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

Updated: December 18, 2020

Clinical algorithm:

- Patient is identified as a candidate for surgery

Patient Risk Stratification

- Low to no risk: Schedule surgery
- Moderate Risk: Schedule surgery AND optimization via SOC or PCP
- High risk: Refer to SOC or PCP for optimization (+/- SOC for smoking cessation)- DO NOT schedule surgery

Surgery location decided and surgery orders placed using Ortho Pre-procedure order set

Pre-surgical checklist completed in office and necessary appointments/screenings scheduled

Patient arrives to pre-op on day of surgery after optimization completed (if needed) and surgery prep completed

Patient is transferred to Operating Room

Patient transferred to PACU

- Same day discharge utilize Postprocedure Outpatient Phase II order set including Ortho specific orders
- Inpatient and Bedded outpatient utilize Post-Operative Joint Replacement order set

Patient Discharges

- Home: Utilize the Discharge Ortho Order set
- SAR/IRF: Utilize the Transfer of Care orders and appropriate Discharge ortho order set

Include the following orthopaedic instructions:
- Dressing care
- Weight bearing
- Activity restrictions/precautions
- Special instructions or equipment needed
- Pain management and VTE prevention plan (including written prescriptions for all controlled substances needed at SAR)
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.

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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:

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

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 proceed with planning for surgery as above in step 3, but also 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.

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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