MICHIGAN SPINE SURGERY IMPROVEMENT COLLABORATIVE (MSSIC)

WORKING TOGETHER FOR BETTER PATIENT OUTCOMES

MSSIC ERAS PATHWAY GUIDELINES

2021 AND BEYOND
Reassurance...

- The following information is provided to give you a “heads up” for the future 2021 & 2022 performance measures.
- You are not expected to have the ERAS pathway, order sets, and patient education developed and implemented at the start of the 2021 measurement time frame (10/1/20).
- **2021 is Phase 1** – This is when you develop and fine tune these things to assure that you have them submitted and in place by the end of the measurement time frame (9/30/21).
MSSIC & ERAS Timeline...

WHERE Are We Going?

- **2019** - ERAS for Spine was introduced at the August MSSIC meeting
- **2020** - Time to research, strategize, and align with any current ERAS pathways that may already exist at each site. Identify an ERAS for Spine Surgery team.
- **2021** Performance Index - Phase 1: Planning and development
- **2022** Performance Index - Phase 2 Full ERAS Performance Measures
MSSIC ERAS Goals – Short-term

• By the end of 2021, all MSSIC sites will have ERAS for spine surgery protocols, order sets, and patient education developed and implemented
• By 2022, sites will demonstrate at least 80% compliance with the implementation of the above
• In both 2021 & 2022, demonstrate improvement in one or more of the following (more details to come):
  – Patient satisfaction, return to work, PROMIS, or pain scores
  – Post-op opioid use in opioid-naïve patients, length of stay, readmission, SSI, or mortality
MSSIC ERAS Goals – Long-term

• State-wide and national dissemination of MSSIC ERAS protocol
• Related publication in peer-reviewed literature
• Michigan is the destination for spine surgery in the nation
Basics of the MSSIC ERAS Pathway
• Two required components of each of the three phases of care
• The remainder of the ERAS protocol will be up to MSSIC sites
• MSSIC will:
  – Clearly outline what is required
  – Provide suggestions for other components, based upon literature findings and other currently existing spine surgery pathways
  – Post tools and resources on MSSIC website (mssic.org) to support sites in the development of their own ERAS pathways
Time Frames for the Three Phases of Care

**Pre-op**
- Decision for surgery to night before surgery

**Intra-op**
- Morning of surgery, intra-op, and PACU

**Post-op**
- Leave PACU, remainder of time at the hospital, to post-discharge
## MSSIC ERAS Elements – “The Must-Haves”

<table>
<thead>
<tr>
<th>Pre-operative</th>
<th>Intra-operative</th>
<th>Post-operative</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Formal, pre-surgical patient education - counseling</td>
<td>• Limited fasting, carbohydrate drink up to 2 hrs before surgery</td>
<td>• Ambulation w/in 8 hrs of surgery stop time</td>
</tr>
<tr>
<td>• Risk assessment – intervention and optimization</td>
<td>• Opioid sparing, multimodal analgesia that continues through discharge</td>
<td>• Formal discharge education that includes incision care and mobility recommendations</td>
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</table>

*MICHIGAN SPINE SURGERY IMPROVEMENT COLLABORATIVE*
## Pre-operative Phase

<table>
<thead>
<tr>
<th>Mandatory</th>
<th>Suggested</th>
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<tbody>
<tr>
<td><strong>Formal Presurgical Patient Education &amp; Counseling</strong></td>
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<tr>
<td>Implement some form of Risk Assessment with Interventions/Optimization</td>
<td><strong>Risk assessment Examples:</strong></td>
</tr>
<tr>
<td>• Sites have some flexibility here to use risk-assessment and mitigation tools of their choice</td>
<td>• Diabetes</td>
</tr>
<tr>
<td>• MSSIC will provide example tools on mssic.org</td>
<td>• BMI</td>
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<td></td>
<td>• Frailty</td>
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<tr>
<td></td>
<td>• Anemia</td>
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<td></td>
<td>• Nutritional assessment (albumin)</td>
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<tr>
<td></td>
<td>• Smoking cessation/fasting</td>
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<td></td>
<td>• Alcohol use</td>
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<td>• Opioid use</td>
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</table>
Pre-operative Phase

- Formal patient education - **Mandatory**
  - Comprehensive education results in well-informed patients that are more likely to have a better post-operative outcome and realistic expectations
  - Formal, patient-centered approach that is consistent within the hospital, offered to all MSSIC patients, and **does not vary from surgeon to surgeon**
  - Facilitates dynamic patient participation throughout his/her care
In Essence...

• There is a core content of education that every patient who has spine surgery at your hospital receives
• It doesn’t matter if their surgeon is Dr. Brown, Dr. Smith, or Dr. Jones...
• It can be delivered in a spine surgery class (in person, virtual, or computer modules), or in the spine surgery clinic
• Patient participation must be documented somewhere in the EMR for the abstractor to find and capture in the registry
Pre-operative Phase

• Risk assessments with optimization - Mandatory
  – Site flexibility, but will have to implement some kind of risk assessments with interventions
  – MSSIC has provided examples and tools: mssic.org
    • Example: American College of Surgeons Quality Program...
EAT WELL
It is important to eat healthy foods before surgery. Tell your doctor if you have trouble eating or if you have not been very hungry. Also tell your doctor if you have lost weight without trying or cannot eat at all. Your doctor may want you to see a dietitian, who can help you work out an eating plan. A lab test called an "albumin" level may be ordered to see if you are at extra risk for problems after surgery because of your nutrition or for other reasons.

QUIT SMOKING
Smoking increases the risk for many problems after surgery. It can:
- Make it hard for you to breathe
- Make an infection in your wound (incision) more likely
- Increase your chance of having a heart attack
Ask your doctor about how to quit smoking. Quitting will not only reduce these risks but also improve your overall health and even add years to your life.

BLOOD SUGAR CONTROL
If you have diabetes, you know how important good blood sugar control is. Your doctor needs to know what your recent blood sugar test results have been. On the day of your surgery, your doctor should check your blood sugar before your operation.

Having surgery puts stress on your body, and stress can affect your blood sugar level. Blood sugar that is too high or too low can cause serious problems. Keeping blood sugar in control before, during, and after surgery will reduce your risk of infection in your incision and will help you heal better.

Even if you haven’t been told you have diabetes, your doctor may want to check your blood sugar. Many people have high blood sugar and don’t know it.

MEDICINES
Your doctor needs to know what medicines, over-the-counter drugs and supplements, and herbal remedies you are taking. Some of these can increase your risk of bleeding. Your doctor will tell you which ones to stop taking and when to stop them before surgery.

Some medicines should not be stopped. If you are taking one of these, your doctor will make sure the hospital staff knows so that you get the right medicines before and after surgery.

BLOOD SUGAR Control Checklist

ALL PATIENTS
- Does the patient have a prior diagnosis of diabetes?
  - Yes
  - No
- Patient’s age > 45?
  - Yes
  - No
- Patient’s BMI U 30?
  - Yes
  - No

If YES to any of the questions:
- Check fasting blood sugar level on the morning of surgery prior to OR case
- If fasting blood glucose level > 200, then recommend use of insulin drip during OR case

DIABETIC PATIENTS
- Degree of blood sugar control
- Hemoglobin A1c level > 7.0%?
  - Yes
  - No
- Has any fingerstick reading in the past two weeks been > 200?
  - Yes
  - No

If YES or UNKNOWN:
- Referral for diabetes management

DIABETIC PATIENTS
- Perioperative management: Will the patient be NPO after midnight?
  - Yes
  - No
- Is the patient having bowel prep?
  - Yes
  - No

If YES, while NPO and during prep:
- Stop all diabet ic medications except for pioglitazone (Actos)
- Reduce (Lantus) by 50%
- Check blood sugars frequently and use sliding scale as needed

IMPORTANT NOTICE
These sample checklists are provided for informational purposes only and should NOT be used in the care of a patient outside of a comprehensive preoperative program such as Strong for Surgery. Patients should not rely on information on this checklist as an alternative to medical advice from a doctor or other professional healthcare provider. The logos on the checklists are registered trademarks of Strong for Surgery and SCCAP. To find out how you can start using the Strong for Surgery checklist in your clinic, please contact us at strongforsurgery@fccc.org.
Example of Risk Assessments - Cleveland Clinic

- **Pt smokes**
  - Surgeon counsels patient on smoking cessation

- **Known Diabetes Mellitus or BMI > 35**
  - Assess HbA1c
    - HbA1c > 8 refer to Endocrinology
    - Surgery > 2 weeks after endocrine consult

- **Anemic or Hgb < 11.5**
  - Refer to blood management
    - Iron (oral and infusion) and EPO administered
    - Surgery > 2 weeks after consult

- **BMI > 30**
  - Refer to bariatrics
    - BMI > 40
    - Recommend avoiding elective surgery

- **> 75 yo**
  - Refer to geriatrics for frailty assessment
    - Surgery > 6 weeks
    - Follow as needed (e.g. delirium)

**FIG. 2.** Preoperative benchmarks for ERAS. EPO = erythropoietin; Hgb = hemoglobin; Pt = patient.
# Intra-operative Phase

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<tr>
<td>Limited fasting and Carbohydrate beverage up to 2 hours before surgery</td>
<td>Rare Foley catheter use</td>
</tr>
<tr>
<td></td>
<td>• No placement unless surgery &gt; 4 hrs.</td>
</tr>
<tr>
<td>Opioid-sparing, multimodal analgesia</td>
<td>Minimize blood loss</td>
</tr>
<tr>
<td>• Evidenced by order set implementation</td>
<td>• MIS, consider TXA</td>
</tr>
<tr>
<td>• <strong>Starts here, goes through discharge</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Normovolemicia (goal directed fluid mgmt.)</td>
</tr>
<tr>
<td></td>
<td>Normothermia</td>
</tr>
<tr>
<td></td>
<td>Normoglycemia</td>
</tr>
<tr>
<td></td>
<td>Nausea Prevention</td>
</tr>
<tr>
<td></td>
<td>If foley placed, out in PACU if possible</td>
</tr>
</tbody>
</table>
Penn Neurosurgery ERAS Pain Management Protocol

- Set realistic expectations and provide patient education about achieving optimal analgesia

**Education**

**IV/Oral Analgesia**
- Gabapentin
- NSAIDs
- Opioids
- Acetaminophen

**Local Anesthetic**
- Bupivacaine

**Other Adjuncts**
- Dexamethasone
- Muscle relaxers

**Rescue Analgesia**
- IV Opioids
FIG. 3. Principles of intraoperative blood and fluid management.
# Post-op Phase

<table>
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<tr>
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<tbody>
<tr>
<td>Early Ambulation – w/in 8 hrs. of surgery stop time</td>
<td>Early Nutrition – back to baseline diet</td>
</tr>
<tr>
<td></td>
<td>• Meals out of bed in chair</td>
</tr>
<tr>
<td>Formal education at discharge regarding:</td>
<td>Post-discharge call with patient within 7 days</td>
</tr>
<tr>
<td>• Incision care</td>
<td>• Pain, concerns, status of incision, clarification of post-op instructions, etc.</td>
</tr>
<tr>
<td>• Mobility recommendations</td>
<td></td>
</tr>
<tr>
<td><em>(Continuation of Opioid-sparing, multimodal analgesia that was started in intraoperative phase)</em></td>
<td>Post-discharge clinic visit within 14 days</td>
</tr>
<tr>
<td></td>
<td>• Surgeon, mid-level, or RN</td>
</tr>
</tbody>
</table>
How will MSSIC Sites be Measured in **Phase 1**?

- **Demonstrate Site/Team Engagement** - submit quarterly meeting minutes supporting discussion and establishment of ERAS.

- **By the end of the measurement period**, submit completed ERAS order sets, protocols, and patient education materials.

- **Demonstrate improvement in one or more measures** (LOS, readmission, SSI, satisfaction, pain, post-op opioid use in opioid-naïve patients, return to work, or PROMIS scores).
Suggestions for Success

• ERAS Team Members...
  – Surgeons
  – Surgeon Clinic Staff
  – Anesthesia
  – Pharmacy
  – Administration
  – Nursing (all levels)
  – Pre Admission Testing
  – QI Staff
  – Care Management
  – Physical Therapy
  – IT Department
  – Nutrition/Dietary

• Is there an existing ERAS program for other specialties?

• Nurse Spine Navigator
  – Do you have one?

• ERAS Coordinator?

• ERAS Mobile app – can greatly enhance an ERAS initiative
ERAS + Mobile App = Enhanced ERAS Patient Experience (Multiple Vendors – Customizable)

Benefits of Enhanced Recovery After Surgery for fusion in degenerative spine surgery: impact on outcome, length of stay, and patient satisfaction

Bertrand Debono, MD,¹ Marco V. Corniola, MD,² Raphael Pietton, MD,¹ Pascal Sabatier, MD,¹ Olivier Hamel, MD, PhD,¹ and Enrico Tessitore, MD²
ERAS + Mobile Apps: Patient Satisfier
(808 Responses)

• Regarding how prepared patients felt for their surgery stay - 750 patients (92.8%) were satisfied or very satisfied.

• Appreciation of the mobile e-health app in the perceived optimization of care management, 665 patients (82.3%) were satisfied or very satisfied.
Two great THINGS coming together to create something better
• Past decade: ERAS has been the object of >3,000 PubMed-listed publications in various surgical fields – poorly discussed in spine. Time to get on board and lead for spine.

• Substantial body of literature supporting its benefits – outcomes, satisfaction, LOS, reduction in opioids, etc.

• Phase 1 ERAS – 2021: ERAS team engagement, development and submission of protocol, order sets, and education. Implementation by the end of the measurement period.

• Phase 2 ERAS – 2022: Measurement of successful implementation compliance of ERAS.
Any Questions