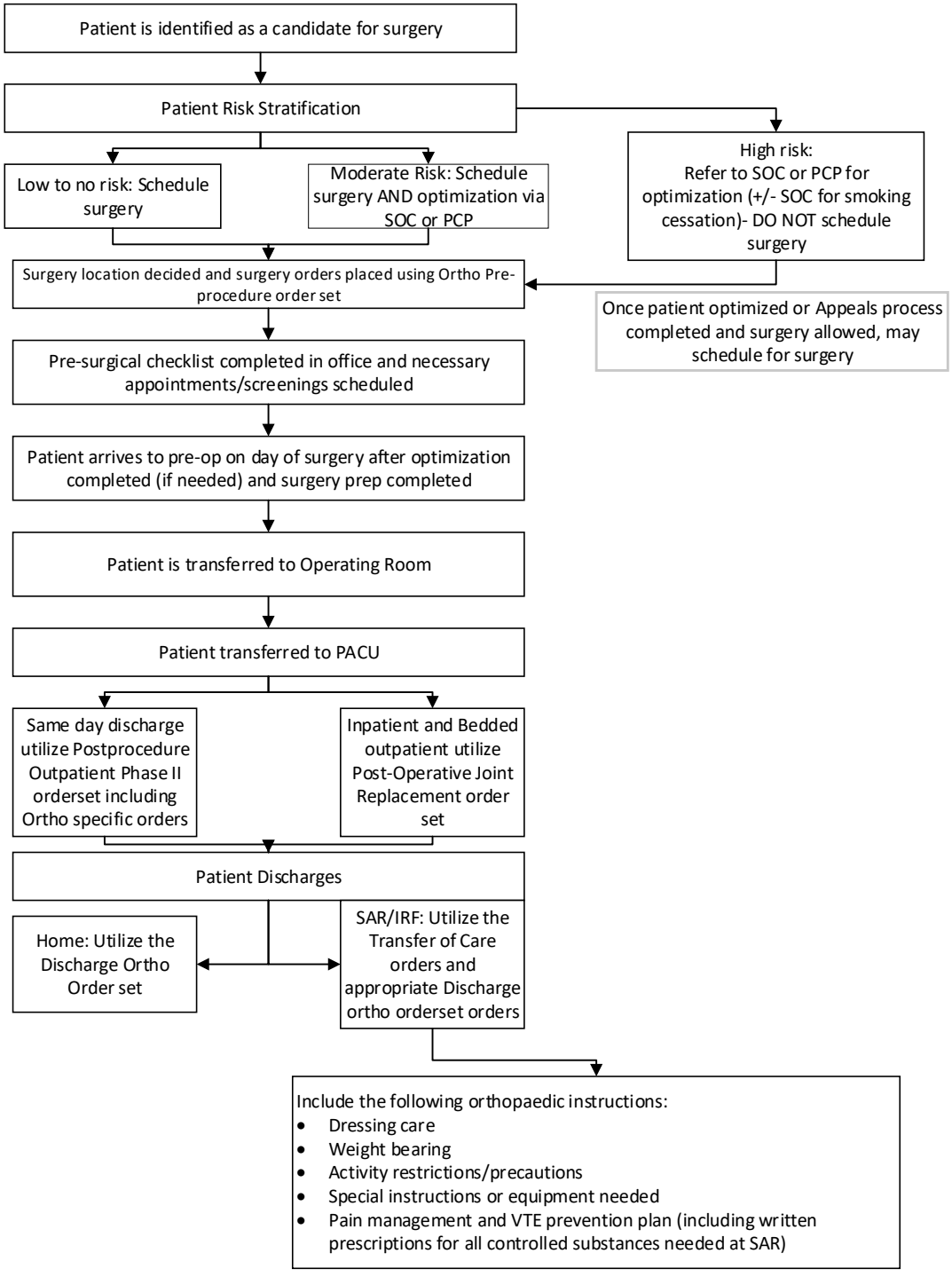
Clinical Pathways Program

Clinical Pathway: Total Hip and Knee Joint Replacement, Inpatient/Outpatient, Adult

Updated: December 18, 2020

Clinical algorithm:



Clinical pathway summary

CLINICAL PATHWAY NAME: Total Hip and Knee Joint Replacement

PATIENT POPULATION AND DIAGNOSIS: All adult patients undergoing elective hip or knee joint replacement surgery

APPLICABLE TO: All Spectrum Health Sites

BRIEF DESCRIPTION: This clinical pathway outlines best practice care for adult patients undergoing elective hip or knee joint replacement surgery at any Spectrum Health facility. The episode of care begins when the clinical decision is made to pursue elective joint replacement and follows through 90 days post-operatively.

OVERSIGHT TEAM LEADER(S): Charles Sherry, MD., Karl Roberts, MD., Bryan Kamps, MD., Adam Edlund, MD.

OWNING EXPERT IMPROVEMENT TEAM (EIT): Orthopedic Joint Replacement

MANAGING CLINICAL PRACTICE COUNCIL (CPC): Orthopedic Health CPC

OTHER TEAM(S) IMPACTED (FOR EXAMPLE: CPCs, ANESTHESIA, NURSING, RADIOLOGY): Nursing, Rehab, Care Management, Surgical Optimization Center (SOC), Surgical Services, Pharmacy, Anesthesia, SHMG Ambulatory Orthopaedics, Orthopedic Associates of Michigan (OAM), West Michigan Orthopedics (WMO), Shoreline Orthopedics

IMPLEMENTATION DATE: January 1, 2021

LAST REVISED: December 18, 2020

FOR MORE INFORMATION, CONTACT: Lisa McCann-Spry

Clinical pathways clinical approach

TREATMENT AND MANAGEMENT:

PRE-SURGICAL MANAGEMENT:

1. Patient presents at the Orthopedic office with end-stage arthritis and the mutual decision is made to pursue joint replacement surgery.
    a. Documentation completed of failed conservative measures
    b. Shared Decision Making (SDM) process and tool*
2. Orthopedic surgeon and/or office clinical staff completes pre-op risk assessment and determines patient level of risk for surgery. Evaluate nutritional status and anemia and treat as appropriate.
    a. Low risk: Does not meet criteria for needing SOC referral/optimization and meets all hard stop criteria
    b. Moderate risk: Meets criteria for SOC referral/optimization and meets all hard stop criteria (according to SH Ortho surgery hard stop criteria and SOC referral criteria per document X18160).
    c. High risk: Does NOT meet hard stop criteria. Hard stop criteria includes:
        i. BMI >45
        ii. Use of >90 OME without attempt to lower dosage
        iii. HgbA1C above 8%
        iv. Active tobacco/nicotine use (negative urine nicotine 3-6 weeks after quit date)
3. For patients considered low surgical risk, proceed with surgery:
    a. Determine where surgery will be performed.
        i. ASC
        ii. Hospital same day
        iii. Hospital bedded outpatient
        iv. Hospital inpatient (requires prior authorization)
    b. Discuss discharge plan and caregiver support with patient and caregiver
        i. Discharge home is the preferred plan after elective joint replacement surgery
        ii. Consider clinical, behavioral and social risk factors specific to the patient
        iii. Schedule surgery when caregivers are available to help at home
        iv. Any patient considered for ASC or hospital same day joint replacement must have a predetermined discharge plan of discharge to home
    c. Schedule surgery at the appropriate location with the appropriate patient status and discharge destination if patient surgery is in the hospital. ASC and Hospital same day criteria includes:

Diabetes	None or if present: -not taking insulin and HgbA1C <8% -No history of diabetic ketoacidosis
Chronic Pain	None or opioids at MME <60 mg/day
Nicotine Use	No use 30 days prior to test (test at time of surgery consult)
No joint injection	<3 months prior
Obstructive Sleep Apnea	STOP-BANG questionnaire (<3 “yes” answers)
PHQ-9 depression scale	Score <10
Pain Catastrophizing Scale	Score <30
Emergency Room Visits	<= 1x per year
BMI	<40

    d. Complete pre-op orders via “Joint Replacement Preoperative” order set

i. For patients discharging home same day from the hospital, note “home” as the post-op location and any discharge risks

e. Complete pre-op checklist* with patient, including:
    i. Joint pre-op class scheduling and handbook
        1. In person vs. virtual joint class as indicated by patient need and class availability
        2. Patient given class schedule and letter with scheduling information if unable to schedule in office
        3. Joint class is scheduled as appointment in Epic by joint class educator or central scheduling
    ii. MRSA testing arranged (office vs. joint class vs. OP lab) and 6 pack of CHG wipes given to patient (instructions in handbook pg. 18-19)
    iii. Planning specific for same day patients including obtaining equipment, home set up, outpatient PT and handbook supplement
    iv. COVID testing and visitor policy reviewed
    v. PROS completion (or via Care companion)*
    vi. PCN allergy assessment completed and referral for testing completed if indicated*
    vii. VTE risk screen and med plan if high risk*
    viii. Medbridge enrollment process (current state for same day joints)*
    ix. Care companion set up and alternate plan if patient can’t use Care Companion*
    x. Carb loading*
    xi. Pre-op appointment with PCP if needed (include needed labs, testing and screening)
    xii. Readmission risk assessment*

4. For patients considered moderate surgical risk, may procced with planning for surgery as above in step 3, but <u>also</u> schedule SOC or PCP appointment for optimization.
5. For patients considered high surgical risk, patient is referred back to PCP for optimization.
    a. Once patient is optimized and meets hard stop criteria, patient may proceed through step #3
    b. If patient does not meet criteria for surgery d/t smoking status, may refer to SH SOC for smoking cessation with smoking cessation specialist (See SOC SW document)
    c. If provider believes that surgical benefit outweighs patient risk, they may file an appeal that will be reviewed by the appeals team via the appeals document
6. Patient completes pre-op requirements and arrives at the appropriate location on the day of surgery, including:
    a. COVID testing
    b. MRSA testing and appropriate antibiotic ordering
    c. Joint Class completed and joint handbook brought to hospital
    d. PPP call completed
    e. CHG full body wipes the night before surgery
    f. Has DME in home and brings walker to surgery location (same day joint discharge patients)
    g. Pre-op PCN allergy testing completed and VTE medication arrangements if needed*
    h. Care companion tasks completed*

DAY OF SURGERY MANAGEMENT (OR/PACU/SURGICAL CENTER)

7. Surgical center pre-op prep completed (ASC or hospital), including:

a. Pre-op medications (TXA, acetaminophen,pregabalin etc.) per Joint Replacement preprocedure order set
    i. Pre-op physical therapy eval ordered if patient is a same day hospital or surgical center discharge
b. Antibiotics ordered, administered and documented
c. Joint Replacement SSI prevention pre-op bundle completed and documented in Epic
    i. Home CHG
    ii. Day of surgery CHG
    iii. Nasal decolonization
    iv. Oral mouth rinse (if general anesthesia)
    v. Hair clipping (if appropriate)
d. Anesthesia type/block discussed and decision made with patient
    i. Mepivacaine spinals preferred if appropriate over traditional spinal anesthesia and general anesthesia
e. Pre-warming in the surgical center to promote normothermia

8. Operating Room (OR) care provided, including:
    a. Joint Replacement SSI prevention intra-op bundle completed and documented in Epic
        i. Skin adhesive or occlusive dressing
        ii. Scrubbed personnel double gloved
        iii. ASA class confirmed
        iv. Wound class confirmed
    b. Appropriate skin prep used:
        i. Type
        ii. Amount
        iii. Dry time
    c. Normothermia components and active patient warming after the field is prepped and patient is draped
        i. Recommend use of Bair hugger (upper body and/or under body)
        ii. Consider room temperature 64 degrees or higher
        iii. Document patient temperature
    d. Mepivacaine spinal preferred for routine cases
        i. No routine foley placement
    e. RECK for intraop joint periarticular injection
    f. Fluid management
        i. For primary, uncomplicated THA and TKA limit fluid to 1000-2000ml depending on hemodynamic stability.
    g. Antibiotic administration and documentation
    h. OR traffic management
        i. Respect signs
        ii. Use phone vs. door opening
        iii. Limit vendor traffic
        iv. As feasible, breaks during a joint replacement case should be avoided
    i. Silver occlusive dressing applied at the end of the case
9. Post-anesthesia Care Unit (PACU) care provided, including:
    a. For patients discharging from ASC or from hospital same day:
        i. Placement of orders via Postprocedure Outpatient Phase II order set including Orthopedic specific orders
        ii. Rehab evaluation prior to discharge-surgical center SW used for notification to rehab that patient ready for evaluation

iii. Prior to discharge, patient watches joint replacement discharge videos
iv. Patient discharge to home when meeting hospital phase II recovery discharge criteria

b. For patients spending at least 1 night in the hospital
    i. Placement of orders via the post-operative joint replacement order set
    ii. Consider hospitalist consult for patients (including specific reason for consult vs. medical management):
        1. Insulin dependent diabetic
        2. Multiple comorbidities
        3. Polypharmacy, especially with anti-hypertensives
        4. Goal is for timely evaluation after arrival to the unit
            a. If urgent evaluation is needed, page hospitalist service
        5. Potential future process of dedicated hospitalist or APP for joint patients or "partial" consult of med review and coverage arrangement if acute issues arise*
    iii. Ortho surgeon initiates corrective insulin order set (even when hospitalist consult placed), and uses basal bolus order set for diabetics if no hospitalist consult is anticipated
    iv. Ortho surgeon orders all appropriate home medications if no hospitalist consult is anticipated and considers placing urgent home medications if hospitalist consult is expected to be delayed
    v. Bladder management by nursing
    vi. Monitor temperature and continue active warming
    vii. Patient transferred to inpatient unit when meets PACU discharge criteria

POST-OPERATIVE HOSPITAL MANAGEMENT

10. Patient care as outlined in post-operative joint replacement orderset including:
    a. POD #0 rehab session if patient arrives to unit by 1700. Otherwise POD #0 mobility done and documented by nursing as tolerated by the patient.
    b. D/C foley if placed as soon as spinal resolved. Continue bladder management
    c. Pain control including pharmacologic and non-pharmacologic interventions
        i. Ice
        ii. Repositioning/wedge or pillow use as appropriate
        iii. Distraction
        iv. Medications
    d. Neurovascular assessment as ordered
    e. Dressing care as ordered
    f. DME/AD for walking
    g. Care management for coordination of post-hospital equipment and services
    h. Patient discharged when meets hospital discharge criteria and all needed post-hospital services and/or equipment arranged

PATIENT DISCHARGE TO HOME

11. Anticipate discharge to home. If patient unsafe to discharge home, referral to SAR is placed and coordinated by care management.
    a. Physical Therapy criteria for safe discharge to home met
    b. Consider additional hospital day if that would allow discharge home vs. SAR transfer
12. Patient discharge instructions completed by provider via Discharge Ortho order set
    a. Touch base with hospitalist service (if consulted) related to medications

13. Start Talking form signed for patients discharging with Opioids.
14. Provider to use MARCQI opioid guidelines for prescribing of opioids
15. Patient has VTE prophylaxis medication ordered
16. Patient watches joint replacement discharge videos
    a. Documentation by nursing staff in education record of videos and other appropriate education
17. Appropriate clinical references attached to patient AVS
18. Appropriate referrals made to homecare/outpatient services if needed and equipment arranged
19. Care companion next steps*
20. Discharge phone call screen/risk assessment*

PATIENT DISCHARGE TO SAR/IRF

21. Transfer of Care orders placed with appropriate orthopaedic instructions placed via Discharge ortho order set or provider attached instructions including:
    a. Dressing care
    b. Weight bearing
    c. Activity restrictions/precautions
    d. Special instructions or equipment needed
    e. Pain management and VTE prevention plan (including written prescriptions for all controlled substances needed at SAR)

POST HOSPITAL DISCHARGE THROUGH 90 DAYS POST-OP

22. Post discharge call*
    a. SHMG nurse navigator (all patients over 65 and same days)
    b. OAM (OAM care bundle patients)
    c. Standard hospital phone call*
    d. SH HHC calls*
    e. Joint replacement unit charge nurse based on screening
23. Post-discharge phone call documented in Epic*
24. Assessment of need for ongoing calls or follow up*
    a. Algorithm for who should get additional phone calls/navigation*
    b. Risk assessment tool*
    c. Care Companion*
25. Communication with post-acute service providers of patient complications or needs
    a. Initial and ongoing education for post-acute providers*
26. Patient office visit follow up appointments
27. Tracking of ED visits and readmissions with provider communication related to their specific patient data
28. Ongoing PROS collection*

*= Denotes process or step that is not current state or is still in development as of 12.18.2020

References:

Solomon Aronson, MD, MBA, FASA, FACC, FCCP, FAHA, FASE, Gavin Martin, MB ChB, MMCi, Padma Gulur, MD, Mike E. Lipkin, MD, MBA, Sandhya A. Lagoo-Deenadayalan, MD, PhD, Christopher R. Mantyh, MD, David E. Attarian, MD, FACS, FAOA, Joseph P. Mathew, MD, MSc, MBA, FASE, and Allan D. Kirk, MD, PhD, FACS. (2020). *Preoperative optimization: A continued call to action*. International Anesthesia Research Society, 130(4), 808-810.

Solomon Aronson, MD, MBA, FASA, FACC, FCCP, FAHA, FASE, Sutton Murray, MS, Gavin Martin, MBChB, MMCi, Jeanna Blitz, MD, Timothy Crittenden, RN, Mike E. Lipkin, MD, MBA, Christopher R. Mantyh, MD, Sandhya A. Lagoo-Deenadayalan, MD, PhD, Ellen M. Flanagan, MD, David E. Attarian, MD, FACS, FAOA, Joseph P. Mathew, MD, MSc, MBA, FASE, and Allan D. Kirk, MD, PhD, FACS. (2020). *Roadmap for transforming preoperative assessment to preoperative optimization*. International Anesthesia Research Society, 130(4), 811-819.

Ferschi, M.B., Tung, A., Sweitzer, B., Huo, D., & Glick, D.B. (2005). *Preoperative clinic visits reduce operating room cancellations and delays.* Anesthesiology, 103(4), 855-9.

Tait, M.A, Dredge, C., & Barnes, C.L. (2015). *Preoperative patient education for hip and knee arthroplasty: Financial benefit?* Journal of Surgical Orthopaedic Advances, 24(4), 246-251.

Vazirani, S., Lankarani-Fard, A., Liang, L.I., Stelzner, M., Asch, S.M. (2012). *Perioperative processes and outcomes after implementation of a hospitalist-run preoperative clinic.* Journal of Hospital Medicine, 7(9), 697-701.

Position of the Academy of Nutrition and Dietetics: Malnutrition (Undernutrition) Screening Tools for all adults. (2019). Journal of the Academy of Nutrition and Dietetics.

Brian C. Cho, MD, Jessica Serini, MD, Andres Zorrilla-Vaca, BS, Michael J. Scott, MBChB, Eric A. Gehrie, MD, Steve M. Frank, MD, and Michael C. Grant, MD. (2019). *Impact of preoperative erythropoietin on allogenic blood transfusions in surgical patients: Results from a systematic review and meta-analysis.* International Anesthesia Research Society, 128(5), 981-992.

Anesthesia and Analgesia in Total Joint Arthroplasty. Developed by American Association of Hip and Knee Surgeons, American Society of Regional Anesthesia and Pain Medicine, American Academy of Orthopaedic Surgeons, The Hip Society, and The Knee Society. http://www.orthoguidelines.org/topic?id=1032&tab=all_guidelines

Management of Osteoarthritis of the Hip. Endorsed by POSNA, APTA, ACR and ASA. http://www.orthoguidelines.org/topic?id=1021&tab=all_guidelines

Surgical Management of Osteoarthritis of the Knee. Endorsed by The Knee Society, SOMOS, AAHKS, ACR, AGS, AANA. Osteoarthritis of the Knee: Surgical Management (2016)

Tranexamic Acid in Total Joint Arthroplasty. Developed by the American Association of Hip and Knee Surgeons. http://www.orthoguidelines.org/topic?id=1024&tab=all_guidelines

Preventing Venous Thromboembolic Disease in Patients Undergoing Elective Hip and Knee Arthroplasty. http://www.orthoguidelines.org/topic?id=1006&tab=all_guidelines

Diagnosis and Prevention of Periprosthetic Joint Infections. Endorsed by ACR, IDSA, SNMMI.

http://www.orthoguidelines.org/topic?id=1028&tab=all_guidelines