Opioid Pain Medications: Mitigating the Risks

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An Epidemic of Opioid-related Overdoses Has Developed Nationally – and in California

- Opioids and car accidents are now equally common causes of death (Murphy 2012)
- Emergency department visits and hospitalizations are also growing
- Non-fatal overdoses are about 12 times more frequent than fatal ones (Dunn 2010)

Objectives
- To explain our evaluation of opioid treatment guidelines and systematic reviews, and
- To describe how this information can be used to mitigate the risks associated with opioid pain medications
Outline

- Background
- Methods
- Results
- Conclusion

Outline

- Background
  - Factors contributing to opioid-related fatalities
  - Issues unique to workers' compensation settings
- Methods
  - Sought for guidelines and systematic reviews
  - Identified high-risk prescribing practices
  - Evaluated opioid treatment guidelines
- Results
  - Strategies to identify high-risk prescribing practices and mitigate risks
  - Results of guideline evaluation
- Conclusion
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Three Factors May Have Contributed to The Rise in Opioid Overdoses
(1) Opioids have inherent risks
   - Opioids suppress the drive to breathe, particularly in combination with sleeping/anti-anxiety medication or alcohol
   - Opioids can be addictive, more so for some people than others
(2) The public mistakenly believes that prescription drugs are safer to abuse than street drugs
   - Prescription drugs abuse has risen, while street drugs use has dropped
   - People who abuse prescription opioids obtain them from physicians 31% of the time—or from the medicine cabinets of friends, parents, etc.
(Murphy 2012)(Becker 2011)(McCarthy 2007)
Three Factors May Have Contributed to The Rise in Opioid Overdoses (Continued)

(3) Over the past 20 years, the standard of care for pain management evolved, placing increasing emphasis on attaining adequate control

- Previously, patients with severe, objective sources of pain had been under-treated or even untreated
- Pain management is now part of guidelines, California continuing medical education, and hospital accreditation
- Physicians are often taught that there is no objective measure of pain or maximum dose of opioids so they should adjust the dose until the patient reports that the pain is adequately controlled
- There has been a dramatic increase in the number of patients receiving opioids and in the doses prescribed (Pletcher 2008)

Intentional Misuse Contributes to Overdoses, But Prescribing Practices Are Contributing Too

- Of patients experiencing prescription drug overdoses,
  - 40% were seeing multiple doctors and often diverting
  - 40% were seeing one doctor and receiving higher doses
  - 20% were seeing one doctor and receiving lower doses (CDC 2012)
- Overdoses often occur when patients take opioids with another prescription medication or alcohol:
  - A second drug is involved in half of fatal overdoses, most frequently benzodiazepines (Warner 2009)
  - Over 75% of patients who experience serious overdoses have been prescribed sedative-hypnotics in the recent past (Dunn 2011)
- Risk is also related to the opioid and the dose prescribed
Overdoses Occur at Surprisingly Low Doses of Opioids

![Graph showing the relationship between dosage and overdose risk.]

In Workers’ Compensation Settings, Opioid Prescribing is More Common and Quite Risky

- Frequency of opioid use is almost twice as common:
  - WC: 32% (range 8.8-52%) of patients used opioids (9 studies)
  - Non-WC: 18% (8-30%) of patients with chronic non-cancer pain used opioids (7 studies)
- Average daily doses used are about the same:
  - WC: 48 mg (7.8-110 mg) morphine equivalents/day
  - Non-WC: 42 mg (13-128 mg) morphine equivalents/day
- But some WC patients receive high doses (Ohio data):
  - 9.2% had doses >120 mg morphine equivalents/day
  - 0.2% had doses >1,000 morphine equivalents/day (Dembe 2012)
In California, Workers’ Compensation Patients Often Receive High-Risk Drugs

- Of all prescriptions from 1993-2009,
  - 27% were for medications with a high risk of overdose (fentanyl patches and methadone)
  - 48% were for medications with a high addictive potential (oxycodone, 45%; and immediate release fentanyl, 2.9%)
- One percent of the physicians who prescribed opioids within the California WC system generated 33% of all opioid prescriptions (Swedlow CWCI 2012)

Opioid Use May Be Associated with Worse WC Outcomes and Higher Costs

- People with back problems prescribed >9.3 mg morphine equiv/ day in the first 15 days of their claim had longer disability and higher medical care costs (Webster 2007)
  - Two other studies reached similar conclusions, including one in California (Franklin 2004; Swedlow 2008)
- Disentangling whether the injury or the opioids explains the worse outcomes is challenging, however

- Nonetheless,
  - Overdoses involve costly emergency department visits and hospitalizations
  - Patients who develop substance abuse disorders while on long-term opioids are likely to have worse outcomes and higher costs
Given Concerns about Overdose and Opioid Misuse, the Standard of Care is Evolving

- Guidelines are placing increasing emphasis on these issues
- Policymakers in a variety of settings at the national level and in other states are actively working to address these issues
- This provides an opportunity for the California WC system
  - To implement the latest standards of care for using opioids to treat pain
  - To develop systems for identifying high-risk prescribing practices

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Research Objectives

- Search for recent guidelines and systematic reviews
- Develop a method for identifying high-risk prescribing using administrative (billing) data
- Evaluate the quality of recent opioid treatment guidelines

First, We Conducted a Systematic Search for Guidelines and Systematic Reviews

- National Guidelines Clearinghouse
- MEDLINE via PubMed
- Websites of relevant specialty societies
- Websites of California, Colorado, Washington state workers’ compensation systems
- For systematic reviews, a variety of web-based databases
Second, We Selected Guidelines and Reviews on the Basis of the Following Criteria

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<thead>
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<th>Inclusion Criteria</th>
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<td>• Addressed acute,</td>
<td>• Focused on one condition,</td>
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<td>subacute, or chronic pain</td>
<td>part of body, setting, type of pain, procedure</td>
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<td>in general</td>
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<td>• Published between Jan 1,</td>
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<td>2007 and May 15, 2012</td>
<td>Did not meet criteria for a guideline or systematic review</td>
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Third, We Identified Key Elements of Opioid Prescribing that Can Increase Risk

• The objective was to develop a system for identifying high-risk prescribing practices using administrative (e.g., billing) data

• Key elements present in such data are:
  • Type of opioid medication (i.e., the specific drug)
  • Formulation & route of administration (e.g., patch, long acting)
  • Maximum daily dose (morphine equivalents / day)
  • Drug-drug interaction: taking opioids along with a medication that increases the risk of overdose or other adverse events

• We then extracted information from the guidelines and reviews on these key elements
We Also Extracted Information Relating to The Usefulness of Ways of Reducing the Risks

- Opioids vs. other pain medications (NSAIDs, acetaminophen)
- Written treatment agreements between providers and patients about opioid therapy
- Urinary drug testing
- Screening for substance abuse by taking medical history
- Other factors that may affect patient outcomes

Fourth, We Evaluated the Guidelines and Reviews Using Standardized Instruments

- Guideline Evaluation:
  - AGREE II: Guideline development methods
  - AMSTAR: Quality of the literature review used in development
- Systematic Review Evaluation:
  - AMSTAR: Quality of the literature review used in development
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Results of Search for Guidelines and Systematic Reviews

- Guidelines:
  - 17 eligible documents
  - 12 general opioid treatment guidelines able to be fully evaluated using AGREE II, AMSTAR
- Systematic Review Evaluation:
  - 9 eligible documents
  - All evaluated using AMSTAR
Information Extracted from Guidelines and Reviews: Opioids Are Effective

- Four systematic reviews found that oral opioids are significantly more effective than placebo in treating chronic pain, with declines in pain of 30-50%.
- Using opioids for chronic pain is associated with significant improvements in measures of functional status, such as the SF-36 (Noble 2010)(Papadopoulos 2010)(Furian 2006)(Kalso 2004)
  - Functional status is closely linked to the ability to work.
  - Opioids are also more effective at improving pain and functional status than NSAIDs (Kalso 2004)(ref: Furian 2006)

Information Extracted from Guidelines and Reviews: High-Risk Prescriptions

- Types of drugs and formulations:
  - Should not be prescribed in WC: immediate release fentanyl (addictive) and meperidine (toxic)
  - If used at all, should be started carefully: methadone (overdose risk high, body processes it in complex manner)
- Maximum daily dose:
  - Guidelines agree ≥200 mg morphine equiv / day warrants scrutiny
  - Studies published in 2011 suggest threshold may be lower
- Drug-drug interactions:
  - Benzodiazepines are common and risky, but there are many others that increase the risk of overdose as well
Information Extracted from Guidelines and Reviews: Mitigating Risks of Chronic Opioids

- Guidelines agree that written treatment agreements are a good idea; data are limited but favorable
- Standardized risk assessment questions can help identify patients at higher risk for misuse or abuse
- Urinary drug testing is generally useful when coupled with a substance use history, but users should prepare for two challenges, among others
  - Common screening tests can miss frequently used medications
  - All tests have false positives; therefore, routine screening of many lower-risk patients will lead to large numbers of false positives. This issue is addressed by focusing on higher-risk patients

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Conclusion

- Opioid-related substance abuse and overdoses are growing problems, partly due to prescribing practices
- Both issues can lead to poor outcomes and increase costs in workers’ compensation settings
- New standards of care and policies are emerging to address these issues
- Using administrative data to identify high-risk prescriptions may be feasible
- There are a recent relatively high quality guidelines on opioid treatment; one of these could be evaluated further for implementation in the California WC system