An Answer to the Opioid Crisis: Coordinated Pain Management

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No Financial Disclosures
Pain is made up of 2 parts:

- A sensory experience associated with physical manipulation
- An emotional response of distress and anxiety related to the sensory information
What do we mean by “chronic pain”?
Chronic pain is a public health challenge

- Pain
  - Demoralization
    - Hopelessness
    - Disability
    - Social isolation
    - Opioid/benzodiazepine dependence
    - Insomnia
    - Risk behavior
    - Poor adherence
  - Fatigue
  - Anhedonia
  - Apathy
Overdose deaths rising despite reduction in opioid prescriptions

49,000 Americans died from opioid overdoses in 2017

https://www.wonder.cdc.gov

https://www.fda.gov
State of chronic pain management today

Segmented (and poorly reimbursed) care associated with worse outcomes

- functional disability in chronic pain increases medical costs
- patients on chronic opioid therapy (COT) utilize greater healthcare resources
- specialty referrals made when patients do not respond to medical treatment or surgery
  - reinforces the belief that pain is not real
  - reduces availability of behavioral-based interventions

Johns Hopkins Hospital (JHH) Acute Pain Service recognized a problem…

- approximately 100 million Americans undergo inpatient or elective ambulatory surgery annually
  - over 80% receive an opioid prescription afterward

- chronic post-surgical pain is a common (10-50%) complication after surgery

- pain is the #1 reason for post surgery readmissions at JHH
  - 60,126 surgical cases at JHH in fiscal year 2016
    - 10,122 complex cases (Level 1 or 2)

- Perioperative Pain management Program (PPP) will provide our patients and surgeons with continuity of care
  - manage acute on chronic pain
  - address the opioid epidemic in the surgical population
Value Proposition of JHH Integration

- reduce unplanned post-surgical adverse events related to pain
- reduce unplanned hospital admission or readmissions due to uncontrolled pain
- reduce inpatient opioid utilization
- reduce outpatient opioid utilization after recovery
- meaningfully contribute to the opioid crisis
Johns Hopkins Perioperative Pain Program (PPP)

Multidisciplinary pain management provided across continuum of perioperative period

<table>
<thead>
<tr>
<th>(1) Outpatient period 1-4 weeks before surgery</th>
<th>(2) Hospitalization immediately after surgery</th>
<th>(3) Outpatient follow-up up to 6 months after surgery</th>
</tr>
</thead>
</table>

Figure 1. Concept Flow of Perioperative Pain Program (PPP).

**PPP consults on surgical patients who are:**

- Currently prescribed any opioid > 1 month
- On opioid maintenance therapy
- Currently using illicit opioids
- Have a history of opioid use disorder
- Opioid-naïve patients at risk of long-term postoperative opioid use (i.e., due to trauma or extensive surgical procedures)

*Speed* and *Hanna* *Am J Med Qual* 2018
## Continuity of care in the Perioperative Pain Program (PPP)

<table>
<thead>
<tr>
<th>1. Preoperative</th>
<th>Referral</th>
<th>Consultation</th>
<th>Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surgical Team, Primary Care, Center for Perioperative Optimization, other providers</td>
<td>Conduct medical and psychiatric history, pain education, and reduce opioid dose by 10-25%</td>
<td>Update surgical team, primary care, opioid maintenance programs, family</td>
</tr>
<tr>
<td>2. Postoperative Hospitalization</td>
<td>Acute Pain Service proactively consults on PPP patients</td>
<td>Provide opioid and non-opioid pain management recommendations to surgical team</td>
<td>Prescribed opioids at discharge limited to days until PPP follow-up</td>
</tr>
<tr>
<td>3. Post-discharge Follow-up</td>
<td>Follow up PPP appointments offered every 1-4 weeks as needed</td>
<td>Initiate opioid weaning; Psychiatric care embedded in clinic, when needed for more complex cases</td>
<td>Referral to intensive outpatient substance use, physical medicine and rehab, chronic pain procedures</td>
</tr>
</tbody>
</table>

Modified from Speed* and Hanna* Am J Med Qual 2018
Anesthesiologists
Use regional anesthesia and multimodal analgesia to reduce:
• pain scores
• post-operative opioid requirements
• unplanned admissions for pain control

Psychiatrists
Treat underlying psychiatric disease*, monitor substance abuse*, guide towards rehabilitation and focus on recovery
• pharmacologic and psychological treatments better than placebo

*risks for poor outcomes

Multimodal therapy

Antidepressants
Opioids
Acetaminophen
Anticonvulsants
NMDA antagonists

Opioids
Alpha₂ agonists
Local Anesthetics

Alpha₂ agonists
Anti-inflammatory drugs

Anti-inflammatory drugs
Topical Anesthetics

Speed* and Hanna* Am J Med Qual 2018
### Perioperative Pain Program (PPP): 2017

#### Patients

<table>
<thead>
<tr>
<th>Patients</th>
<th>(N = 61)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Female (N)</td>
<td>48% (29)</td>
</tr>
<tr>
<td>Age in years (SD)</td>
<td>46 (15)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>34</td>
</tr>
<tr>
<td>Asian American</td>
<td>2</td>
</tr>
<tr>
<td>African American</td>
<td>20</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
<tr>
<td>% Chronic opioids (N)</td>
<td>92% (56)</td>
</tr>
<tr>
<td>Years on opioids (SD)</td>
<td>5.9 (6.8)</td>
</tr>
<tr>
<td>% Methadone (N)</td>
<td>6% (4)</td>
</tr>
<tr>
<td>MEQ (SD)</td>
<td>206 (266)</td>
</tr>
<tr>
<td>BPI (SD)</td>
<td>6.6 (2)</td>
</tr>
<tr>
<td>MPQ - VAS (SD)</td>
<td>6.9 (2.5)</td>
</tr>
<tr>
<td>SF-12 (PCS) (SD)</td>
<td>27.4 (8)</td>
</tr>
<tr>
<td>SF-12 (MCS) (SD)</td>
<td>43.3 (13.1)</td>
</tr>
</tbody>
</table>

#### Type of Surgery

<table>
<thead>
<tr>
<th>Type of Surgery</th>
<th>% Patients (N = 61)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spine</td>
<td>28% (17)</td>
</tr>
<tr>
<td>GI</td>
<td>17% (10)</td>
</tr>
<tr>
<td>Trauma</td>
<td>13% (8)</td>
</tr>
<tr>
<td>General</td>
<td>11% (7)</td>
</tr>
<tr>
<td>Orthopedic</td>
<td>11% (7)</td>
</tr>
<tr>
<td>Thoracic</td>
<td>7% (4)</td>
</tr>
<tr>
<td>Other</td>
<td>13% (8)</td>
</tr>
</tbody>
</table>

Other: Plastics, Otolaryngology, Cardiothoracic, Vascular, Urology

Approximately 25% of consults are referred to psychiatry

Speed* and Shechter* *Am J Med Qual 2019*
opioid utilization (morphine equivalents)

pain interference

physical function

Speed* and Shechter*
Am J Med Qual 2019
PPP Outcomes

- New Patients = 503 patients
- < 5% referrals have declined care
- 4.6 ± 2.7 PPP visits/patient
- Successful discharges (N = 30 out of 61): 109 ± 59 days after surgery
- Reduced length of hospital stay (unpublished data)
  - FY18 JHH surgical length of stay, 6.5 days (treatment as usual) vs 5.8 days (PPP)
  - for spine surgery: 7.6 days (treatment as usual) vs 5.2 days (PPP)
- PPP reduced unplanned hospital admissions due to uncontrolled pain (<1%) and reduced ED Visits (<0.7%)
Mr. TS

- 41 year old presents to PPP after 3 surgeries (1\textsuperscript{st} and 2\textsuperscript{nd} finger amputation) after work-related injury
- PMH: Opioid Use Disorder, currently in sustained remission for past 7 years. Nicotine use.
- FHx: Father with opioid use disorder
- Presents to clinic on PO oxycodone (60 MME)
- **He successfully tapered opioids to discontinuation**
- He continues to have neuropathic pain and sleeping difficulties
  - Add amitriptyline 10mg HS\textarrows 75mg HS
  - Regular follow-up (2-3 weeks)
- **Earned his GED**
- Walks dog/PT
- Resume care with PMD
- **Continue relapse prevention**
Conclusions

Perioperative Pain Program provides efficacious coordinated healthcare

Add value to:

1. Individual: reduce pain and improve functioning
2. Healthcare: reduce costs and utilization in short- and long-term
3. Society: mitigate opioid risk
PPP Clinic - Acknowledgements

https://www.youtube.com/watch?v=azmZ_6setcY

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