Learning While Sprinting: A One-Year Retrospective from the NOHARM Pragmatic Trial

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NOHARM

Non-pharmacological

Options in post-operative

Hospital-based

And

Rehabilitation pain

Management
NOHARM: The Idea

• Opioids are necessary but insufficient in post-surgical care
• Guidelines recommend non-pharm pain care (NPPC)
• No studies showing how to make NPPC more viable
• EHRs can help elicit and advance patients’ NPPC preferences
• Goal: test bundled pragmatic intervention w/in EHRs
  • Portal-based conversation guide
  • Clinician-directed decision support
• Improve pain & function as post-op opioid prescribing declines
• Testing usual care vs. EHR-facilitated guideline-based care
Non-Pharm Pain Care – Validated for Post-Op Pain Management

**Movement**
- Walking
- Yoga
- Tai Chi

**Physical**
- Acupuncture
- Massage
- Cold or Heat
- TENS

**Relaxation**
- Meditation
- Breathing
- Music
- Guided Imagery
- Muscle Relaxation
- Aromatherapy

Question: Can these help preserve function, mitigate pain, and maybe reduce opioid consumption?
NOHARM

• NIA/NICHD UG3 planning grant
• Intervention: Epic NPPC bundle
  • Conversation guide
  • Decision support
• Outcomes: pain, function, anxiety, opioid use
• Eventual Trial: Stepped-wedge, Cluster-randomized
  • Rigorous pre-post design
• 2019-2020 Pilot Year
NOHARM Stepped Wedge Design

Tranche 1
Rochester
Cardiac, C-section
Florida
Ortho
Eau Claire
Ortho, Colorectal, Gyn, C-section
La Crosse
Gyn, C-section

Tranche 2
Rochester
Ortho, Gyn, Lung
Arizona
Lung, Cardiac
Mankato
Colorectal

Tranche 3
Rochester
Colorectal
Arizona
Colorectal, Transplant, Gyn
Florida
Transplant

Tranche 4
Florida
Colorectal, Gyn, Lung, Cardiac
Eau Claire
Lung, Cardiac
Mankato
C-section

Tranche 5
Rochester
Transplant
Arizona
Ortho
Mankato
Ortho
La Crosse
Ortho, Colorectal
# NOHARM Cluster “go live” schedule

<table>
<thead>
<tr>
<th>Tranche 1</th>
<th>Tranche 2</th>
<th>Tranche 3</th>
<th>Tranche 4</th>
<th>Tranche 5</th>
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Our Year In Hindsight

• Intervention Prototyping & Refinement
  • Epic Portal CG
  • Epic CDS
  • Self-management education & support

• Organizational Navigation

• Stakeholder Training & Engagement

• Piloting* & Take Homes

• Next Steps

* COVID-modified UG3
Choosing Surgery
Ambulatory care team members prepare patients to engage with the NOHARM intervention and a portal-based decision tool.

Pre-operative Planning
Patients review non-pharmacologic pain management options and inform care team of selections via portal-based decision tool.

The Inpatient Stay
Inpatient staff notice, acknowledge, discuss, and support provision of non-pharmacologic pain management modalities.

Post-operative Recovery
Patients continue to access and use non-pharmacologic pain management resources and modalities.
Intervention Prototyping & Refinement: Epic Portal CG

- CG content
- Epic portal functionality
- CG design
- Assignment logic & timing
1. Pain is normal, requires a plan

**Pain and Surgery**

Pain is a normal part of surgery

It is normal to experience some pain and discomfort after surgery.

Medicines and other techniques can usually reduce your pain to a tolerable level.
2. Opioids, blocks, PCAs, etc. are a short term fix, not long term

**Limiting the time on opioid medicines**

For most people, it is best to limit the amount of time that they take opioid medications.

This helps avoid complications including constipation, dizziness, confusion, and possible addiction to the medications.
CG content

3. Safer and beneficial tools exist

Healing after surgery

Pain management techniques in addition to medications

Techniques for managing pain
CG content

4. Start your plan, select modalities
# Epic portal functionality

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<th>Questionnaire</th>
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<tr>
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CG design

• Portal message with attached CG link
• CG is a **very large** questionnaire with HTML
CG design

Healing after surgery

Physical techniques to consider
- Acupressure
- Acupuncture
- Massage
- Cold or Heat
- TENS

Select the physical techniques that you'd like to use

Movement techniques to consider
- Walking
- Yoga
- Tai Chi

Select the movement techniques that you'd like to use

Relaxation techniques to consider
- Breathing
- Muscle relaxation
- Meditation
- Imagery
- Music
- Aromatherapy

Select the relaxation techniques that you'd like to use
CG design

- Patient must “submit” their CG questionnaire
Assignment logic & timing

• Electronic event trigger
  • Elective surgeries → order
  • Unplanned (day of) → Post-op CPT code

• Assignment algorithm
  • Site
  • Department
  • Epic surgical ORP code
  • Provider

• Procedure/site-specific tailoring of content
Epic CDS

- Mapped clinical workflows of key stakeholders
- Emphasis on inpatient nursing and PT/OT
Matching Epic functionalities
Matching Epic functionalities

• Admission Navigator
Matching Epic functionalities

• Admission Navigator
• Acknowledge Orders
Matching Epic functionalities

- Admission Navigator
- Acknowledge Orders

- Best Practice Advisory
Matching Epic functionalities

• Admission Navigator
• Acknowledge Orders

• Best Practice Advisory
• Educational Activity
Matching Epic functionalities

- After Visit Summary

Aromatherapy

Getting started.

Essential oils can be inhaled or applied to your skin. Do not ingest them. If you have not received essential oils in the hospital, you can purchase them at a health food or grocery store, or on-line. Lavender, mandarin, and lemon are most commonly used for stress reduction. Eucalyptus, peppermint, and rosemary essential oils can help reduce pain.

If you buy oils, they should be sold in a dark bottle with a stopper. The label should include information on the country of origin, Latin name of the parent plant, and method of extraction. Also look for the USDA certified organic label and assurance of 100% pure essential oil with no other ingredients.

An easy way to get started is to apply the oil to a cotton ball and inhale the vapor. The cotton ball can be kept in a sealable plastic bag and reused. You can also mix oils in a spray bottle with water and mist over furniture, carpet, or linens. Diffusers spread essential oil vapors throughout at entire room and can be purchased for around $25.
Modifiable components with EHR logic:
Provider, procedure, site, etc.

Educate (TV) and support patient practice of Tai Chi for pain management

- **Frequency:** Until discontinued
- **For:** [ ] Hours [ ] Days [ ] Weeks
- **Starting:** 3/9/2020 [ ] Today [ ] Tomorrow At: 1100
- **Starting:** Today 1100 Until Specified
- **Scheduled Times:**
  - 03/09/20 1100

- **Priority:** Routine
- **Comments:**
  - Restrictions: Observe post-operative movement precautions when performing Tai Chi.
  - Instruction: Patient Education is available through Mayo TV or tablet. Encourage viewing and use of modality.
  - Site specific consideration: Place orders if additional support resources are available to the patient while in the hospital.
  - Other educational resources: Print materials or DVD may be available

[Next Required] Link Order

[Accept] [Cancel]
Physician and APP roles in NOHARM

• Heterogeneous pre- and post-operative cadence

• Pre-hospital
  • Endorse NPPC and CG use

• Hospital

• Post-hospital
Physician and APP roles in NOHARM

• Heterogeneous pre- and post-operative cadence

• Pre-hospital
  • Endorse NPPC and CG use

• Hospital

• Post-hospital
  • Promote NPPC if refill requested
Self-management education & support

• Modality-specific material
• Website
• DVD & print versions

Tai Chi

Gentle Movements Tai Chi Qigong

This video leads you through a series of easy postures and a brief meditation performed while seated. Do not perform these movements after neck or shoulder surgery until you are cleared by your surgical team. Stop any movements that cause discomfort.

Tai chi: Discover the many possible health benefits
Organizational Navigation

- Committees
- Clinical Practice
- Epic
- Site & Divisional
- IRB
- Collaboratory (Biostat & Design, Eth & Reg, Steering)
Stakeholder Training & Engagement

- MyLearning training
- Practice supports
- JIT
“Keep an eye out...”
The NOHARM Rack Card points patients in the right direction

HEALING AFTER SURGERY: MANAGING PAIN

Step 1: Register for the portal
The patient portal (Patient Online Services) allows you to be actively involved in planning how to manage your pain post-surgery. By logging on to the portal, you can learn more about different pain management strategies, try them out on your own, and indicate your preferences for your hospital stay. For assistance setting up a new patient portal account, you can call Mayo Clinic customer assistance at 1-877-558-0396 or you can visit window 17 or 13 on the ground floor of the Gonda building at Mayo Clinic’s Rochester site.

Step 2: Learn about pain management options
Soon after your surgery is scheduled, you will receive a questionnaire called “Healing After Surgery” in your patient portal inbox. This questionnaire is different from other patient questionnaires. It includes information about different pain management options and guidance on how to practice them prior to your surgery.

Step 3: Choose pain management options
After learning about the different types of pain management options available to you, select the strategies that you are interested in trying during your hospital stay and after you return home. Your selections will then be shared with your care team, so that they can be used to assist with managing your pain during your recovery.

Step 4: Use pain management option at home
Once you are home and recovering from your surgery, you will be able to access videos and other resources that will help you in using your preferred pain management approaches. Just go to healingaftersurgery.com. Your care team may also follow up with you to ask how things are going and if you need any additional support.
Pilot*

- Prospective Pilot (RST & MCHS)
  - Neurosurgery spine procedures
    - Integrated w/in hospital and post-op workflows
  - Turned CG&CDS on for spine procedures
- Assessed experience
  - CG access and usability
  - CDS function
  - Outcome completion rates
  - Debrief with teams

* COVID-modified UG3
COVID-modified UG3

• Restrictions
  • Mayo Clinic banned air travel
    • Precluded on-the-ground support at FL and AZ
  • Elective surgeries cancelled from March 15\textsuperscript{th} to May 12\textsuperscript{th}

• Modifications
  • Narrowed the site inclusion to Rochester, MN; Eau Claire, WI; and Mankato, MN
  • Manual vs. algorithmic CG assignment
  • Compressed outcome collection interval
Pilot*

- Participants, N=24
  - 17 from Rochester, 7 from MCHS
  - 42% female

- NPPC selection
  - 92% via portal prior to hospitalization
  - Modalities selected, mean 3.8, range 1-5

- CDS – BPA misfires, otherwise OK

- Outcomes – 92% complete

* COVID-modified UG3
Pilot Take Homes

- Sequence of huddles with each cluster prior to “go live”
  - Pre- and post- hospitalization encounter sequence & roles
  - CDS specification
- Importance of JIT
- Need on-site support for TENS & exercise
- Work around for EHR portal non-users
- Accommodate patients discharged to PAC
Next Steps

• Refine role specifications for on-site support
• Expand self-management education
• Trouble shoot CDS, esp. BPAs
• Develop print workaround for portal non-users
  • Can be automated
• Initiate pre- “go live” Tranche 1 cluster engagement
Gratitude

• Mayo Clinic Team & Leadership
• Collaboratory
• NIA/NICHD partners
Thank You

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