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Sports Medicine ERAS

Children's Mercy Kansas City

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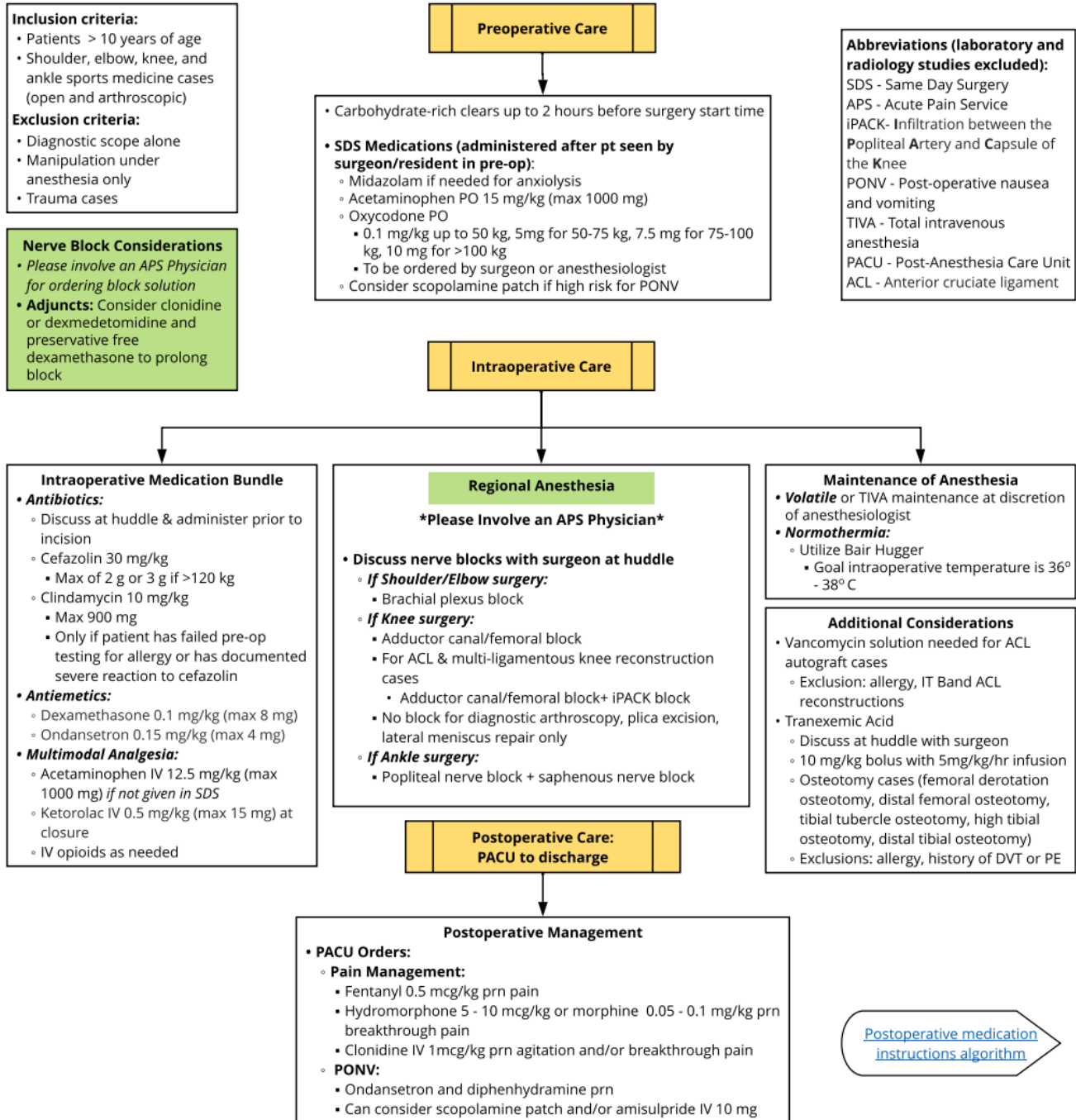
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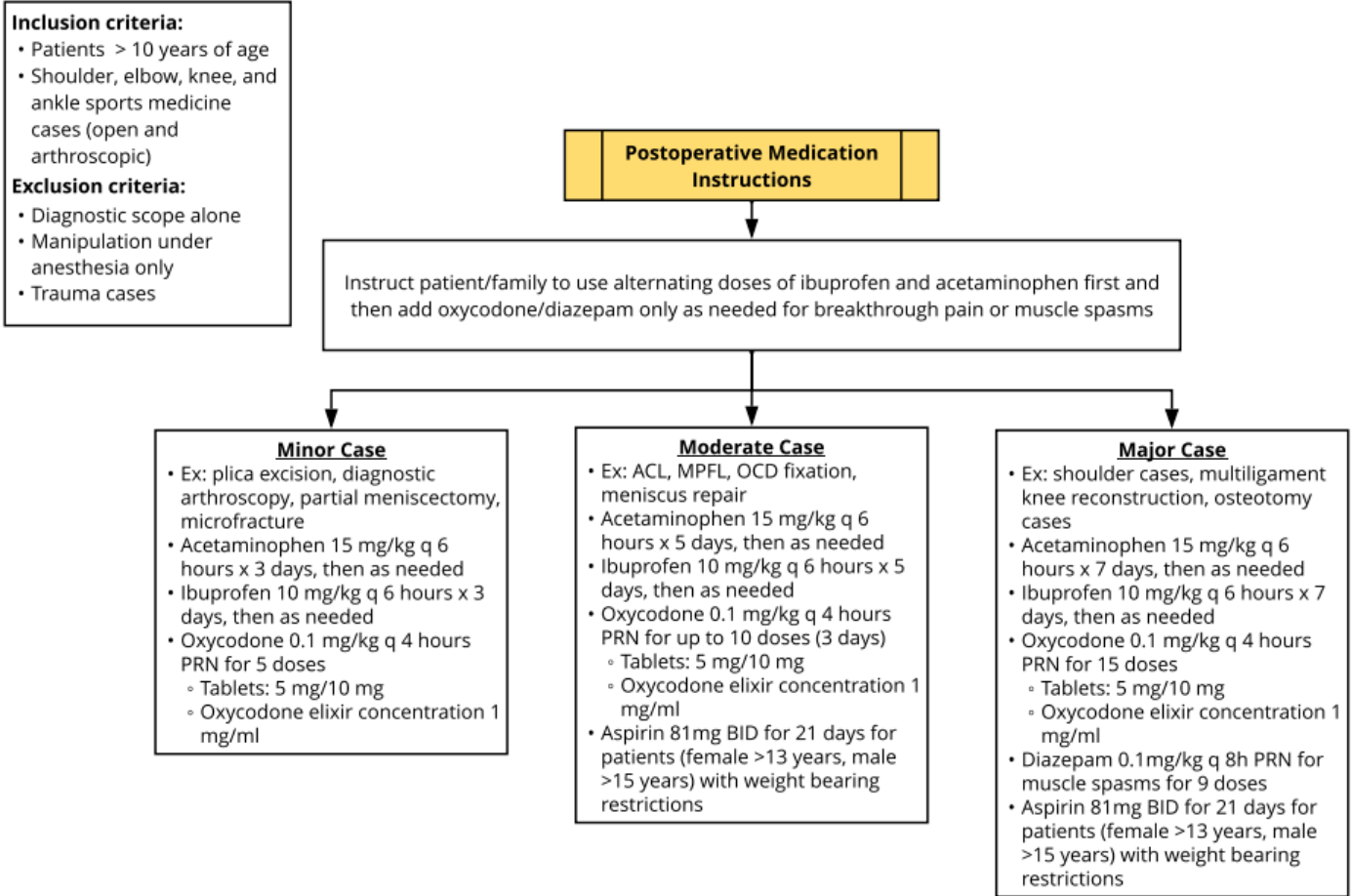
Sports Medicine Enhanced Recovery After Surgery Synopsis

Sports Medicine ERAS Algorithms



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Postoperative Medication Algorithm



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Objective of ERAS Model

The objective for the Sports Medicine Surgery Enhanced Recovery after Surgery (ERAS) pathway is to minimize the variation of care for the patient undergoing shoulder, elbow, knee, or ankle surgery. In the last several decades the application of ERAS principles has led to significant improvements in various surgeries regarding length of stay, opioid use, pain control, and return to diet (Liu 2017).

Background

Crutchfield et al. (2022) found that use of opioids was disproportionately related to orthopedic surgeries when compared to other types of surgeries, resulting in 8% of all narcotic prescriptions despite orthopedic surgeons making up 2.5% of currently practicing physicians in the United States. The authors also found that peripheral nerve blocks (PNBs) provide an alternative pain control associated with less need for long-term postoperative opioids, quicker hospital discharge and faster recovery. Use of PNBs in combination with the other core ERAS pathway principles helps to ensure optimal recovery.

Target Users

- Anesthesiologists
- Pediatric orthopedic surgeons
- Nurse practitioners
- OR nurses

Target Population**ERAS Inclusion Criteria**

- Patients presenting for shoulder, elbow, knee, and ankle sports medicine surgeries (open and arthroscopic)

ERAS Exclusion Criteria

- Diagnostic scope alone
- Manipulation under anesthesia only
- Trauma cases

Core Principles of ERAS (Melnyk et al., 2011)

- Pre-operative education of patients and family with an introduction to ERAS
- Reduced pre-operative fasting, with clear liquid oral carbohydrate loading until 2 hours prior to surgery
- Goal-directed strict intra-operative intravenous fluid therapy guidelines to avoid hypo- or hypervolemia
- Avoidance of pre-operative mechanical bowel preparation
- Avoidance of routine nasogastric tube use
- Minimizing long-acting opioid analgesia, in favor of regional anesthesia with epidural and/or local anesthesia for intra-operative and post-operative pain control when appropriate and using alternative non-opioid medications when appropriate (e.g., non-steroidal anti-inflammatories or acetaminophen)
- Early post-operative mobilization
- Early post-operative enteral feeding

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ERAS Management Recommendations:

Preoperative Care

- Carbohydrate-rich clear fluids up to 2 hours before surgery time
- Preoperative medications in Same Day Surgery (SDS)

Intraoperative Care

The principal goals during the intraoperative care of these patients are:

- Multimodal approach to pain management
 - Regional nerve blocks specific to surgery type (shoulder, elbow, knee, or ankle)
 - IV acetaminophen at beginning of case if not given in SDS
 - IV ketorolac at end of case
- Post-operative nausea and vomiting (PONV) prophylaxis with dexamethasone and ondansetron
- Fluid management goal of euvolemia
- Ensure that antibiotics are administered prior to surgical incision
- Maintain normothermia throughout the entire procedure

Postoperative Care

The principal goals during the postoperative care of these patients are:

- Transition from IV to oral medications as soon as possible
- Achieve good pain control utilizing a combination of medications to treat pain
- Prevention of nausea
- Getting out of bed as soon as possible after surgery
- Tolerate oral intake
- Review postoperative instructions including recommended pain and bowel medication regimen

Additional Questions Posed by the CPM Committee

No clinical questions were posed for this review.

Key Metrics to Be Monitored:

Pre-Op	Intra-Op	Post-Op
Carbohydrate-rich drink	PONV prophylaxis	PACU PONV score
Oxycodone	Antibiotics prior to incision	Average pain score
Acetaminophen	Ketorolac	Long-acting opioids
	Regional Anesthesia	Length of PACU stay
	Normothermia	

Value Implications

The following potential improvements may reduce costs and resource utilization for healthcare facilities and reduce healthcare costs and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and families.

- Decreased length of stay
- Decreased unwarranted variation in care
- Improved communication between patients and care team throughout the perioperative period
- Improved post-operative pain control

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Potential Organizational Barriers and Facilitators

Potential Barriers

- Challenges with follow-up faced by some families

Potential Facilitators

- Collaborative engagement across care continuum settings during ERAS development
- High rate of use of ERAS pathways within the hospital setting

ERAS Model Preparation

This ERAS pathway was prepared by the Department of Evidence Based Practice (EBP) in collaboration with the Department of Orthopedic Surgery and Department of Anesthesiology. Development of this care process supports the Division of Quality Excellence and Safety's initiative to promote care standardization that is evidenced by measured outcomes. If a conflict of interest is identified the conflict will be disclosed next to the committee member's name.

Sports Medicine Surgery ERAS Committee Members and Representation

- Emily Weisberg, MD, FASA | Anesthesiology | Committee Co-Chair
- Ryan Koehler, MD | Orthopedic Surgery | Committee Co-Chair
- Nichole Doyle, MD, FASA | Anesthesiology | Committee Member
- Kevin Latz, MD | Orthopedic Surgery | Committee Member
- Azita Roberson, MSN, RN, CPN, APRN, FNP-C | Department of Anesthesiology | Committee Member
- Heather Sambol, RN, APRN | Department of Anesthesiology | Committee Member

EBP Committee Members

- Todd Glenski, MD, MSHA, FASA | Anesthesiology, Evidence Based Practice
- Megan Gripka, MT (ASCP) SM | Evidence Based Practice

Additional Review & Feedback

- The ERAS pathway was presented to each division or department represented on the ERAS committee as well as other appropriate stakeholders. Feedback was incorporated into the final product.

ERAS Development Funding

The development of this guideline was underwritten by the departments of EBP, Anesthesiology, and Orthopedic Surgery.

Conflict of Interest

The contributors to the Sports Medicine ERAS have no conflicts of interest to disclose related to the subject matter or materials discussed in this care process.

Approval Process

- This product was reviewed and approved by the Sports Medicine ERAS Committee and the EBP Department.
- Products are reviewed and updated as necessary each year within the EBP Department at CMKC. Content expert teams are involved with every review and update.

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Approval Obtained:

Department/Unit	Date Approved
Anesthesiology	April 2023
Orthopedic Surgery	April 2023
Evidence Based Practice	March 2023

Version History

Date	Comments
April 2023	Initial version

Date for Next Review:

- April 2024

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Implementation & Follow-Up

- Once approved, this ERAS pathway was presented to appropriate care teams and implemented.
- Care measurements will be assessed and shared with appropriate care teams to determine if changes need to occur.
- This ERAS pathway is scheduled to be revisited by all teams within 1 year of the release date.

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the ERAS algorithm(s) and the power plans that accompany the guideline.

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