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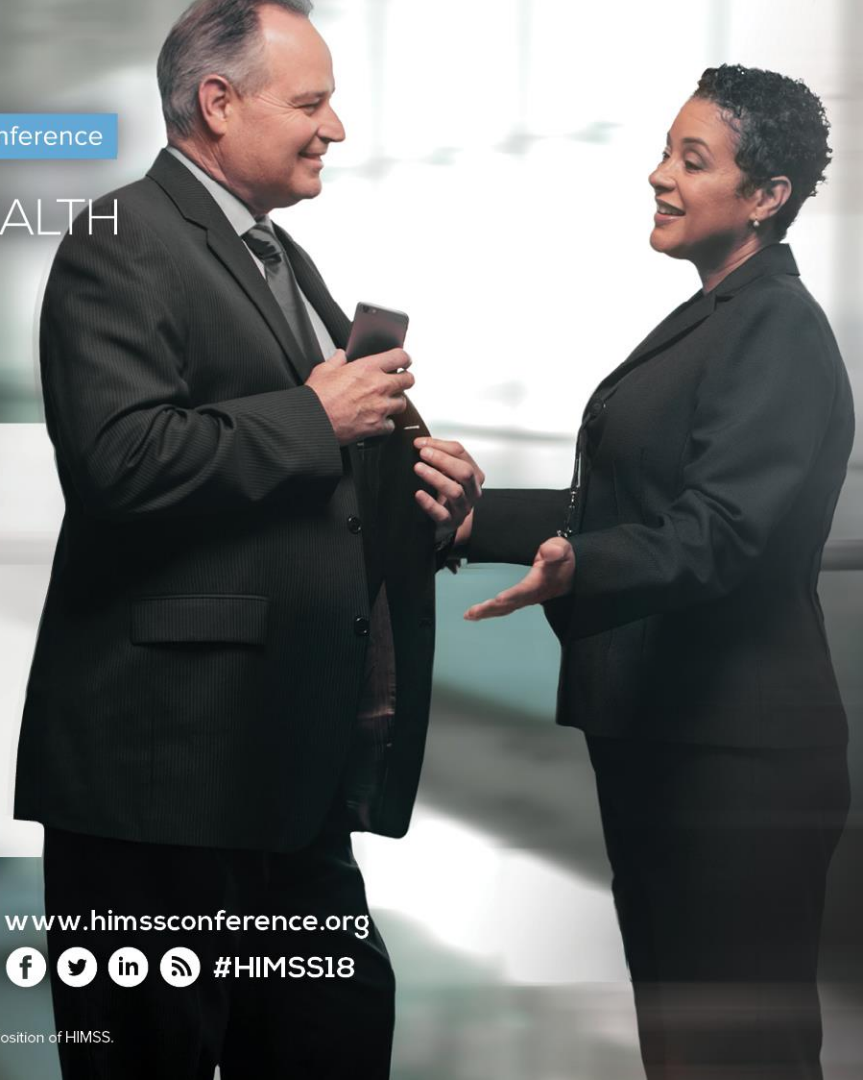
Inappropriate Opioids, Adverse Outcomes, and IT Solutions

Session 67, March 6, 2018

Dr. Kurt Hegmann, MD, MPH, Professor and Center Director, Rocky Mountain Center for Occupational and Environmental Health, University of Utah

Dr. Roman Kownacki, MD, MPH, Regional Medical Director for Occupational Health, The Permanente Medical Group

COMMITMENT



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Conflict of Interest

Kurt Hegmann, MD MPH

Editor-in-Chief of the American College of Occupational and Environmental Medicine (ACOEM) Clinical Practice Guidelines

Roman Kownacki, MD MPH

Has no real or apparent conflicts of interest to report.

Agenda

- Opioid epidemic background
- Described advances in prescribing guidelines
- Case study in improved outcomes using prescribing guidelines
- Review of Kaiser Permanente (KP)’s IT opioid tools
- Discuss provider attitudes

Learning Objectives

- Recognize the current opioid epidemic
- Compare opioid prescriptions to evidence-based guideline recommendations
- Assess the reduction in healing time and medical costs by following opioid guidelines
- Recognize the IT solutions for the opioid epidemic
- Discuss provider attitudes towards opioid IT solutions within an EHR

Prescription Opioid Epidemic Statistics

More than **40** PEOPLE die every day from overdoses involving **prescription opioids**.

Each day, more than **1,000** PEOPLE are treated in **emergency departments** for not using prescription opioids as directed.

At least **HALF** of all opioid overdose deaths involve a **prescription opioid**.

Historical Events Leading to Opioid Epidemic

1980s Portenoy and Foley opined long acting opioids for chronic pain was safe, effective, <1% addiction risk, no upper dose limit (n=38).

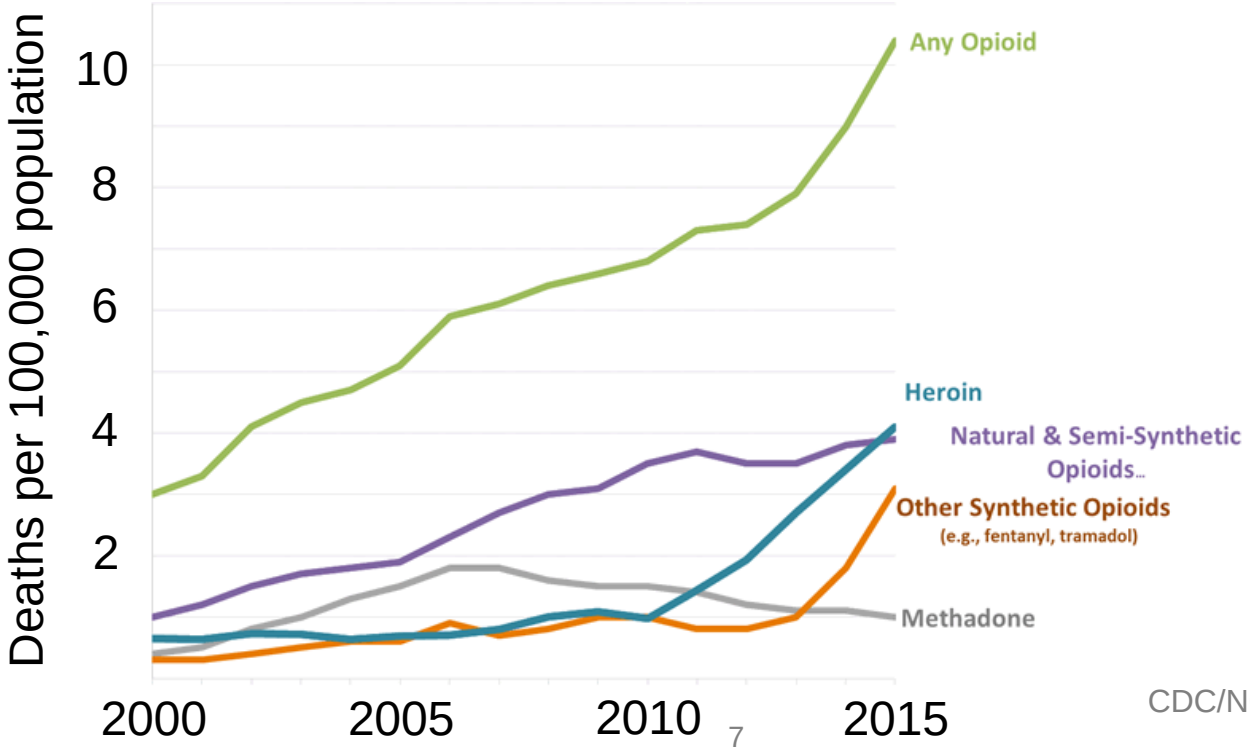
1999 Oregon Board of Med. Examiners disciplined MD for not prescribing enough pain med.; other lawsuits for pain under treatment.

2000 Veterans Administration launched pain as "5th Vital Sign"

2001 California jury convicted MD of elder abuse for undertreating pain.

Tompkins 2017; NYT 1999; Rich 2001

Overdose Deaths Involving Opioids



CDC/NCHS 2017

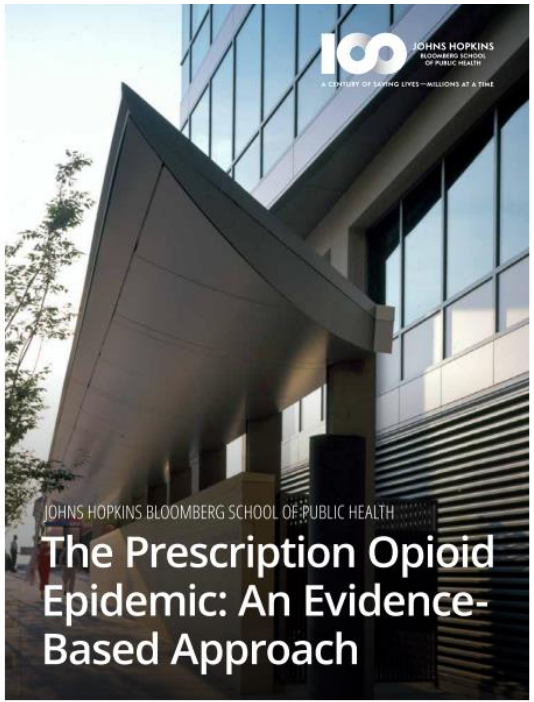
Opioids: The Most Bipartisan Topic?

Jan. 8, 2014, Democratic Gov. Shumlin devotes state-of-state to opioids

Oct. 26, 2017, Republican Pres. Trump declares opioids a U.S. public health emergency

Image: Reuters/Carlos Barria

Recommended Preventive Tools



#1: Prescribing Guidelines

- Recommendations for the strength, type, and duration of treatment
- Abuse risk factor identification
- Tapering and overdose recommendations

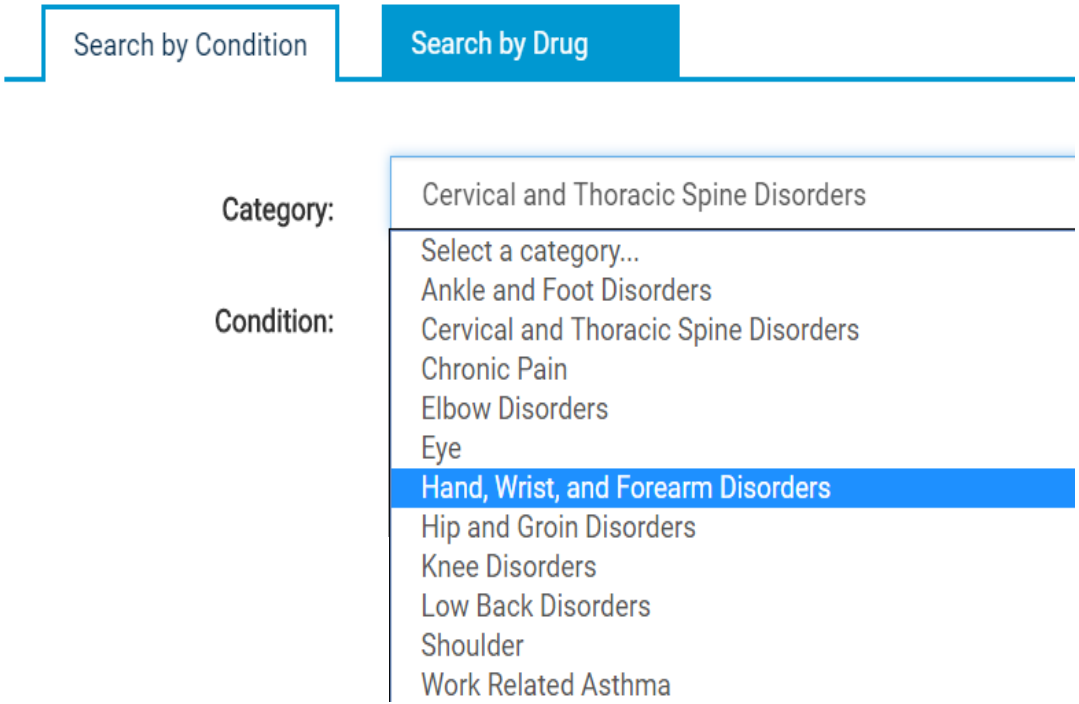
…Simply Yes/No Formulary Not Good Enough

JHBSPH 2015

Some Formularies are Condition and Guideline Agnostic

Drug Class	Generic Name	Brand Name	Gener Equiv	Status
Opioids	Morphine ER	Kadian®	Yes	N
Opioids	Morphine ER	MS-Contin	Yes	N
Opioids	Morphine ER / Naltrexone	Embeda	No	N
Opioids	Morphine sulfate	Arym™ ER	No	N
Opioids	Morphine sulfate	M hond™ ER	No	N
Opioids	Naloxone		No	N
Opioids	Naloxone	ntranasal	No	N
Opioids	Naloxone	an®	Yes	Y
Opioids	Oxycodone IR	R®	Yes	Y
Opioids	Oxycodone IR		No	N
Opioids	Oxycodone ER	®	No	N
Opioids	Oxycodone ER/ac in	Xa s XR	No	N
Opioids	Oxycodone ER/naloxone	Targiniq ER®	No	N
Opioids	Oxycodone/acetaminophen IR	Percocet®	Yes	Y
Opioids	Oxycodone/aspirin IR	Percodan®	Yes	N

Advanced Prescribing Guidelines



Search by Condition | Search by Drug

Category: Hand, Wrist, and Forearm Disorders

Condition: Select a condition...

- Select a condition...
- Carpal Tunnel Syndrome
- Compartment Syndrome
- Crush Injury
- Distal Forearm Fractures
- Distal Phalanx Fractures and Subungual Hematoma - Tuft Fracture
- Extensor Compartment Tenosynovitis - Including de Quervain's Stenosing Tenosynovitis and Intersection Syndrome
- Flexor Tendon Entrapment - Tenosynovitis and Trigger Digit
- Ganglion Cyst
- Hand Arm Vibration Syndrome
- Hand/Finger Osteoarthrosis
- Hand/Wrist/Forearm Lacerations
- Human and Animal Bites
- Kienböck Disease
- Middle and Proximal Phalangeal and Metacarpal Fractures
- Non-Specific Hand/Wrist/Forearm Pain
- Radial Nerve Entrapment
- Scaphoid Fracture
- Triangular Fibrocartilage Complex (TFCC) Tears
- Ulnar Nerve Entrapment

Recommendations by Phase and Pain Classification (and Evidence to Support)

Phase	Pain Classification	Drug Class	Generic (Brand)	Evidence Support
All	Post-operative	ANALGESICS - OPIOID	Filter by name...	All
+ Acute	All Moderate to Severe No pain classification Perioperative Post-operative	ANALGESICS - OPIOID	HYDROCODONE/ACETAMINOPHEN (Norco, Vicodin, Xodol)	Yes, Limited Evidence (C)
+ Acute	Post-operative	ANALGESICS - OPIOID	MORPHINE SULFATE	Yes, Limited Evidence (C)
+ Acute	Post-operative	ANALGESICS - OPIOID	MORPHINE SULFATE ER (Avinza, Kadian, MS Contin)	No, Other
+ Acute	Post-operative	ANALGESICS - OPIOID	OXYCODONE HCL (OxyContin, Roxicodone)	Yes, Limited Evidence (C)
+ Acute	Post-operative	ANALGESICS - OPIOID	OXYCODONE/ACETAMINOPHEN (Percocet)	Yes, Limited Evidence (C)

Recommendations within Guidelines

Hand Wrist and Forearm Disorders

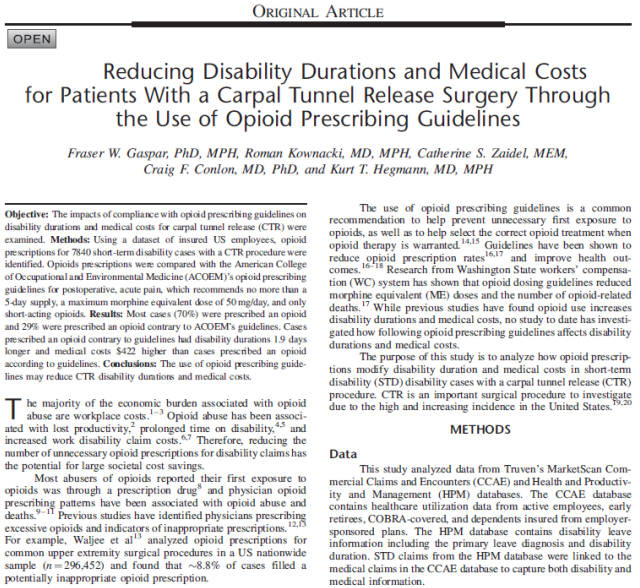
RESOURCES > ACOEM PRACTICE GUIDELINES > DISORDERS > HAND, WRIST, AND FOREARM > SUMMARY OF RECOMMENDATIONS

- Summary of Recommendations
- Workflows
- Introduction
- History and Physical Examination
- Auditing / Monitoring Criteria
- Diagnostic Recommendations
- Treatment Recommendations
- Follow-up Care

Opioids	Limited Use of Opioids for Post-operative Pain	Recommended, Evidence (C)
	Opioid Dose Limits in Acute Pain	Recommended, Evidence (C)
	Opioid Dose Limits in Post-operative Pain	Recommended, Insufficient Evidence (I)
	Opioid Dose Limits in Subacute and Chronic Pain	Recommended, Evidence (C)
	Opioids for Treatment of Acute, Severe Pain	Recommended, Evidence (C)
	Opioids for Treatment of Subacute or Chronic Severe Pain	Recommended, Insufficient Evidence (I)
	Routine Use of Opioids for Subacute and Chronic Non-malignant Pain	Moderately Not Recommended, Evidence (B)
	Routine Use of Opioids for Treatment of Non-Severe Acute Pain	Strongly Not Recommended, Evidence (A)
	Screening Patients Prior to Initiation of Opioids	Recommended, Insufficient Evidence (I)
	Urine Drug Screening for Patients Prescribed Opioids	Recommended, Evidence (C)
	Use of an Opioid Treatment Agreement (Opioid Contract, Doctor/Patient Agreement, Informed Consent)	Recommended, Insufficient Evidence (I)

Case Study on Percent of Prescriptions Following Guidelines

- Used Truven's MarketScan nationwide database (n= +2 million individuals)
- Investigated carpal tunnel release patients (n = 7,840) on temporary disability
- Assess differences in length of disability and medical costs for those prescribed opioids according/contrary to ACOEM guidelines



ORIGINAL ARTICLE

OPEN

Reducing Disability Durations and Medical Costs for Patients With a Carpal Tunnel Release Surgery Through the Use of Opioid Prescribing Guidelines

Fraser W. Gaspar, PhD, MPH, Roman Kownacki, MD, MPH, Catherine S. Zaidel, MEM, Craig F. Conlon, MD, PhD, and Kurt T. Hegmann, MD, MPH

Objective: The impacts of compliance with opioid prescribing guidelines on disability durations and medical costs for carpal tunnel release (CTR) were examined. **Methods:** Using a dataset of insured US employees, opioid prescriptions for 7840 short-term disability cases with a CTR procedure were identified. Opioids prescriptions were compared with the American College of Occupational and Environmental Medicine (ACOEM)'s opioid prescribing guidelines for postoperative, acute pain, which recommends no more than a 5-day supply, a maximum morphine equivalent dose of 50 mg/day, and only short-acting opioids. **Results:** Most cases (70%) were prescribed an opioid and 29% were prescribed an opioid contrary to ACOEM's guidelines. Cases prescribed an opioid contrary to guidelines had disability durations 1.9 days longer and medical costs $422 higher than cases prescribed an opioid according to guidelines. **Conclusions:** The use of opioid prescribing guidelines may reduce CTR disability durations and medical costs.

The majority of the economic burden associated with opioid abuse are workplace costs.[1–3] Opioid abuse has been associated with lost productivity,[2] prolonged time on disability,[4,5] and increased work disability claim costs.[6,7] Therefore, reducing the number of unnecessary opioid prescriptions for disability claims has the potential for large societal cost savings.

Most abusers of opioids reported their first exposure to opioids was through a prescription drug[8] and physician opioid prescribing patterns have been associated with opioid abuse and deaths.[9–11] Previous studies have identified physicians prescribing excessive opioids and indicators of inappropriate prescriptions.[12,13] For example, Waljee et al[13] analyzed opioid prescriptions for common upper extremity surgical procedures in a US nationwide sample ($n = 296,452$) and found that ~8.8% of cases filled a potentially inappropriate opioid prescription.

The use of opioid prescribing guidelines is a common recommendation to help prevent unnecessary first exposure to opioids, as well as to help select the correct opioid treatment when opioid therapy is warranted.[14,15] Guidelines have been shown to reduce opioid prescription rates[16,17] and improve health outcomes.[16–18] Research from Washington State workers' compensation (WC) system has shown that opioid dosing guidelines reduced morphine equivalent (ME) doses and the number of opioid-related deaths.[17] While previous studies have found opioid use increases disability durations and medical costs, no study to date has investigated how following opioid prescribing guidelines affects disability durations and medical costs.

The purpose of this study is to analyze how opioid prescriptions modify disability duration and medical costs in short-term disability (STD) disability cases with a carpal tunnel release (CTR) procedure. CTR is an important surgical procedure to investigate due to the high and increasing incidence in the United States.[19,20]

METHODS

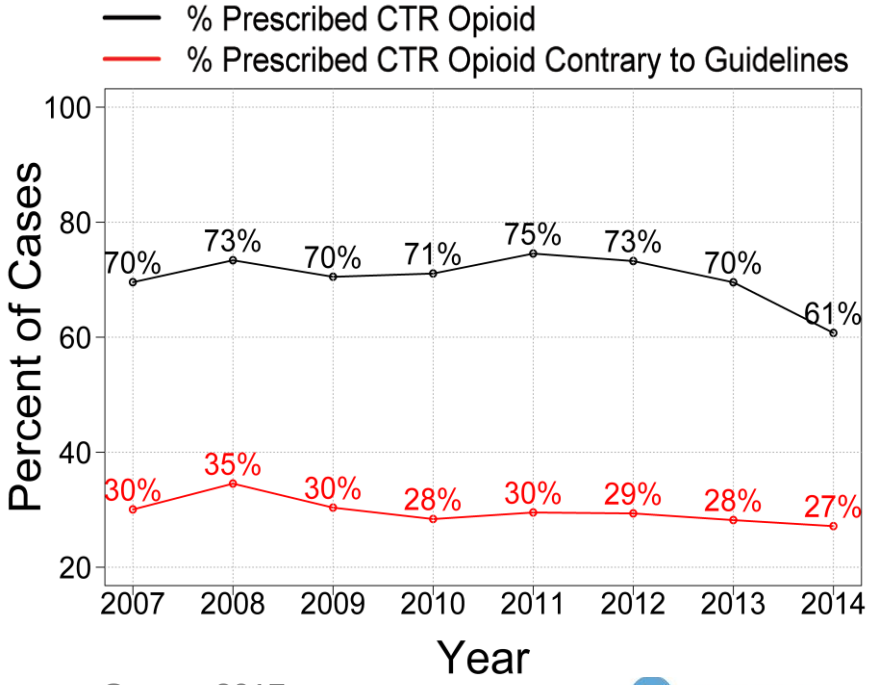
Data

This study analyzed data from Truven's MarketScan Commercial Claims and Encounters (CCAE) and Health and Productivity and Management (HPM) databases. The CCAE database contains healthcare utilization data from active employees, early retirees, COBRA-covered, and dependents insured from employer-sponsored plans. The HPM database contains disability leave information including the primary leave diagnosis and disability duration. STD claims from the HPM database were linked to the medical claims in the CCAE database to capture both disability and medical information.

Gaspar 2017

Consistent Over-Prescription

- **70%** filled an opioid prescription for CTR
- **28.9%** prescribed an opioid contrary to ACOEM guidelines
  - 15.2% prescribed greater than 5 day supply of opioids
  - 16.9% prescribed an opioid with > 50 morphine mg equivalents (MME) /day
  - 0.3% prescribed a long-acting/extended release opioid



Gaspar 2017

Following ACOEM's Guidelines Reduces Healing Time and Medical Costs

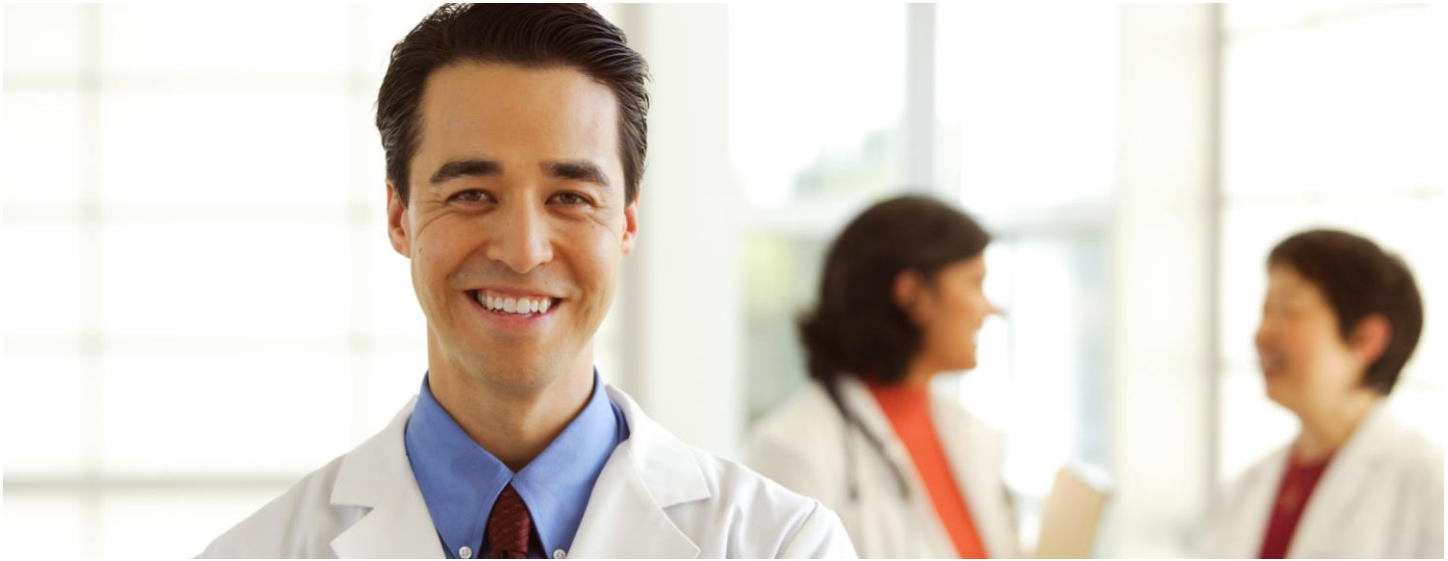
Controlling for confounders and holding all covariates constant at their average values

Cases filling an opioid prescription according to guidelines:

- Decreased disability durations of 2 days (5% drop)
- Decreased medical costs $422

$102 million- potential annual savings if all patients prescribed opioids according to guidelines.

Kaiser Permanente's Opioid IT Tools



KP Opioid Program Framework

1. Prescribing Data

Rx-Dose, Frequency

Opiates/Benzos

CURES (PDMP)

2. Clinical Data

Diagnosis

Screening tools

UDAP/Pain Agreement

3. Data Integration

Retrospective

Longitudinal

Interventions

Kaiser Opioid Program Framework

1. Prescribing Data

Rx-Dose, Frequency

Opiates/Benzos

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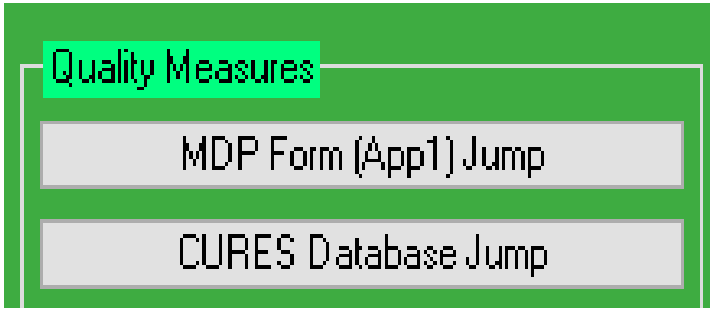
Interventions

One Click "Jump" to Prescription Drug Monitoring Program (PDMP) Database

- Controlled Substance Utilization Review and Evaluation System (CURES)
  - Electronic database that tracks controlled substances
  - Track patient's prescribing histories, find over prescribers, identify trends



- Patient information automatically filled-in

CURES Database: California's PDMP

Kaiser Opioid Program Framework

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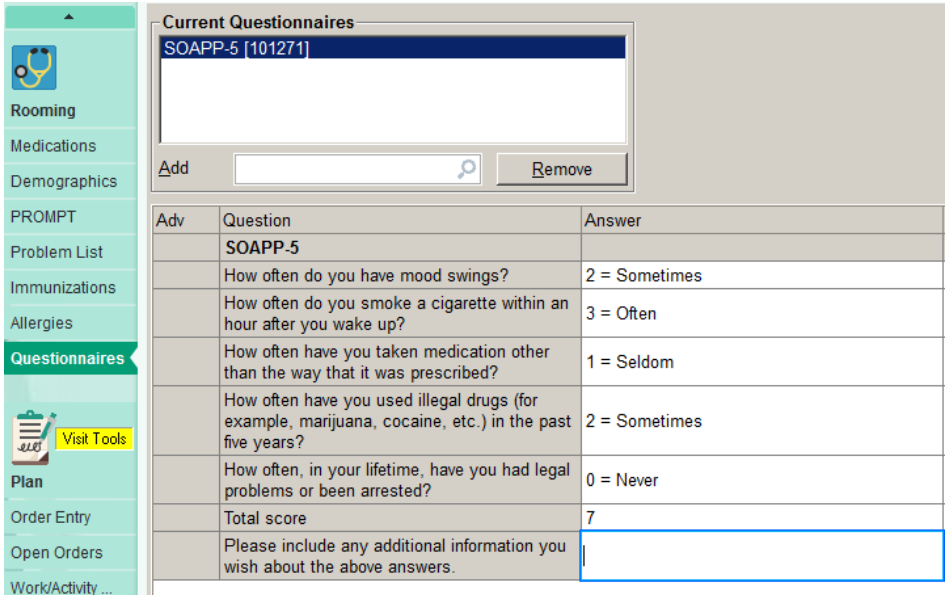
Screening Tools: "Screener and Opioid Assessment for Patients with Pain (SOAPP)®"



Adv	Question	Answer
	SOAPP-5	
	How often do you have mood swings?	2 = Sometimes
	How often do you smoke a cigarette within an hour after you wake up?	3 = Often
	How often have you taken medication other than the way that it was prescribed?	1 = Seldom
	How often have you used illegal drugs (for example, marijuana, cocaine, etc.) in the past five years?	2 = Sometimes
	How often, in your lifetime, have you had legal problems or been arrested?	0 = Never
	Total score	7
	Please include any additional information you wish about the above answers.	

Examples SOAPP Questions:

How often do you have mood swings?

How often have you taken medication other than the way it was prescribed?

How often have you used illegal drugs in the past five years?

Kaiser Opioid Program Framework

1. Prescribing Data

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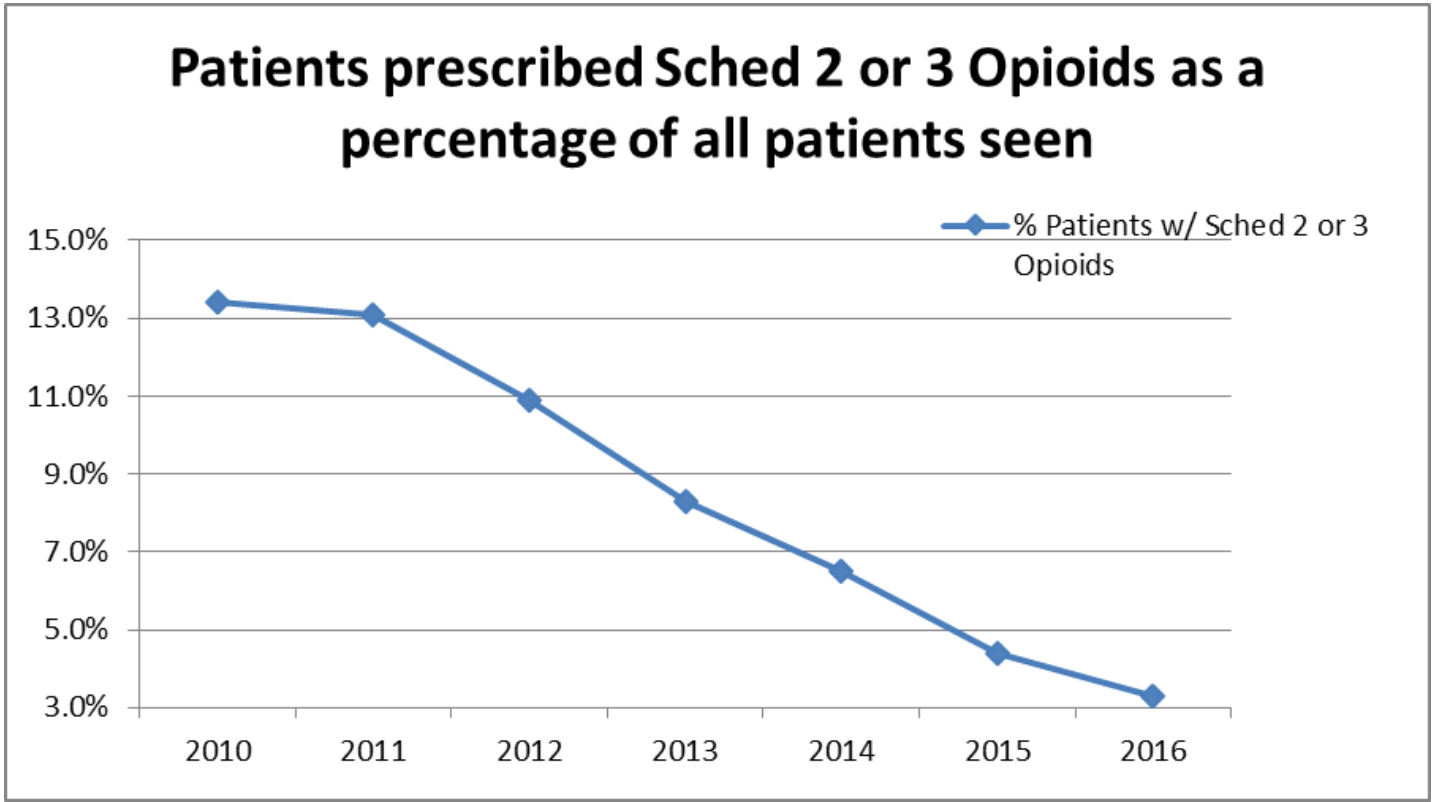
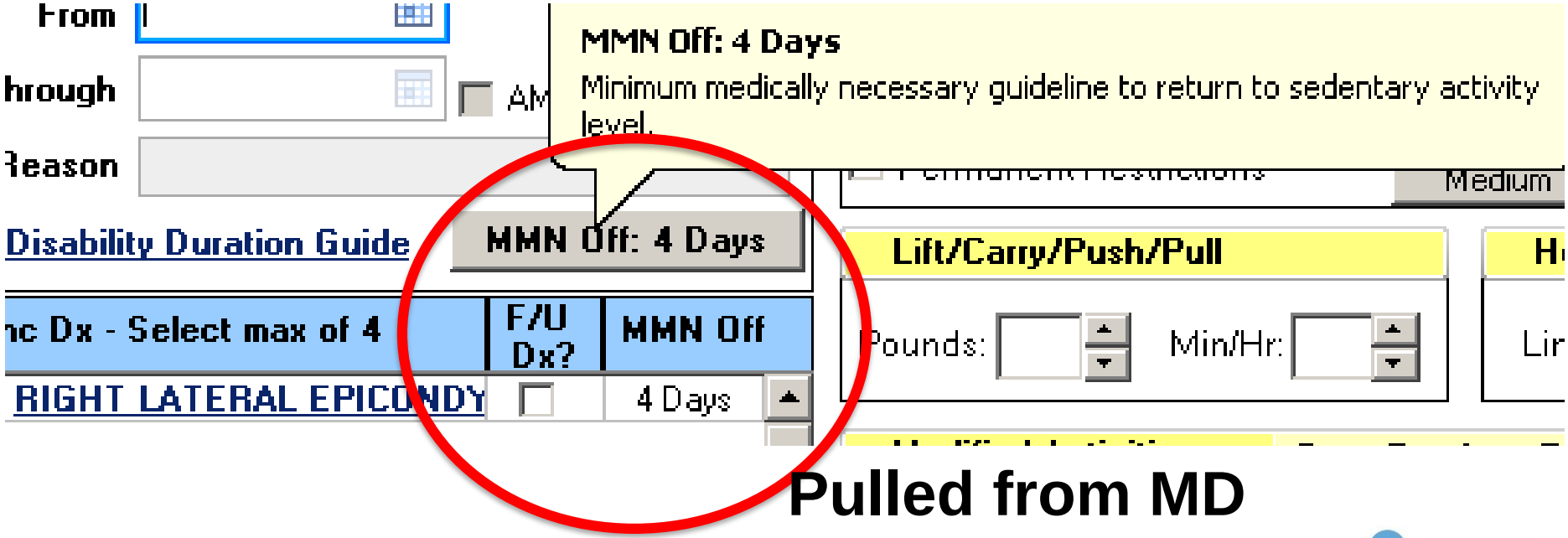
Patient Summary Report: >50 MME per Day

Jul	Aug	Sep	SOAPP5	Pain Mgmt Dx	Urine Drug Screen	Pain Agreement Signed	Primary Diagnosis	Injury Date
YES	YES	YES	5/18/17	11/17/17	11/17/17	04/25/14	721.1 (ICD-9-CM) - CERVICAL SPONDYLOSIS WITH MYELOPATHY	07/02/07
YES	YES	YES	6/18/13	11/06/17	01/17/17	02/07/14	(V58.78) AFTERCARE FOR MUSCULOSKELETAL SYSTEM SURGERY (primary encounter diagnosis) (722.10) LUMBAR DISC HERNIATION	03/08/13
YES	YES	YES	9/11/13	11/09/17	03/25/16	10/18/11	715.93 (ICD-9-CM) - OSTEOARTHROSIS UNSPEC WHETHER GEN/LOC FOREARM	10/30/07

Decreasing Opioid Prescriptions





Pulled from MD Guidelines

Future Work

- Real time hard stop at time of Rx
- CURES “push/pull”
- ACOEM Guidelines “push” into EHR

Physician and IT Management Perspectives

- MDs/HCPs want good outcomes more than anything!
- MDs/HCPs resistant to IT/EHRs as too many broken promises (e.g., “It’s great,” “It saves time,” “It’s easier to find things.”)
- IT will be best way to find the ‘cowboys’ who practice outside guidelines and need corralling (e.g., opioids dose, Rx durations, long-acting meds)
- Providing effective tools to produce superior outcomes will likely reduce or break the barriers MDs/HCPs see

Questions?

- Please fill out online session evaluation.
- Contact information:
  - Kurt Hegmann, Kurt.Hegmann@hsc.utah.edu
  - Roman Kownacki, Roman.Kownacki@kp.org

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