses of opioid for pain management
  - Later phase recovery: **POD 2 and beyond: Let's focus here!**
    - Focus of decision making & teaching
    - Provide guidance to recognize the cause of pain, especially swelling & inflammation
- Physical modalities are a constant adjunct

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### Navigating Acute Post-Operative Pain

Surgery is a significant driver of acute pain

- In Ambulatory Orthopaedic Surgery, we're taking a unique approach
  - Teach patients to assess their post-op functionality to drive medication choice
  - Help patients identify swelling and inflammation to promote NSAID use
  - Underscore the utility of acetaminophen
  - Educate patients on resources for safe opioid disposal

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### Navigating Acute Post-Operative Pain

Surgery is a significant driver of acute pain

Think about the flow of information around & through the patient!

- Dynamic interaction
- Fluid exchange between provider & patient
- Inpatient: Expertise immediately available
- Outpatient: reliance on recall of **education**

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    graph TD
        Pharmacy --- Inpatient
        Pharmacy --- Outpatient
        Pharmacy --- Prescriber
        Pharmacy --- Nursing
        Inpatient --- Prescriber
        Inpatient --- Nursing
        Prescriber --- Nursing
    
```

Triangle of Expertise Model

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### Navigating Acute Post-Operative Pain


Surgery is a significant driver of acute pain

Drive home the importance of functionality: it's a pragmatic outcome! We give patients 7 questions to ask every time they self-assess pain:<sup>10</sup>

1. Able to get out of bed
2. Able to move around within the limitations of surgery
3. Able to eat
4. Able to use the restroom
5. Able to get through a day satisfactorily
6. Able to sleep
7. Able to have reasonable interactions with other people

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## Navigating Acute Post-Operative Pain

**Surgery is a significant driver of acute pain**


All activities a patient needs to accomplish to successfully recover... **even if the patient is feeling pain!**

- Answering "yes" to all 7 measures: satisfactory function in spite of pain – opioid medication is **NOT** the best option
  - Make a decision about a non-opioid option
- Answering "no" to any of the measures: pain is compromising function – an opioid medication is the right option to control pain to allow functionality (1 tablet)
- Re-assess functionality every 4-6 hours
  - 7 "yes's:" no opioid
  - Same number of "no's:" 1 tablet as previously taken
  - Increase in "no's:" take 2 tablets

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## Navigating Acute Post-Operative Pain

**Surgery is a significant driver of acute pain**


For satisfactory functionality (7 "yes" answers): help patients find the best non-opioid medication option

- Assess the quality of the pain: What does it feel like?
  - Is there pressure & stiffness?
  - If not, is the pain aggravating?
- If accompanied by pressure & stiffness: swelling from inflammation – an **NSAID** is the **ideal option** (screen for contraindications)
  - Think about medication options and the dosing parameters
- If no pressure & stiffness, but it's aggravating, acetaminophen is the best option
  - Consider dosing options including dose & frequency

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## Navigating Acute Post-Operative Pain

**Surgery is a significant driver of acute pain**


**NSAIDs** for functional pain **with** pressure & stiffness

- Attacks a root cause of acute (especially post-operative) pain
  - Unchecked inflammation progresses to baro-nociceptors causing pain
- Some prescribers use scheduled NSAIDs
  - Underscore the importance of completing the prescription
  - Common choices: celecoxib, diclofenac & naproxen
  - Discuss a plan for converting to PRN use following Rx completion
- Many prescribers favor PRN NSAID use
  - Consider dosing options including dose & frequency
  - Ibuprofen has dose & frequency flexibility 400-800mg q 6-8hr<sup>11</sup>
  - Naproxen (Aleve®) has rigid dosing: 440mg (2 tab) q12hr<sup>12</sup>

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## Navigating Acute Post-Operative Pain

**Surgery is a significant driver of acute pain**


**Acetaminophen** for functional pain that's aggravating **without** pressure & stiffness

- Best to tell patients it's a great option for taking the edge off pain that does not impair functionality
- Discuss dosing options<sup>13</sup>
  - For most healthy adults: 1,000mg q6h prn
  - Older, smaller patients: consider 650mg q4-6h
  - For short-term acute pain, 1,000mg may be more effective
- Some prescribers may use a short course of scheduled acetaminophen
  - Common approach is 1,000mg q8hr ATC
  - Remind patients NSAIDs become their best PRN option

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## Navigating Acute Post-Operative Pain

**Surgery is a significant driver of acute pain**


Teach patients about the importance of discarding unused doses of opioid medications & discuss available options

- Diversion is a significant driver of opioid misuse, abuse & overdose death
- Unused doses lingering in the home are significant contributors to diversion
- Newer return options make discarding unused doses much easier
  - ✓ DEA regulated kiosks often available in pharmacies, health system buildings, municipal buildings & public safety facilities (police/fire)
  - ✓ Semi-annual DEA National Prescription Drug Take Back Days (Oct. & April)
- Internet search tools are available to easily locate kiosks
  - ✓ Example: [safe.pharmacy/drug-disposal](#) (searchable by ZIP Code)

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## Back to Our Patient Case

**A.A.: 22 yo Professional Baseball Player s/p UCL reconstruction**

- We underscored functionality even with pain
- We identified the appropriate place for acetaminophen
- We unpacked swelling and inflammation
  - Underscored the need to use scheduled diclofenac (**NSAID**)
  - Talked about a plan for using prn NSAIDs during the extended recovery
  - Talked about the role of ketorolac (Toradol®) in post-operative recovery
- We made a plan for getting rid of opioids when they weren't needed any longer

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## KNOWLEDGE CHECK #2

Describing a novel approach to pain management through education

Which of following concepts is a foundation of a novel approach to helping Americans manage acute surgical pain?

- A. Acetaminophen plays only a minor role in therapy
- B. Opioid use is most effective when pain limits functionality
- C. Non-steroidal anti-inflammatory medications should be avoided when managing pain
- D. Patients' individual needs in recovery should not play a role in decision making




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## Assessing the effectiveness of this work

Early analysis: quality study with a pharmacy resident, May 2021

- Single center, retrospective, observational cohort study
  - 18 yo or older with a discharge Rx for an opioid pain medication
  - Exclusions: hip, knee, shoulder arthroplasties, spine, upper extremity
- Comparison of matched sports medicine arthroscopy procedures
  - Randomly selected 179 total cases in both cohorts (from 611 eligible cases)
  - Cohort 1 - 7/1/2019-9/30/2019: 85 patients (did not receive pain teaching)
  - Cohort 2 - 7/1/2020-9/30/2020: 94 patients (received pain teaching)
- **Primary outcome:** percentage of patients requesting an opioid Rx refill
- **Secondary outcome:** difference in Likelihood to Recommend (LTR) scores




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## Results

Baseline Characteristics

	Overall (N=179)	Opioid Teaching Session (N=94)	No Opioid Teaching Session (N=85)	P-value
Male – N (%)	105 (58.7%)	53 (56.4%)	52 (61.2%)	P=0.52
Female – N (%)	74 (41.3%)	41 (43.6%)	33 (38.8%)	P=0.52
Mean Age (years)	44.7	46.3	43.1	P=0.15
Mean Height (centimeters)	172.9	172.8	172.9	P=0.97
Mean Weight (kilograms)	85.5	86.0	85.0	P=0.74
Type of Opioid				
- Hydrocodone/APAP	165 (92.2%)	88 (93.6%)	77 (90.6%)	
- Oxycodone +/- APAP	10 (5.6%)	3 (3.2%)	7 (8.2%)	
- Morphine	7 (3.9%)	7 (7.4%)	0 (0.0%)	
- Tramadol	15 (8.4%)	5 (5.3%)	10 (11.8%)	P=0.59
- Tylenol #3	1 (0.6%)	0 (0.0%)	1 (1.2%)	
- Hydromorphone	1 (0.6%)	1 (1.1%)	0 (0.0%)	
Average - (Median) Quantity of opioid tablets prescribed	28.5 (30)	25 (30)	32.5 (30)	P=0.09




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## Results

Primary and Secondary Outcomes

	Overall (N=179)	Opioid Teaching Session (N=94)	No Opioid Teaching Session (N=85)	P-value
Number (%) of Patients with an Opioid Refill Request	26 (14.5%)	12 (12.8%)	14 (16.5%)	P=0.48
Number (%) of Patients with an Opioid Refill Request within 30 days	24 (13.4%)	11 (11.7%)	13 (15.3%)	P=0.48
Likelihood to Recommend Scores %	92.1%	91.4%	92.7%	P=0.39




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## Opportunities to Impact Patient Care

Leveraging the skills of Student Learners and Technicians

- Employ the principles of Medication Therapy Management (MTM)
  - Focus on teaching concepts in place of traditional show & tell counseling
  - Set up a system of preparation to provide patient-centered insights
- Determine your approach to enhancing the pain management experience
  - Using the program to enhance the patient care experience
  - Leveraging the program as a revenue-generating opportunity




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## Opportunities to Impact Patient Care

Leveraging the skills of Student Learners and Technicians

- Enhancing the patient care experience
  - Use the pharmacist as a clinical instructor teaching student learners to provide patient teaching
  - Opportunities for students to work up patients focusing on optimizing pain management
  - Technicians can help provide patient background to the pharmacist/student pharmacist team



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## Opportunities to Impact Patient Care

Leveraging the skills of Student Learners and Technicians

- Using the program as an opportunity for revenue generating patient care
  - Investigate opportunities for billing for services
    - MTM-specific CPT codes vs billing incident to physician
    - Remember billing for professional services requires patient care by a licensed pharmacist
- Opportunities still exist to leverage skills of student learners and pharmacy technicians
  - Technicians can provide research and background information about the patients' medication histories
  - Student pharmacists can analyze patients' clinical circumstances to identify critical opportunities

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## KNOWLEDGE CHECK #3

Opportunities to include student learners and technicians in patient care

Which of following statements **DOES NOT** describe an opportunity for leveraging the skills of student pharmacists and technicians?

- Student pharmacists can provide reimbursable care
- Pharmacy technicians can help provide patient background
- Student pharmacists can provide analysis of patient cases prior to providing reimbursable care
- Student pharmacists can lead the patient care team in programs that do not seek reimbursement

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## Opportunities to Impact Patient Care

The implications of this patient care program

- A reduction in the refill request rate is encouraging
  - Lack of statistical significance means there's scholarly work to do
  - LTR is multifactorial so no significant reduction is acceptable
  - The 3.5% reduction in refill requests may have clinical significance
    - Remember 2020 saw 142M Rx's (2.84B pills): this could affect a drop of 4.97M Rx's
    - If the average Rx quantity is 20 pills, this is a reduction of nearly 100M pills!
- Remember, roughly 6.7% of surgical patients develop a misuse issue
  - National Center for Health Statistics estimates 40M surgeries nationwide in 2022
  - That means 2.68M patients are at risk for an opioid misuse issue
  - For NM Orthopaedics: about 7,200 surgeries FY23 → more than 480 patients at risk for prolonged opioid use

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## Opportunities to Impact Patient Care

The implications of this patient care program

- The number of pills ingested is the key
  - A dose administration leads to a surge of dopamine
  - Dopamine drives the reward seeking behavior
- Pain relief is dose dependent
  - Doubling the dose should provide roughly twice the pain relief
- Dopamine stimulation is dose independent and highly variable
  - Some people experience small increases in dopamine
  - Some people have large-scale surges
  - This is why time to addiction is highly variable
  - We don't know who's prone to these massive surges

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## Conclusions

- Research shows us patients value education about opioids, but changing the content may be the key to turning tide of the American opioid epidemic.
- Taking a novel approach that focuses on preparing patients to make decisions based on function and the quality of pain has the potential to reduce the amount of opioids used and reduce the risk for misuse, addiction, and death.
- Educating patients in this innovative way has the potential to provide pharmacy-based patient care in ways that can generate revenue while augmenting the role of students and technicians.

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**Questions/Discussion?**

