Improving acute pain care with multimodal analgesia

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Discussion topics

Section 1 | Opioids and the state of acute pain management
Section 2 | Multimodal analgesia for balanced acute pain management
Section 3 | Pain Stewardship Program™ overview
Section 1
Opioids and the state of acute pain management
Opioids and the state of acute pain management

Acute pain care remains suboptimal

Opioids are historically used as the foundational agents in acute pain management protocols\textsuperscript{1,2}

According to patient surveys, postoperative pain continues to be undermanaged\textsuperscript{3-5}

- Of patients reporting postoperative pain in multiple independent, random patient surveys published from 1995 to 2014\textsuperscript{3-5}:
  
  \begin{itemize}
    \item 44\% to 51\% reported moderate pain
    \item 8\% to 22\% reported extreme pain
  \end{itemize}

- Results from the survey published in 2014 also demonstrated that, when given a choice between narcotic and non-narcotic pain medications, 57\% of patients preferred non-narcotics\textsuperscript{5}


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Opioids may be associated with adverse drug events, including1-5:

<table>
<thead>
<tr>
<th>Common</th>
<th>Clinically significant</th>
<th>Life threatening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation</td>
<td>Bowel obstruction</td>
<td>Airway obstruction</td>
</tr>
<tr>
<td>Dizziness</td>
<td>Confusion</td>
<td>Respiratory arrest</td>
</tr>
<tr>
<td>Nausea</td>
<td>Dysphoria</td>
<td>Respiratory depression</td>
</tr>
<tr>
<td>Pruritus</td>
<td>Ileus</td>
<td></td>
</tr>
<tr>
<td>Sedation</td>
<td>Vomiting</td>
<td></td>
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<tr>
<td>Urinary retention</td>
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</tbody>
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Opioids and the state of acute pain management

Impact of ORADEs on length of stay and cost

**ORADEs can impact length of stay**
- In a retrospective medical record review of 402 patients who received opioids after orthopedic surgery, a significant relationship was observed between incidence of opioid-related adverse drug events (ORADEs) and increased length of stay (LOS)\(^1\)

**ORADEs can also significantly increase overall cost**
- In a second retrospective analysis of a large, national hospital database, ORADEs significantly increased not only LOS, but also overall cost of certain surgical procedures, including open colectomy, laparoscopic colectomy, laparoscopic cholecystectomy, total abdominal hysterectomy, and hip replacement\(^2\)

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\(^a\) P<0.001.


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### Addressing the challenges

More than 70 million patients per year receive opioids in a hospital or clinic following surgery\(^1,2\)
- Today, numerous state and federal programs, as well as hospital associations, support efforts to decrease opioid abuse and dependence\(^3-7\)

In 2012, The Joint Commission issued a *Sentinel Event Alert* calling for the safe use of opioids in hospitals to reduce the risk of adverse events\(^8\)
- Underscored “the need for the judicious and safe prescribing and administration of opioids” and provided measures to help “avoid the unintended consequences of opioid use among hospital inpatients”\(^8\)
- Recommended the combination of both non-pharmacologic and pharmacologic approaches for effective pain management\(^8\)

<table>
<thead>
<tr>
<th>Non-pharmacologic therapies:</th>
<th>Non-opioid pharmacologic therapies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Acupuncture</td>
<td>- Acetaminophen</td>
</tr>
<tr>
<td>- Ice</td>
<td>- Anticonvulsants</td>
</tr>
<tr>
<td>- Manipulation or massage</td>
<td>- Muscle relaxants</td>
</tr>
<tr>
<td>- Music therapy</td>
<td>- NSAIDs</td>
</tr>
<tr>
<td>- Physical therapy</td>
<td></td>
</tr>
</tbody>
</table>

\[\textbf{Goal}\]

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**References:**

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Section 2
Multimodal analgesia for balanced acute pain management
Multimodal analgesia can help optimize pain management with less opioids

- Multimodal analgesia (MMA) combines 2 or more analgesic agents or techniques that use different mechanisms to provide better pain relief with less opioids.

MMA is believed to contribute to:

- **Reduced doses of opioids**
- **Reduced risk of ORADEs**
- **Shorter length of stay**
- **Less pain during rest and activity**
- **Improved patient satisfaction**

References:

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Intervening at various points along the pain pathway

Perception of pain involves both the peripheral and central nervous systems, and different types of analgesics can intervene at different levels of this signal transduction:

- Cortical level (opioids, α₂-agonists, acetaminophen, NMDA antagonists)
- Spinal cord level (local anesthetics, opioids, α₂-agonists, NMDA antagonists)
- Peripheral level (local anesthetics, NSAIDs, COXIBs)

By combining different analgesics, MMA can optimize efficacy with a lower dose of each respective agent and may also reduce the risk for dose-related adverse events.

References:

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When used in combination with opioids, non-opioid treatments may reduce the dose of opioids required to effectively manage pain\(^1\)

Schedule non-opioid analgesics first, adding opioids for moderate to severe pain\(^2\)\(^-\)\(^4\)


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Multimodal analgesia for balanced acute pain management

Organizations recommending an MMA approach

- Agency for Healthcare Research and Quality
- American Academy of Orthopaedic Surgeons
- American College of Surgeons
- American Geriatrics Society
- American Heart Association
- American Society for Pain Management Nursing
- American Society of Anesthesiologists
- American Society of PeriAnesthesia Nurses
- Enhanced Recovery After Surgery Society
- Society of Critical Care Medicine
- Society of Hospital Medicine
- The Joint Commission

MMA, multimodal analgesia.

References:

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Section 3
Pain Stewardship Program overview
The mission of the Pain Stewardship Program (PSP) is to educate hospitals on MMA-based acute pain care to support improvements in:

| Opioid use | Length of stay | Satisfaction with treatment |

PSP provides a variety of **educational resources** for acute pain management.

MMA, multimodal analgesia.

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Developed in collaboration with a multidisciplinary team of expert advisors, these educational resources describe how to:

- **BUILD** internal consensus and buy-in throughout the institution
- **IMPLEMENT** recommendations in acute pain care
- **EDUCATE** patients about what to expect with acute pain
- **ASSESS** patients’ acute pain and evaluate clinical risk factors

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Pain Stewardship Program overview

Educational materials and resources

**Acute pain management overview**
Provides clinical staff with an overview of acute pain management in the hospital environment, the need for quality improvement in pain care, the role of MMA, and a compilation of published analgesic recommendations.

**Acute pain management pocket reference**
A compact reference guide designed to help clinical staff assess the presence and severity of acute pain and identify treatment-related risk factors.

**Patient education brochure**
Encourages patients to be active participants in managing perioperative acute pain by establishing realistic expectations for acute pain control and helping them understand the role of MMA.

**Speaker resources**
Presentations to provide an overview of the Pain Stewardship Program and to educate hospital stakeholders and decision-makers about the risks of ORADEs and the role of MMA.

MMA, multimodal analgesia; ORADE, opioid-related adverse drug events.
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The following recommendations from the Society of Hospital Medicine provide a basic framework for implementing a quality initiative:\(^1\):

1. Form an interdisciplinary team with shared objectives.
2. Secure institutional stakeholder support to advance the program.
3. Assess existing acute pain management protocols.
5. Identify performance metrics and develop a data collection plan.
6. Implement and continually monitor impact of pain management protocols.


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