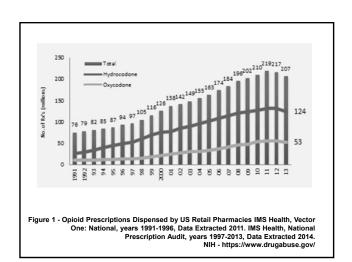
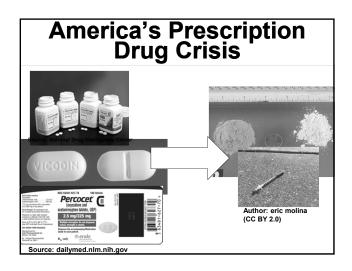


# How did we get here?





#### The 5th Vital Sign...or is it?

- "Just as we now know (the) earth is not flat, we know that pain is not a vital sign. Let's remove that from the lexicon."
  - James Milam, MD, an American Medical Association delegate
- "I am astounded that physicians don't believe we should assess pain on a regular and ongoing basis. That is exactly what removing pain as a vital sign means."
  - > Lynn Webster, MD, past president of the American Academy of Pain Medicine

https://www.painnewsnetwork.org/stories/2016/6/16/ama-drops-pain-as-vital-sign

## **American Medical Association Stance**

- Dropped pain as the 5<sup>th</sup> vital sign in 2016
- Adopted similar policies as Physicians for Responsible Opioid Prescribing (PROP)
- Lobbying the Joint Commission to weaken its pain management standards

https://www.painnewsnetwork.org/stories/2016/6/16/ama-drops-pain-as-vital-sign

#### **Joint Commission Stance**

- Current standards require that organizations establish policies regarding pain assessment and treatment and conduct educational efforts to ensure compliance.
- The standards DO NOT require the use of drugs to manage a patient's pain nor specify which drug should be prescribed.

 $https://www.jointcommission.org/joint\_commission\_statement\_on\_pain\_management. In the property of the proper$ 

#### Joint Commission Standards

- The hospital educates all licensed independent practitioners on assessing and managing pain.
- The hospital respects the patient's right to pain management.
- The hospital assesses and manages the patient's pain.

 $https://www.jointcommission.org/joint\_commission\_statement\_on\_pain\_management/$ 

## Joint Commission Policy Requirements

- Conducts a comprehensive pain assessment
- Uses methods to assess pain that are consistent with the patient's age, condition, and ability to understand
- Reassesses and responds to the patient's pain, based on its reassessment criteria
- Treats the patient's pain or refers the patient for treatment

 $https://www.jointcommission.org/joint\_commission\_statement\_on\_pain\_management. In the property of the proper$ 

# What are validated tools for screening and assessing pain?

	Tool Characteristics			
	Administration	Time to Complete	Length	Access Limitations
Assessing Function and Pain				
Pain, Enjoyment of life, General Activity (PEG) http://mytopcare.org/ wp-content/uploads/2013/06/PEG-Pain-Screening-Tool1.pdf	Patient self-report	1 minute	3 items	
Two Item Chronic Pain Scale	Clinician or patient self-report	1 minute	2 items	
Risk of Transitioning to Chronic Pain				
STarTBack http://www.keele.ac.uk/sbst/startbacktool/	Patient self-report	<5 minutes	9 items	
Functional Recovery Questionnaire (FRQ)	Clinician or patient self-report	<5 minutes	6 items	Requires email registration
Screening for Risk of Opioid Addiction and Substance Abuse				
Opioid Risk Tool (ORT) <sup>325</sup>	Clinician or patient self-report	1 minute	5 (yes/no) questions	
CAGE Adapted to Include Drugs (CAGE-AID) 126-128	Clinician	<5 minutes	4 (yes/no) questions	
Screener and Opioid Assessment for Patients with Pain - Revised (SOAPP-R) www.painedu.org/soapp.asp	Patient self-report	<10 minutes	24 items	Requires licensing agreement
Current Opioid Misuse Measure (COMM) www.painedu.org/soapp.asp	Patient self-report	<10 minutes	17 items	Requires licensing agreement
DIRE http://integratedcare-nw.org/DIRE_score.pdf	Clinician interview	<2 minutes	7 items	
Alcohol Use Disorders Identification Test (AUDIT)	Clinician or patient self-report	<5 minutes	10 items	
Screening for Mental Health Disorders				
Patient Health Questionnaire 9 (PHQ-9)	Patient self-report	<5 minutes	10 items	
GAD-7 http://www.mpho.org/resource/d/34008/ GAD708.19.08Cartwright.pdf	Patient self-report	<5 minutes	7 items	
PC-PTSD	Clinician interview	<5 minutes	4 items	
Except for the FRQ, all of the free, publicly available tools listed in this table hav berapy. Further validation studies and prospective outcome studies are needed http://	to determine how the use of these to	ols predicts and affe	ects clinical outcom	

# PEG Pain Screening Tool 1. What number best describes your pain on average in the past week: 0 1 2 3 4 5 6 7 8 9 10 No pain Pain as bad as you can imagine 2. What number best describes how, during the past week, pain has interfered with your enjoyment of life? 0 1 2 3 4 5 6 7 8 9 10 Does not Completely interferes 3. What number best describes how, during the past week, pain has interfered with your general activity? 0 1 2 3 4 5 6 7 8 9 10 Does not completely interferes To compute the PEG score, add the three responses to the questions above, then divide by three to get a final score out of 10. The final PEG score can mean very different things to different patients. The PEG score, like most other screening instruments, is most useful in tracking changes over time. The PEG score should decrease over time after therapy has begun.

# Two Item Chronic Pain Scale Graded chronic pain scale: a two-item tool to assess pain intensity and pain interference In the last month, on average, how would you rate your pain? Use a scale from 0 to 10, where 0 is "no pain" and 10 is "pain as bad as could be"? [That is, your usual pain at times you were in pain.] No pain Pain as bad as could be 0 1 2 3 4 5 6 7 8 9 10 In the last month, how much has pain interfered with your daily activities? Use a scale from 0 to 10, where 0 is "no interference" and 10 is "unable to carry on any activities." No interference Unable to carry on any activities 0 1 2 3 4 5 6 7 8 9 10

# What are the best treatment strategies for patients?

#### **Patient Case**

- JM is a 53 y.o male recently discharged from the hospital following a ventral hernia repair.
- PMH: HLD, COPD, DM, and chronic low back pain
- Home medications:
  - atorvastatin 40 mg PO daily
  - tiotropium bromide inhaler 1 puff daily,
  - albuterol/ipratropium inhaler 1 puff every 6 h as needed
  - aspirin 81 mg PO daily
  - metformin 500 mg PO BID
  - morphine SR 30 mg PO BID
- Discharge Rx's:
  - morphine SR increased to 45 mg PO BID (#60)
  - oxycodone 10 mg PO q 6 h as needed for breakthrough pain (#60)

#### Pain

- · Definition:
  - Physical suffering or discomfort caused by illness or injury
- · Types:
  - Somatic skin, tissue, muscle pain
    - · sharp, stabbing
  - Visceral internal organ pain
    - · ache, pressure
  - Neuropathic nerve/nerve fiber damage or dysfunction
    - · burning, tingling

http://mha.ohio.gov/Portals/0/assets/Initiatives/GCOAT/Acute-pain-infographic.pd

#### Non-Opioid Analgesics

NSAIDs Acetaminophen Corticosteroids

NSAIDS		
Mechanism	Inhibition of cyclooxygenase (COX) which reduces prostaglandin synthesis     Anti-inflammatory and anti-pyretic actions     Non-selective vs. COX-2 selective	
Medications in class	<ul> <li>Non-selective: ibuprofen, naproxen, aspirin, ketoprofen, indomethacin, ketorolac</li> <li>COX-2 selective: celecoxib, meloxicam, diclofenac, etodolac</li> </ul>	
Types of pain	Somatic/visceral, low to moderate pain, inflammatory processes, musculoskeletal	
Precautions	Cardiovascular disease     Risk of GI bleeding and/or ulceration     Caution in those with impaired renal function and the elderly	
Relative cost	AWP: <\$10 to >\$220 for a 30 day supply	
Grosser T	Lexicomp. https://online.lexi.com. Accessed March 12, 2017. Smyth E, FitzGerald GA. Goodman & Gilman's: The Pharmacological Basis of Therapeutics. Accessed March 12, 2017.	

#### **Acetaminophen (APAP)**

- Mechanism:
  - Not fully understood
  - Centrally acting analgesic which inhibits PG synthesis; works peripherally to block generation of nerve impulses
  - Anti-pyretic
- Types of pain: somatic/visceral, mild to moderate pain
- Precautions:
  - Hepatotoxicity concerns (max. daily dose: 4 g)
  - Hepatic impairment
  - Alcohol use (≥3 servings of alcohol per day)
- Relative cost: AWP: < \$10 for a 30 day supply

Lexicomp. https://online.lexi.com. Accessed March 12, 2017. Grosser T, Smyth E, FitzGerald GA. Goodman & Gilman's: The Pharmacological Basis of Theraneutics. Accessed March 12. 2017.

#### Corticosteroids

- · Mechanism:
  - Indirect analgesia via reduction in inflammation
- Medications in class: prednisone, dexamethasone, hydrocortisone, methylprednisolone etc.
- Type of pain: somatic/visceral due to inflammation
- · Precautions:
  - Avoid long term use
  - Adrenal suppression
  - Hyperglycemia and hypertension
  - Immunosuppression
- Relative cost: AWP: <\$20 for a 30 day supply

Lexicomp. https://online.lexi.com. Accessed March 12, 2017 Grosser T, Smyth E, FitzGerald GA. Goodman & Gilman's: The Pharmacological Basis of Therapeutics. Accessed March 12, 2017

Glucocorticoid	Approximate Equivalent Dose (mg)	Half-life (hr)
'	Short-Acting	•
Cortisone	25	8-12
Hydrocortisone	20	8-12
	Intermediate-Acting	
Methylprednisolone	4	18-36
Prednisolone	5	18-36
Prednisone	5	18-36
Triamcinolone	4	18-36
	Long-Acting	
Betamethasone	0.6 – 0.75	36-54
Dexamethasone	0.75	36-54

# Opioid Analgesics

Opioids		
Mechanism	mu-opioid receptor agonist     Inhibition of ascending pain pathways,     alters perception to pain	
Medications in class	Morphine, hydromorphone, fentanyl, buprenorphine, oxycodone, oxymorphone, hydrocodone, tramadol, tapentadol, codeine	
Types of pain	Somatic/visceral/neuropathic pain	
Precautions	High abuse potential     CNS depression     Respiratory depression     Constipation	
Relative cost	Variable, but relatively inexpensive if prescribed generic	

#### **Opioid Conversion**

Drug	Oral dose (mg)	Parenteral dose (mg)
Morphine	10	30
Hydromorphone	7.5-8	1.5-2
Oxycodone	20-30	-
Oxymorphone	10	1
Hydrocodone	30-45	-
Codeine	100-130	200
Fentanyl	0.1 (100 mcg)	-

Equianalgesic Dosing of Opioids for Pain Management. Pharmacist's Letter. 2015; 28(10): Detail- Document#: 31071

#### **Alternative Agents**

#### **Anticonvulsants**

Gabapentin Pregabalin Carbamazepine Lamotrigine

#### **Antidepressants**

Tricyclic Antidepressants SSRIs/SNRIs

#### **Calcium Channel Blockers** Mechanism Binds to calcium channels in the CNS which modulates release of neurotransmitters that have a role in analgesia Medications in Gabapentin (Neurontin, Gralise) Pregabalin (Lyrica) class Types of pain Neuropathic pain (diabetic neuropathy, postherpatic neuralgia, etc.) Pregabalin approved for fibromyalgia **Precautions** Abuse potential CNS depression Dose reduction needed in renal impairment

Relative cost

Should not be abruptly discontinued

AWP: <\$50 to >\$600 for a 30 day supply

Lexicomp. https://online.lexi.com. Accessed March 12, 2017

Sodium Channel Inhibitors		
Mechanism	Inhibits Na channels and stabilizes neuronal membranes     Lamotrigine also inhibits release of glutamate	
Medications in class	Carbamazepine     Lamotrigine	
Types of pain	Neuropathic pain     Carbamazepine is first-line for Trigeminal Neuralgia	
Contraindication	Initiation within 14 days of MAOI use	
Precautions	Induction of liver enzymes     (carbamazepine) → drug interactions     Carbamazepine: use with caution in CVD     Renal and hepatic impairment     Blood dyscrasias	
Relative cost	AWP: >\$100 for 30 day supply	

Lexi-Drugs. Lexicomp. Wolters Kluwer. Hudson, Oh. Available at https://online.lexi.com. Accessed March 14, 2017 McNamara JO. Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 12e New York, NY. McGraw-Hill Accessed March 14, 2017

Mechanism	Inhibits reuptake of serotonin and norepinephrine
Medications in class	Amitriptyline     Nortriptyline     Imipramine/desipramine
Types of pain	Neuropathic pain     Fibromyalgia     Diabetic neuropathy
Precautions	Increased risk of suicidal thoughts/behavior     Caution in elderly – anticholinergic side effects
Relative cost	AWP: \$10 - \$50 for 30 day supply

Serotonin Norepinephrine Reuptake Inhibitors (SNRIs)	
Mechanism	Inhibits reuptake of serotonin and norepinephrine
Medications in class	Duloxetine     Venlafaxine
Types of pain	Neuropathic pain     Fibromyalgia
Precautions	Increased risk of suicidal thoughts/behavior     Increased risk of bleeding     Hypertension
Relative cost	AWP: \$100 - \$200 for 30 day supply

# Other Analgesic Therapies Skeletal Muscle Relaxants Topical Analgesic Agents

Skeleta	I Muscle Relaxants
Mechanism	Baclofen - hyperpolarization of primary afferent fiber terminals → reduction of muscle spasticity
	Cyclobenzaprine - Centrally acting, reduces tonic somatic motor activity
Medications in class	Baclofen     Cyclobenzaprine
Types of pain	Muscle spasms/spasticity
Precautions	Avoid abrupt discontinuation (baclofen)
Relative cost	AWP: \$80 - \$100 for 30 day supply
Lexi-Drugs. Lexicomp. Wolte	rs Kluwer. Hudson, Oh. Available at https://online.lexi.com. Accessed March 15, 2017

#### **Topical Analgesic Agents**

- Capsaicin
  - · Mechanism:
    - Activates TRPV1 receptor → depolarization of neuron → inhibition of nociceptive nerve transmission
    - -Depletion of substance P
  - Types of pain: neuropathic, muscle/joint pain
- Onset of action: 2-4 weeks
- Lidocaine
  - · Mechanism:
    - -inhibition of the conduction of the nerve impulse
  - Types of pain: localized pain, somatic/neuropathic

Lexi-Drugs. Lexicomp. Wolters Kluwer. Hudson, Oh. Available at https://online.lexi.com. Accessed March 15, 2017

#### **Patient Case**

- JM had a follow-up appointment on POD 14 with his surgeon who refused to refill his Rx for oxycodone
- JM is still complaining of pain and scheduled an appointment with his PCP
- Was JM's pain treated appropriately upon discharge?

#### **Patient Case**

- JM had major abdominal surgery
  - Benefits exist with narcotic-sparing analgesia
  - Target musculoskeletal pain control
  - Opioid side effects lead to poorer outcomes and patient satisfaction
- Multimodal treatment approach
  - Ibuprofen 600 mg 800 mg PO q 6 h scheduled
  - Acetaminophen 500 mg 1000 mg PO q 6 h scheduled
  - Gabapentin 300 mg PO TID scheduled
  - Attempt to wean morphine SR back to 30 mg PO BID
  - Non-pharmacologic- PT, acupuncture, mindfulness, meditation

### What should be considered treatment success?

- Reduction in pain AND increase in functionality
  - 30% improvement in pain and function has been considered clinically meaningful in low back pain patients
  - 35-45% decrease in acute post-operative pain was associated with reported acceptable improvement to patients

Ostelo RW, Deyo RA, Stratford P, et al. Spine 2008;33:90-4. Gatchel RJ, Mayer TG, Choi Y, Chou R. Spine J 2013;13:889-93.

### How can we recognize and prevent opioid addiction?



#### **Thoughts Over Time**

- 1940 1980's Opioids cause addiction
- 1990's 2000's Pain is complex and multifactorial; opioids are good for some types of pain
- · 2016 Opioids cause addiction

Journal of Palliative Medicine. 2016(19)4. DOI: 10.1089/jpm.2016.0079

#### **Know the Facts**

- · In 2014, more than 262 million opioid doses were dispensed in Ohio for the management of acute pain
- Prescription opioids remain a significant factor in unintentional overdose deaths in Ohio

http://mha.ohio.gov/Default.aspx?tabid=828

#### Heroin

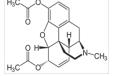
- Semisynthetic opioid derived from opium
  - Mu opioid receptor agonist which bind to opioid receptors in the CNS
  - Kappa and delta type activity
- Routes of administrations:
  - Snorted
  - Intravenous injection
  - Smoked/inhaled



https://en.wikipedia.org/wiki/List of opioids https://www.drugbank.ca/drugs/DB01452

#### Heroin

- As heroin use has increased, so have heroin-related overdose deaths:
  - ✓ Quadrupled since 2010
  - ✓ Increased by 20.6% from 2014 2015, with nearly 13,000 people dying in 2015
  - ✓ Laced with carfentanil



https://en.wikipedia.org/wiki/Heroin#/media/File:Heroin\_-\_Heroine.svg https://www.cdc.gov/drugoverdose/data/heroin.htm http://time.com/4485792/heroin-carfentanil-drugs-ohio/

#### Ohio's Approach to Fight Drug Abuse

- · Cutting the pill supply
- Preventing drug abuse before it starts
  - Start Talking!
- Providing treatment and recovery support to those in need
- · Saving lives through naloxone

http://mha.ohio.gov/Portals/0/Acute%20Prescriber%20Guidelines%20FINAL%20PRINT.pdf

#### Ohio Automated Rx Reporting System (OARRS)

- · Created by Ohio Board of Pharmacy in 2006
- Access available for all prescribers and pharmacists
- Information on all outpatient controlled substance prescriptions
- Data reported every 24 hours and is maintained in a secure database
- · Tools used to address drug diversion and abuse
  - Patient care tool
  - Drug epidemic early warning system
  - Drug diversion and insurance fraud investigative tool

https://www.ohiopmp.gov/Portal/About.asp

### Governor's Cabinet Opiate Action Team (GCOAT)

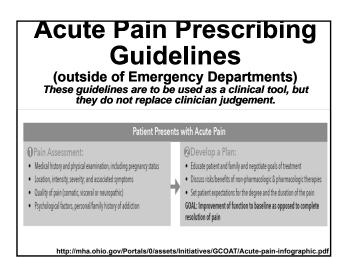
- Part of Ohio's effort to curb misuse and abuse of prescription pain medications and unintentional overdoses
  - Prescribing guidelines for outpatient management of acute pain (2016)
  - Prescribing guidelines for chronic pain
     12 weeks (2013)
  - Prescribing guidelines for emergency departments and acute care facilities (2012)

http://mha.ohio.gov/Default.aspx?tabid=828

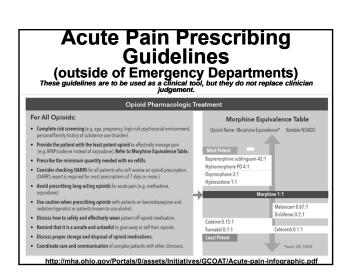
#### GCOAT Actions – Positive Effect

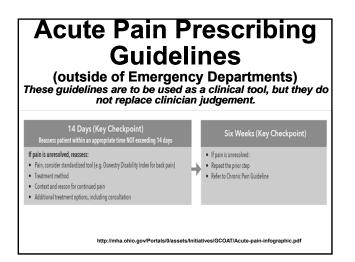
- Prescriber/pharmacist queries using OARRS increased from 778,000 in 2010 to 9.3 million in 2014
- Opioid doses dispensed to Ohio patients decreased by 42 million from 2012 to 2014
- Ohio patients receiving prescriptions for opioids and benzodiazepines at the same time dropped 8% from 2013 to 2015

http://mha.ohio.gov/Default.aspx?tabid=828



#### **Acute Pain Prescribing Guidelines** (outside of Emergency Departments) These guidelines are to be used as a clinical tool, but they do not replace clinician judgement. **Options** Somatic (Sharp or Stabbing) Visceral (Ache or Pressure) | Neuropatni Tingling) • Ice, heat, positioning, bracing, wrapping, splints, Neuropathic (Burning or Therapy Massage therapy, tactile stimulation, Gabapentin/pregabalin/TCAs/ First Line Acetaminophen, NSAIDs, Corticosetroids acupuncture/acupressure, chiropractic adjustment, osteonathic neuromusculoskeletal Anti-epileptics, baclofen. bupropion, low-concentration • Biofeedback Alternatives skeletal muscle relaxants, SNRIs/TCAs, dicyclomine capsaicin, SSRIs, topical SSRIs/SNRIs/TCAs · Directed exercise such as physical therapy http://mha.ohio.gov/Portals/0/assets/Initiatives/GCOAT/Acute-pain-infographic.pdf





#### Have "The Talk"

- Be honest about pain medication misuse
- · Start with assessment
  - Pain level
  - Medication history
  - History of drug abuse (you/family/neighbors)
- Work together to create a safe treatment plan
- · Discuss expectations

### Chronic Pain Prescribing Guidelines

These guidelines are to be used as a clinical tool, but they do not replace clinician judgement.

Chronic pain: pain that persists after reasonable medical efforts have been made to relieve the pain or cure its cause and that has continued for > 3 months

"Trigger Point" = 80 mg MED\* (Ohio)

\*The 80 mg MED is not an endorsement by any regulatory body or medical professional to utilize that dose or greater.

http://mha.ohio.gov/Portals/0/assets/Initiatives/GCOAT/Guidelines-Chronic-Pain.pd

# CHANNELS OF INTEGRAL INCIDENCE IN THE CLINIC JOURNAL CLUB WEB EXCLUSIVES AUTHOR INFO BRIGIMAL RESEARCH | 19 JANUARY 2010 Opioid Prescriptions for Chronic Pain and Overdose: A Cohort Study Rate M. Dunn, PhD, Kathleen W. Saunders, ID, Corolyn M. Rutter, PhD, Caleb J. Bonta-Green, MSW, MFH, PhD, Joseph O. Merrill, MD, MPH, Mark D. Sailivan, MD, PhD, Constance M. Wrister, DFH, MSW) Riddened J. Silverberg, PhD, MPH, Cynthia L Campbell, PhD, Bruce M. Praty, MD, PhD, Michola of Depoid-related overdoses are with patients receiving 1 to 20 mg/d of opioids (0.2% annual overdose rate), patients receiving 5 to 99 mg/d had a 3.7-fold increase in overdose risk (95% Cl, 1.5 to 9.5) and a 0.7% annual overdose rate. Patients receiving 100 mg/d or more had an 8.9-fold increase in overdose risk (Cl, 4.0 to 19.7) and a 1.8% annual overdose rate. Conclusion: Patients receiving higher doses of prescribed opioids are at increased risk for overdose, which underscores the need for close supervision of these patients.

### Chronic Pain Prescribing Guidelines These guidelines are to be used as a clinical tool, but they do not replace clinician judgement.

- Non-opioid therapies first
- Avoid long-term and co-prescribing (benzo's)
- Press pause to "trigger points"
- Ensure patient safety
  - ✓ Informed consent
  - √ Functional status (4 A's)
    - ADL's, ADE's, Analgesia, Aberrant behavior
  - Progress toward treatment goals
  - OARRS as an additional check
  - Patient pain treatment agreement
  - Refer patient to pain specialist if needed Review Treatment Plan at "trigger point"
- Assess addiction risk or mental health concerns

http://mha.ohio.gov/Portals/0/assets/Initiatives/GCOAT/Guidelines-Chronic-Pain.pdf

#### What are limitations to implementing current recommendations?

#### **Limitations**

- TIME
- · Pain is and always will be objective
- Differing patient behaviors
- · Hard to control outpatient setting
- · Lack of resources

