



MANAGEMENT OF

Geriatric Hip Fracture

Minor revision, April 2017

This Care Process Model (CPM) was developed by the Intermountain Surgical Services' Geriatric Hip Fracture (GHF) Program with input from experts in Intermountain's Musculoskeletal Clinical Program. This CPM builds on the targeted patient care improvement program developed by Synthes® and provides a framework for the successful management of geriatric hip fracture by enhancing best practices. Goals include improving time to surgery, decreasing mortality and post-surgery readmissions, improving patient satisfaction, and assuring cost accountability as well as regulatory compliance.

► Why Focus ON GERIATRIC HIP FRACTURE?

- **More than 250,000 people over age 65 are hospitalized due to hip fracture each year in the U.S.** Mortality rates among this population are 30% or higher within the first year. Many more experience major loss of function and mobility.^{BRA}
- **Treatment of hip fracture is costly.** Hip fracture incidence is likely to increase as the population ages and lives longer. Medical facilities are under pressure to reduce costs and improve outcomes. Best practices require a bundled payment program that rewards and penalizes selected facilities for quality and cost outcomes for hip and pelvis fracture.
- **Collaboration and communication between perioperative teams and care specialists is necessary to ensure all patients, system wide, get the best evidenced-based care.** Providers and patients should partner to ensure appropriate care utilization, including setting realistic expectations for discharge at multiple points in the care process.
- **Patient engagement is critical to improving satisfaction and meeting patient expectations.** Patients who participate in preoperative education have better functional outcomes. Patient education should stress pain management, early mobility and physical therapy compliance, and preparing for discharge to rehabilitation to reduce hospital readmissions.

► WHAT'S INSIDE?

ALGORITHM 1: TREATMENT OF GHF . . . 2
MANAGEMENT OF GHF 4
AAOS guidelines 4
Delirium and dementia checklist 5
COMORBIDITY MANAGEMENT 6
PAIN MANAGEMENT 7
ALGORITHM 2: POST-OPERATIVE CARE 8
POST-SURGICAL PHYSICAL THERAPY 9
ALGORITHM 3: GHF DISCHARGE CONSIDERATIONS 10
PATIENT AND FAMILY EDUCATION 12



Throughout this CPM, this icon indicates an Intermountain measure.


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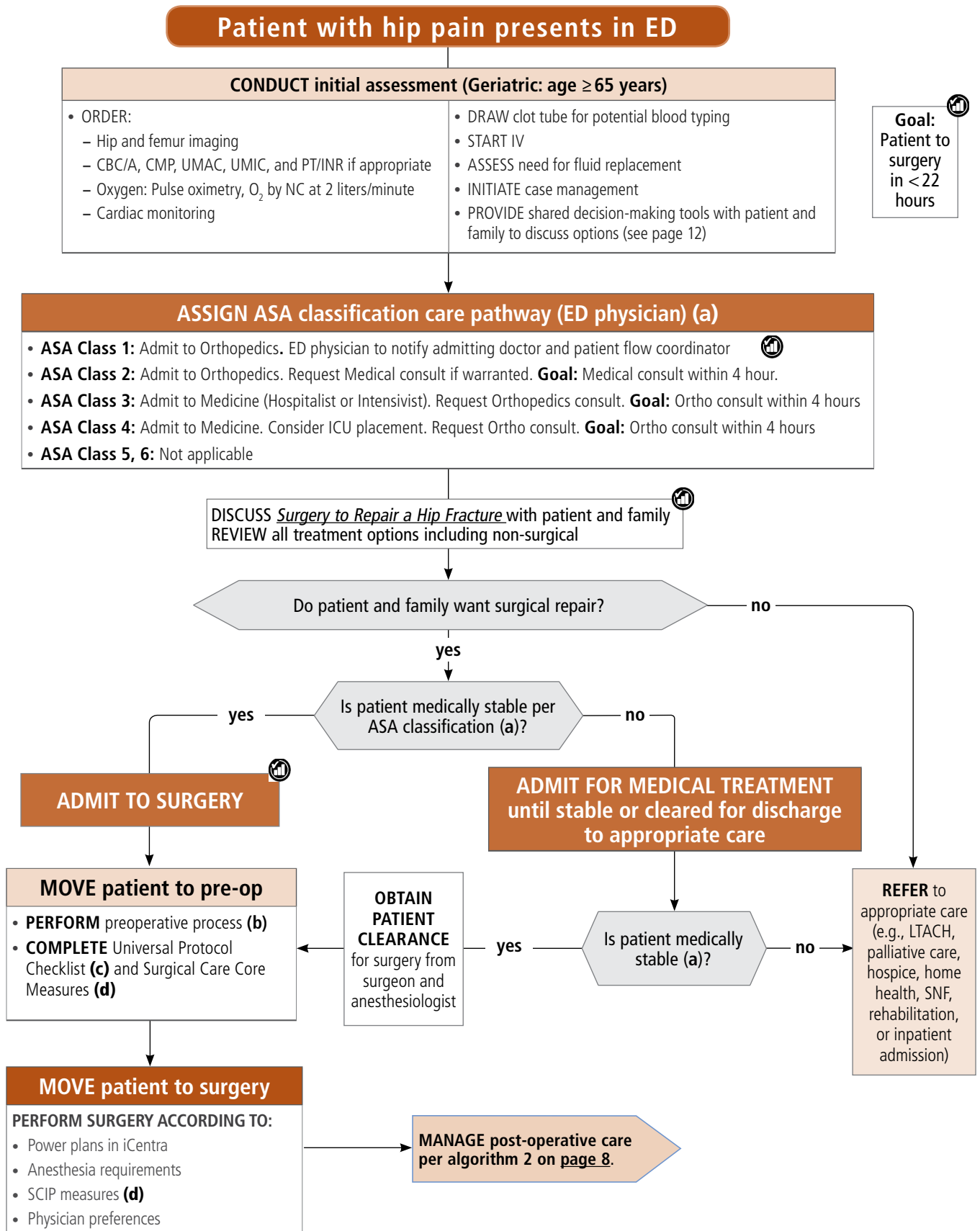
Measurements and Goals

As a result of implementing this CPM, Intermountain aims to:

- Improve:
 - Time to surgery: < 22 hours
 - Coordination of care through transitions
 - Length of stay: < 96 hours
 - Screening for delirium/dementia and appropriate referrals
- Increase:
 - Number of patients/families receiving pre-operative education
 - Number of patients discharged to appropriate care (via measuring discharge outcomes)
- Reduce:
 - Complications related to morbidity and mortality including blood use, infections, DVTs/PEs, medication errors, skin integrity, and pain management
 - Unplanned readmissions within 30 days

To measure associated outcomes, the GHF development team has created a robust system for generating reports. To view, go to: Intermountain.net > [Clinical Programs](#) > [Surgical Services](#) > [Reports](#) > [Development Teams](#) > [Geriatric Hip Fracture](#)

▶ ALGORITHM 1: TREATMENT OF GERIATRIC HIP FRACTURE



ALGORITHM NOTES

(a) ASA Classification^{ASA}

Physical status classification system

From the American Society of Anesthesiologists (ASA)

- **ASA Class 1:** Normal healthy patient
 - No organic, physiologic, or psychiatric disturbance
 - Excludes the very young and the very old
 - Healthy with good exercise tolerance
- **ASA Class 2:** Patients with mild systemic disease
 - No substantive functional limitations
 - Has a well-controlled disease of one body system
 - Controlled hypertension or diabetes without systemic effects
 - Cigarette smoking without chronic obstructive pulmonary disease (COPD)
 - Mild obesity
 - Pregnancy — yes or no?
- **ASA Class 3:** Patients with severe systemic disease
 - Substantive functional limitation
 - Has a controlled disease of more than one body system or one major system
 - No immediate danger of death
 - Controlled congestive heart failure (CHF), stable angina, old heart attack
 - Poorly controlled hypertension
 - Morbid obesity
 - End-stage renal failure with regular dialysis
 - Bronchospastic disease with intermittent symptoms
- **ASA Class 4:** Patients with severe systemic disease that is a constant threat to life
 - Has at least one severe disease that is poorly controlled or at end stage
 - Possible risk of death
 - Unstable angina
 - Symptomatic COPD
 - Symptomatic CHF
 - ARD or ERSD without regular dialysis
- **ASA Class 5:** Moribund patients who are not expected to survive without the operation
 - Not expected to survive >24 hours without surgery
 - Imminent risk of death
 - Multiorgan failure
 - Sepsis syndrome with hemodynamic instability
 - Hypothermia
 - Poorly controlled coagulopathy
- **ASA Class 6:** A declared brain-dead patient whose organs are being removed for donor purposes

(c) Universal protocol checklist (surgical time out)

The surgical time-out process involves all surgical team members, including the physician involved with the care of patients, and is performed just before starting the procedure. See *Timeout Policy* for more information.

The checklist validates that the team:

- Used active communication
- Verified correct patient using two approved identifiers
- Validated that consent form was accurately completed and signed
- Agreed on the procedure(s) to be performed
- Agreed on the correct site of procedure
- Performed direct visualization of correct site marking (by procedural team) following prep and draping

(d) Core Measures

Core measures for reducing surgical complications include: (remember as ABCs):

Antibiotic	1. Prophylactic antibiotics initiated within 1 hr. (2 hrs. for Vancomycin) prior to incision for CABG, cardiac, hysterectomy, colon, some vascular, PEG.
	2. Prophylactic antibiotics consistent with current guidelines.
	3. Prophylactic antibiotics discontinued within 24 hrs.*
Beta Blockers	4. Surgery patients on beta blocker prior to admission, continue beta-blocker therapy during peri-operative period (24 hours before incision to discharge from PACU).
Body Temp	5. Surgery patients should be warmed during the operation or have at least one recorded body temperature equal to or great that 96.8 degrees F within 30 min. prior to the end of anesthesia to 15 min. after anesthesia end time.
Circulation – VTE prophylaxis	6. Surgery patients with recommended venous thromboembolism (VTE) prophylaxis, ordered anytime from hospital arrival to 48 hrs. after anesthesia end time.
	7. Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hrs. prior to anesthesia start time.
Catheter D/C'd	8. Surgery patients with urinary catheter removed on post-op day 1 or post-op day 2 with day of surgery being day zero.*
Surgical Site Hair Removal	9. Surgery patients with appropriate surgical site hair removal. Appropriate: hair removal with clippers, depilatory, or no hair removal.

* Starred measures are initiated in the OR but completed on inpatient units

(b) Geriatric hip fracture preoperative order set in iCentra — key points

- **Medications:** Prophylactic antibiotics, VTE prophylaxis, antibiotic irrigants, local anesthetics.
- **Blood utilization:** May or may not reduce the need for transfusion or Cell Saver.[®] Do not use for all patients.
- **Anticoagulation protocols:** Based on risk stratification, using the VTE computerized risk alert tool, which identifies VTE risk factors and assigns a weighted score (in points) for calculating VTE risk score. **Any score of > 4 points indicates that a patient is at high risk for VTE.** (See info at right and [User's Guide: VTE Computerized Risk Assessment Tool](#)).
- **Anesthesia:** See the ORTHO Hip Fracture power plans in iCentra for guidance on pain management, nerve blocks, anesthesia type, medication choice, and dosage. Use regional anesthesia whenever appropriate.^{HOR}
- **Tranexamic acid (TXM):** Use weight-based dosing (10 mg/kg) vs. standard dose. For high-risk patients (e.g., personal or family history of DVT or PE) inject 2 mg intra-articularly. See the Geriatric Hip Fracture power plans in iCentra.
- **OR efficiency:** Turnover time, anesthesia time.

**VTE RISK FACTORS — (Points)
High risk = > 4 points^{KUC}**

- Cancer — (3)
- Prior VTE (ICD codes) — (3)
- Hypercoagulability (factor V Leiden, etc.) — (3)
- Major surgery (> 60 minutes) — (2)
- Bed rest (nurse charting) — (1)
- Age ≥ 70 — (1)
- Obesity (BMI > 29 kg/m²) — (1)
- Hormone replacement therapy or oral contraceptives — (1)

► MANAGEMENT OF GERIATRIC HIP FRACTURE

American Academy of Orthopedic Surgeons (AAOS) Guidelines

The AAOS provides evidence-based treatment recommendations for the management of geriatric hip fracture, which are summarized in this section. Discussion of how each recommendation was developed and the complete evidence report are contained in the full guideline, available at aaos.org/guidelines.^{ROB} Physicians should be aware that clinical patients may not necessarily react the same as those found in the clinical trials cited in the guidelines. Patient care and treatment should always be based on a clinician's independent medical judgment and the individual patient's clinical circumstances. Clinicians are urged to consult the full guideline for a comprehensive evaluation of the available scientific studies.

Table 1: AAOS Surgical Guidelines for Hip Fracture in the Elderly^{FTO}

Intervention	Evidence	Recommendation
Advanced imaging	Moderate evidence supports MRI as the advanced imaging modality of choice for diagnosis of presumed hip fracture not apparent on initial radiographs.	MODERATE
Preoperative regional analgesia	Strong evidence supports regional analgesia to improve preoperative pain control in patients with hip fracture.	STRONG
Preoperative traction	Moderate evidence DOES NOT support routine use of preoperative traction for patients with a hip fracture.	MODERATE
Surgical timing	Moderate evidence supports that hip fracture surgery within 48 hours of admission is associated with better outcomes. (Intermountain's goal is 22 hours.)	MODERATE
Aspirin and clopidogrel	Limited evidence supports NOT delaying hip fracture surgery for patients on aspirin and/or clopidogrel.	LIMITED
Anesthesia	Strong evidence supports similar outcomes for general or spinal anesthesia for patients undergoing hip fracture surgery.	STRONG
Cemented femoral stems	Moderate evidence supports the preference for cemented femoral stems in patients undergoing arthroplasty for femoral neck.	MODERATE
VTE prophylaxis	Moderate evidence supports venous thromboembolism (VTE) prophylaxis in hip fracture patients.	MODERATE
Transfusion threshold	Strong evidence supports a blood transfusion threshold of no higher than 8 g/dL in asymptomatic postoperative hip fracture patients.	STRONG
Rehabilitation: Sub-recommendation summary		
Occupational and physical therapy	Moderate evidence supports supervised occupational and physical therapy across the continuum of care (including at home) to improve outcomes and prevent falls.	MODERATE
Intensive physical therapy	Strong evidence supports intensive physical therapy postdischarge to improve functional outcomes of hip fracture patients.	STRONG
Nutrition	Moderate evidence supports postoperative nutritional supplementation to reduce mortality and improve nutritional status in hip fracture patients.	MODERATE
Interdisciplinary care program	Strong evidence supports use of an interdisciplinary care program for those patients with mild-to-moderate dementia who have sustained a hip fracture.	STRONG
Postoperative multimodal analgesia	Strong evidence supports multimodal pain management after hip fracture surgery.	STRONG
Calcium and vitamin D	Moderate evidence supports prescribing supplemental vitamin D and calcium for patients following hip fracture surgery.	MODERATE
Screening	Limited evidence supports preoperative assessment of serum levels of albumin and creatinine for risk assessment of hip fracture patients.	LIMITED
Osteoporosis evaluation and treatment	Moderate evidence supports evaluation of and treatment for osteoporosis after sustaining a hip fracture.	MODERATE

Table 1: AAOS Surgical Guidelines, continued^{FTO}

Intervention	Evidence	Recommendation
Hemi vs. total hip arthroplasty	Moderate evidence supports a benefit to total hip arthroplasty in properly selected patients with unstable (displaced) femoral neck fractures .	MODERATE
Unipolar vs. bipolar arthroplasty	Moderate evidence supports that the outcomes of unipolar and bipolar hemiarthroplasty for unstable (displaced) femoral neck fractures are similar.	MODERATE
Condition	Evidence	Recommendation
Stable femoral neck fractures	Consider nonoperative management. Moderate evidence supports operative fixation for patients with stable (non-displaced) femoral neck fractures .	MODERATE
Displaced femoral neck fractures	Strong evidence supports arthroplasty for patients with unstable (displaced) femoral neck fractures .	STRONG
Stable intertrochanteric fractures	Moderate evidence supports the use of either a sliding hip screw or a cephalomedullary device in patients with stable intertrochanteric fractures .	MODERATE
Unstable intertrochanteric fractures	Moderate evidence supports using a cephalomedullary device for the treatment of patients with unstable intertrochanteric fractures .	MODERATE

LEVELS OF RECOMMENDATION^{ROB}

The guidelines listed at left and on page 4 were established by The American Academy of Orthopedic Surgeons and are summarized below:

- A **strong** recommendation means that the quality of the supporting evidence is high.
- A **moderate** recommendation means that the benefits exceed the potential harm (or that the potential harm clearly exceeds the benefits in the case of a negative recommendation), but the quality/applicability of the supporting evidence is not as strong.
- A **limited** recommendation means that there is a lack of compelling evidence that has resulted in an unclear balance between benefits and potential harm.

Discussion of how each recommendation was developed and the complete evidence report can be found in the full guideline, available at aaos.org/guidelines.

✓ Checklist: Managing hip fracture patients with delirium and dementia

Minimizing the effects of delirium and dementia is necessary to achieve good outcomes in geriatric patients and those with cognitive decline. Refer to the *Diagnosis and Management of Mild Cognitive Impairment and Dementia CPM* for additional guidance.

- EVALUATE** mental status in ED using AVPU (Alert, Voice, Pain, Unresponsive) and Glasgow Coma Scale (GCS).
- FOLLOW** the *Geriatric Hip Fracture Admission Power Plan*.
- PERFORM** cognitive health assessment using the Mini-Cog[®] and MoCA, if not done in the ER.
- MINIMIZE** preoperative narcotic use with multimodal pain control.
- MINIMIZE** delay of surgery to increase early mobility and reduce mortality (Goal: < 22 hours, unless clinically contraindicated).
- INCLUDE** interdisciplinary support.
- ADDRESS** fall prevention during inpatient stay.
- COORDINATE** with rehabilitation and skilled nursing facilities prior to discharge (see page 10).

ANESTHESIA GUIDELINES

Discuss the risks and benefits of spinal anesthesia vs. general anesthesia with the patient and family.

Intraoperative nerve blocks in conjunction with spinal or general anesthesia reduce the need for and side effects of opioids and other pain medications.^{FTO}

LEVELS OF EVIDENCE^{SMI}

- **Level I:** Systematic reviews (integrative / meta-analyses / clinical practice guidelines based on systematic reviews)
- **Level II:** Single experimental study (randomized controlled trials [RCTs])
- **Level III:** Quasi-experimental studies
- **Level IV:** Non-experimental studies
- **Level V:** Care report / program evaluation / narrative literature reviews
- **Level VI:** Opinions of respected authorities / consensus panels

TREATING OSTEOPOROSIS

Patients should be screened with a Bone Mineral Density (BMD) measurement if a they have:

- A fragility fracture
- > 1.5 inches in height loss with back pain
- A secondary cause of osteoporosis

Central DEXA is the preferred method of BMD testing and is the only test covered by SelectHealth, when indicated. When testing to evaluate changes in treatment, a follow-up DEXA is only indicated every two to three years.

Adults should receive counseling regarding:

- Getting dietary calcium as follows:
 - 1,000 mg / day for men age 50 – 70
 - 1,200 mg / day for women age 51 and older and men 71 and older
- Taking vitamin D (800 to 1,000 IU / day)
- Doing weight bearing and muscle-strengthening exercises
- Preventing falls
- Avoiding tobacco and excessive alcohol use

The National Osteoporosis Foundation's 2014 *Clinician's Guide to Prevention and Treatment of Osteoporosis* outlines the most appropriate approach to the diagnosis and management of osteoporosis.

Women ≥ 65 years and men ≥ 70 years who are willing to consider treatment should be screened periodically for osteoporosis but no more often than every two years.

► COMORBIDITY MANAGEMENT

Hip fractures among the elderly are common, and patients with hip fractures frequently have comorbid illnesses, most commonly hypertension, anemia, and fluid and electrolyte disorders.^{NIK}

Comorbidities are a major factor in determining the length of stay and cost of treatment in the elderly.^{NIK, FTO} Identification of comorbidities upon admission and immediate treatment of correctable comorbidities can help avoid surgery delays and reduce mortality.

Physicians should be aware that geriatric patients may also demonstrate atypical presentation of disease.^{SMI, BUT} (See levels of evidence on sidebar at left.)

Diseases, especially infections, may manifest with atypical symptoms in older adults. Symptoms and signs are often subtle and include:

- Nonspecific declines in function or mental status
- Decreased appetite
- Incontinence
- Falls (Level V)
- Fatigue (Level V)
- Exacerbation of chronic illness (Level V)

Additionally, **fever** is often difficult to detect in very old (Level V), frail, or malnourished (Level V) adults. Baseline oral temperature in older adults is 97.4° F (36.3° C) versus 98.6° F (37° C) in younger adults (Level I).

Pulmonary complications^{MOH}

Older adult patients are at greater risk for postoperative pulmonary complications. These complications increase the risk of long-term mortality following surgery. Healthcare professionals should implement these postoperative strategies to prevent pulmonary complications in the older adults

- **Aspiration precautions.** Bedside evaluation of any patient with symptoms, signs, or history of dysphagia.
- **Swallow evaluations.** Potential indications include signs / symptoms inconsistent with examination, nutritional or pulmonary compromise with possible dysphagic-related etiology, concern for safety and efficiency of swallowing, high-risk diagnosis (for example, neurologic or gastrointestinal pathology), or a suspected change in swallow function.
- **Head-of-bed elevation** at all times with repositioning.
- **Getting out of bed** for all meals when possible.
- **Sitting upright while eating** and for one hour after completing a meal or snack.
- **Use of incentive spirometer** and chest physical therapy and deep breathing exercises.
- **Epidural analgesia**

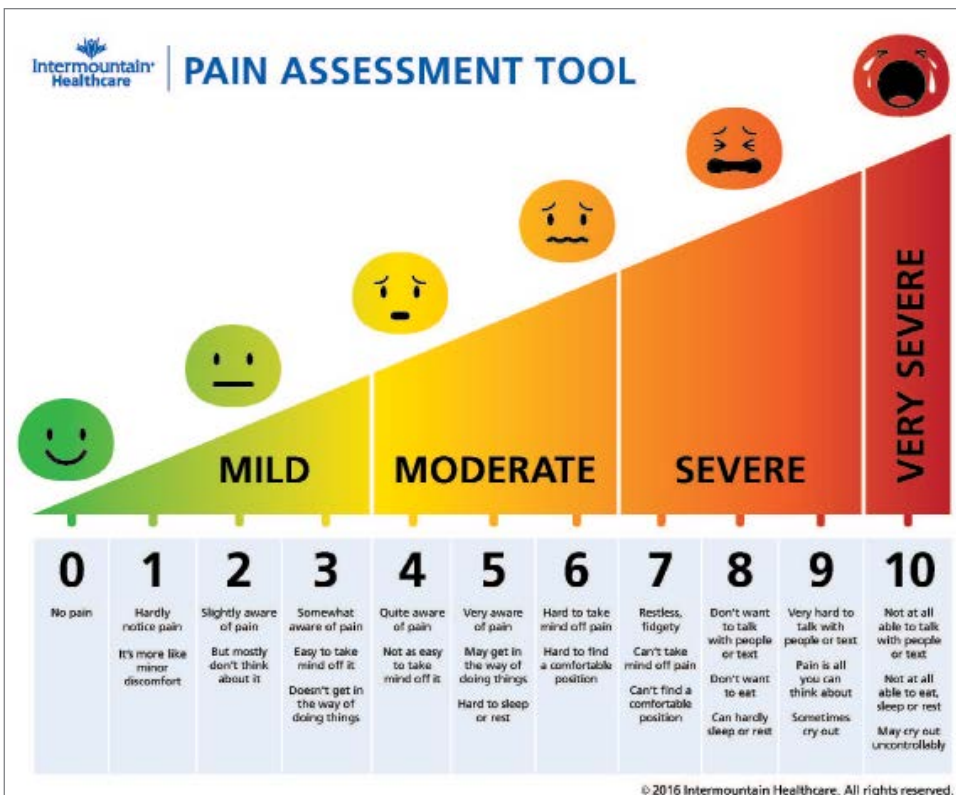
► PAIN MANAGEMENT^{MOH}

An appropriate analgesic plan should be developed for every older adult patient prior to an operation. This plan should be multimodal in nature and accomplish the following:

- **Be appropriately titrated** for the increased sensitivity and altered physiology of the older adult.
- **Include a prophylactic pharmacologic bowel regimen** such as a stool softener (for example, docusate) and stimulant laxative (for example, stool softener, bisacodyl) when appropriate.
- **Avoid potentially inappropriate medications.** Common analgesics and anxiolytics to avoid include:
 - Barbituates, benzodiazepines, and opioids such as meperidine and pentazocine
 - Nonbenzodiazepine hypnotics (eszopiclone, zolpidem, zaleplon)
 - Skeletal muscle relaxants (carisoprodol, chlorzoxazone, metaxalone, methocarbamol, orphenadrine)
 - Non-Cox NSAIDs
- **Use opioid-sparing techniques**, which may include preoperative, intraoperative, and/or scheduled postoperative acetaminophen or the addition of regional techniques such as neuraxial blockade or peripheral nerve blocks.

Pain Assessment

The new *Intermountain Pain Assessment tool (iPAT)* identifies a baseline of patient-reported pain before therapy, treatment, or surgery, providing the foundation for and subsequent evaluation of an appropriate pain management plan.



PAIN MEDICATION SAFETY

Using the booklet, *Managing Your Pain after a Medical Procedure*, talk with patients and their families about:



- Safely taking pain medications
- Dealing with the potential side effects of pain medications (constipation, drowsiness, confusion, and depressed breathing)
- Managing pain without medication (heat/cold therapy, relaxation or meditation, massage, spiritual or emotional counseling)
- Avoiding dependency (see *Cutting Back on Opioid Pain Medication*)

Use teach-back strategies with patients and families to emphasize key safety guidelines. Caution patients that NOT following these guidelines could result in serious complications or death.


For more information, see *Management of Chronic Non-Cancer Pain CPM* and the *Tapering Opioid Pain Medication Clinical Guideline*.

▶ ALGORITHM 2: POST-OPERATIVE CARE

Patient moved from surgery to PACU

PERFORM post-anesthesia care

USE Geriatric Hip Fracture Peri-op Power Plan/ANES adult peri-operative order set in iCentra — Key Points:

- **Pain Management:** Use the iPAT (see [page 7](#)); administer post-op PACU medications. 
- **Monitoring:** Follow the *Modified Aldrete Scoring System*; monitor core temperature, HR, BP; assess for respiratory distress; monitor risks associated with blood transfusion, if indicated.
- **Imaging:** X-ray to confirm hardware placement.
- **Criteria for transition to surgical floor:** Follow the *Modified Aldrete Scoring System*; active PSO.

NOTE: Patient must be classified as in-patient for full reimbursement, even if discharged the same day.

Patient meets criteria for transfer to surgical floor?


no

MEDIATE patient-specific issues

yes

MOVE patient to floor and PERFORM surgical floor tasks

MANAGE pain

- **Set realistic pain management goal:** Use the iPAT (see [page 7](#)); administer post-op medications specific to a geriatric patient.
- Review care plan with patient  and family.
- **Use appropriate interventions:** Medications, nerve blocks, repositioning, etc.
- **Assess and reassess:** See the [Acute Pain Opioid Prescribing Guidelines](#).

FACILITATE mobilization

- **Ensure early mobilization (as appropriate) via:**
 - Patient getting out of bed in less than 6 hours after arriving at floor.^{MAL}
 - PT assessment scheduled within 24 hours post-op (see [page 9](#))
 - Daily PT therapy sessions held (see [page 9](#))
 - OT evaluation and treatment, as indicated

EDUCATE/PLAN care transition

- **Use the GHF Discharge Destination Algorithm** (see [page 10](#)).
- Sign patient choice and durable medical equipment (DME) forms.
- Ensure ADL teaching (OT/RN/PT)
- Use in-room TV for exercise and education reminders

MONITOR other risks

- **Evaluate labs**, including PT/INR if patient taking warfarin (Coumadin®) and renal function if taking a direct oral anticoagulant (e.g., apixaban, rivaroxaban).
- **Assess for respiratory distress/other complications** (see [page 5](#))
- **Conduct respiratory incentive spirometry** and training (see [Incentive Spirometry Pediatric Adult Procedure](#))
- **Conduct skin assessment.** Provide Q2 turning and OOB as much as possible

CONDUCT Interdisciplinary Team Review

DISCHARGE per algorithm on [page 11](#)

yes

Is patient medically cleared for discharge?

no

TREAT/REFER as appropriate

► POST-SURGICAL PHYSICAL THERAPY

Inpatient occupational and physical therapy consults

Following surgery (typically during 24 hours post-op), a physical therapist will meet with the patient to conduct an initial assessment and create a post-op physical therapy (PT) plan. Patients who have had a spinal block should have full return of sensation and motor control for 30 minutes prior to initiation of PT assessment/ intervention. The PT assessment typically includes:

- Reviewing medical history
- Identifying patient discharge disposition goals
- Assessing balance and fall risk
- Analyzing gait
- Assessing range of motion (ROM), including hip flexion, extension, abduction, adduction

The resulting plan will focus primarily on achieving optimum discharge disposition goals, **particularly those associated with discharge to home**. In daily visits during the hospital stay, the physical therapist will guide the patient to do ROM and strengthening exercises and do activities of daily living (ADLs), such as getting in and out of chairs and bed as well as a car, dressing, showering, and using stairs (if required at home). The goal of these PT sessions is to help the patient transition to home and outpatient physical therapy, if indicated.

Occupational therapy is essential for reassimilation into the home environment. Occupational therapists instruct patients and families on safe transitions, bathing, cooking, seating, ambulating (with and without assistive devices), and dressing as well as determining needs for specialized medical equipment. Instruction begins in the inpatient or rehabilitation facility and continues when and if the patient is discharged to home. The patient's need for occupational therapy should be considered during the discharge assessment.

Outpatient physical therapy (as indicated)

During an initial outpatient physical therapy session, patient evaluation will build on the assessment and planning done during the patient's hospital stay, focusing on the patient's ultimate activity goals. The physical therapist works with the patient to set interim goals, which will be reevaluated and reset every 30 days. At each subsequent visit, the physical therapist re-evaluates and prioritizes at least one therapy component (e.g., ROM, strength, balance, etc.), personalizing activities for the patient's goals and progress.

Release criteria for patients participating in outpatient physical therapy includes independent gait for length of time/distance established in initial goals and a facilitated transition to a long-term exercise plan.

When outpatient physical therapy is indicated, emphasize home exercise compliance by delineating with the patient what to do daily at home versus at an outpatient clinic. Compliance is key to reducing outpatient visits and improving outcomes.



HIP FRACTURE POST-OP PRECAUTIONS

Anterior approach — Caution patient to **NOT**:

- Extend the hip excessively
- Externally rotate leg excessively
- Only lie on side or back (not stomach)

Posterior approach — Caution patient to **NOT**:

- Bend the hip past a 90-degree angle
(Knees must not be higher than hips when seated or lying down)
- Cross the legs (at knees or ankles)
- Twist (No turning knees and toes in)
- Reach with elbows inside knees

Geriatric hip fracture (GHF) patients may require significant support from family or friends in the home environment; patient safety is our first priority. For this reason, a greater percentage of GHF patients are discharged to SNF and rehab facilities. Each patient and case should be evaluated by the multidisciplinary team to determine the most appropriate discharge disposition.

ALGORITHM 3: GHF DISCHARGE CONSIDERATIONS



Indicates an Intermountain measure

PATIENT Medically Cleared for Discharge

*For any supported discharge, ensure consideration of patient / family choice.

Patient meets criteria to go home (a)?

no*

yes

EVALUATE if patient qualifies for Inpatient Rehab Facility (IRF)

For CMS reimbursement, the patient must (ALL apply):^{CMS1}

- Require active and ongoing therapeutic intervention of multiple therapies (2 of 3 types: PT, OT, SLP)
- Require intensive and coordinated rehab therapy at least 3 hours/day at least 5 days/week on an individual basis
- Be reasonably expected to actively participate in, and benefit significantly from, intensive rehab therapy, resulting in measurable improvement of functional capacity or adaptation to impairments as compared to start of treatment**
- Require supervision by a rehabilitation physician in face-to-face visits at least 3 days per week throughout patient IRF stay

Additional system-wide requirements include that the patient:

- Is medically stable
- Requires daily nursing assessment, treatment, monitoring, or education
- Is unable to receive necessary medical/rehab at lower level of care

DISCHARGE TO HOME with home health or outpatient therapy as indicated (b)

**Note: CMS reimbursement would NEVER be denied if patient could not be expected to gain complete independence in the domain of self-care OR to return to prior level of functioning.

Patient meets the reimbursement criteria for discharge to inpatient rehab facility (IRF)?

no

yes

DISCHARGE TO IRF

EVALUATE if patient qualifies for "authorized" skilled nursing facility (SNF)

OR

EVALUATE if patient qualifies for "authorized" long-term acute care hospital (LTACH)

Insurance-covered care requires skilled nursing (or rehabilitation staff) to manage, observe, and evaluate treatment plan (e.g., intravenous injections, physical therapy). Medicare will only cover skilled care when there is the following:^{CMS1, 2}

- Physician order to discharge to SNF
- Inpatient stay of 3 consecutive days
- Level of assist (c) that exceeds available support in the home setting; defer to formal therapy evaluation for patient assist needs
- Therapy that is unavailable on an outpatient basis or transport to outpatient facility would be problematic

ALL must apply:

- Needed level of assist (c) exceeds available support in the home setting; defer to formal therapy evaluation for patient assist needs
- Other skilled needs that require ≥6.5 hours of skilled care/day
- Daily medical practitioner assessment, treatment, monitoring, or education
- Patient needs LTACH care for > 30 days

Patient meets criteria for authorized discharge to a skilled nursing facility (SNF)?

yes

no

DISCHARGE to SNF as "authorized"

DISCHARGE to SNF as "self pay," OR use alternate transition planning strategies (d)

Patient meets criteria for authorized discharge to an LTACH?

yes

no

DISCHARGE to LTACH

DISCHARGE using alternate transition planning strategies (d)

(a) Criteria for discharge to home

- Patient has the ability to function at a level that matches their home environment and support system.
- If assistance or supervision is needed, a caregiver has been identified, trained, and approved for providing that care or supervision.
- Arrangements have been made for follow up with orthopedic specialist (ideally) < 7 days post discharge.
- Home health or outpatient therapy needs have been identified and the initial appointments scheduled.
- The patient and/or caregiver has received fall prevention education, medication education, and any other teaching (e.g., comorbidities, behavior change, etc.) and is considered competent to implement skills taught.
- The need for durable medical equipment has been assessed and arrangements made for critical equipment to be available in the home in a reasonable amount of time post discharge.
- Medication teach back performed indicates competency.

(b) Criteria for home health and outpatient physical therapy

- Home therapy has been ordered for patient deficits; consider physical therapy follow up.
- Initial therapy or home health appointment has been scheduled prior to discharge.
- For homebound patients (those confined to home due to a medical condition, heavily dependent on another person to be able to leave the residence, or able leave home only occasionally for short durations or for necessary health care visits), consider home health. Ensure that:
 - The patient requires skilled nursing or physical therapy.
 - Medicare patients have a physician face-to-face encounter in place.
- Outpatient therapies have been ordered for any patient who does not meet above criteria but needs ongoing therapies.

(c) Level-of-assist terminology

Levels of assist should be:

- Based on FIM[®] terminology (see [Level of Assist Terminology Clinical Guideline](#), available by password within the Intermountain firewall only)
- Determined on a case-by-case basis following a formal therapy evaluation and considering the staff available at home or the receiving facility

(d) Alternate transition planning strategies

Explore other safe transitions that may or may not be covered by the patient's insurance, such as:

- 24/7 sitters
- Custodial care
- Assisted living/facility for non-skilled care

FALLS PREVENTION

Falls are the leading cause of injury to the elderly in the U.S. and result in higher health care costs and demands. The causes of falls vary, and those that result in fracture and hospitalization should be investigated and considered during treatment and discharge planning. Modifiable risk factors include:

- **Medication side effects.** Loss of balance confidence is often associated with the use of certain medications.^{DEJ} The following drugs are associated with an increased risk for falls:
 - Antidepressants
 - Neuroleptics
 - Antipsychotics
 - Hypnotics and benzodiazepines
 - NSAIDs

In addition, certain drugs and environmental chemicals are associated with **ototoxicity**. Ototoxicity destroys the hair cells in the inner ear, as well as the vestibulocochlear nerve that links the inner ear to the brain, altering the balance signals coming from the inner ear.^{HAY, BLA}

- **Balance dysfunction.** Lack of balance confidence may compromise rehabilitation and recovery. Geriatric hip fracture patients should be assessed for:
 - Postural dysfunction, which may be compounded by weight, deconditioning, depression, trauma, bone degeneration, and chronic pain
 - Lack of assistive devices or non-use of prescribed assistive devices
 - Deterioration of the myelin sheath on vestibulocochlear (eighth cranial) nerve

If balance dysfunction is established, it is recommended that the patients be receive appropriate physical and occupational therapy to reduce risk factors and re-establish balance confidence.^{POR, SH}

► RESOURCES

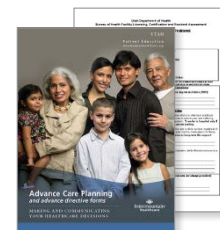
Intermountain patient and family education

Written materials can support your efforts to educate patients and engage them to change behavior but do not replace direct, personal contact.

Advance directives

Almost half of patients >60 require decisions about treatment in the final days of life. Advance directives ensure that their wishes concerning care are observed, even if they lack decision-making capacity. This underscores the importance of having such information understood and documented.

It is recommended that patients who retain decision skills receive the opportunity to complete an advanced directive and POLST form (Physician Order for Life-Sustaining Treatment) if they don't already have one. Surgeons should discuss these issues with the patient and family preoperatively (see resources at right.)



Advance Directive resources:

- [Advance Directives: Honoring your wishes for healthcare fact sheet](#)
- [Utah Advance Care Planning booklet and forms](#)
- [Idaho Advance Care Planning booklet and forms](#)
- [Utah POLST Form](#)
- [Idaho POLST Form](#)

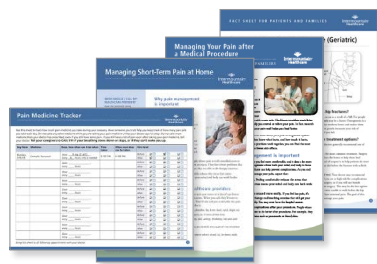
Where to find patient education

All of the materials listed on this page are available in both English and Spanish. To access these materials:

- **As the iCentra EMR system is implemented**, search for Intermountain items in the patient education module.
- **Log in to intermountainphysician.net**. Search for the patient education library under A-Z. Then, search the item number and title in the appropriate area.
- **Use iprintstore.org**. Clinicians can order Intermountain patient education booklets and fact sheets for distribution to their patients from Intermountain's iprintstore.org. Call 801-442-3186 for ordering information. If you need any assistance, email printservices@imail.org

Provider resources

Go to intermountainphysician.org/clinical/topics, and use the A to Z topic menu to link to this CPM as well as its associated [reference list](#) and [best-practice flash card](#).



Surgery Fact sheets:

- [Surgery to Repair a Hip Fracture](#)
- [Managing Your Pain After a Medical Procedure](#)
- [Managing Short-Term Pain at Home](#)
- [Surgical Site Infection](#)
- [Pain Medicine Tracker](#)



Safety Fact sheets:

- [Medicine Safety and Seniors](#)
- [Prevent a Fall \(inpatient\): Adults](#)
- [Fall Prevention Suggestions \(Homecare Series\)](#)
- [Folding Wheeled Walker](#)

CPM DEVELOPMENT TEAM

- | | | | | |
|--|-----------------------------|------------------------------------|----------------------------------|---|
| • David E. Skarda, MD
(Chair, Medical Director) | • Evelyn Chapman, MD | • Brent Hardy, RN | • Jane Sims, BA (Medical Writer) | • Prem Narayanan, MS |
| • Jeannette Prochazka, MSN, ACNS-BC
(Clinical Program Director) | • Harland N. Hayes, MD | • Brady Ewing | • Jessica Jukes, RN, MSN | • Pualani Jorgensen, RN |
| • Adam Balls, MD | • Justin Hawes, MD | • Becky Davis, RN, MSN | • Joey Douglass, RN | • Roger Petersen, MBA, PT, OCS |
| • Beau Bailey, MD | • Linda Venner, MD | • Chad Garner, RN | • Karen Winters, RN, MSN | • Shelly Brimhall, RN, MSN
(Program Coordinator) |
| • Brady Barker, MD | • Mark Stevens, MD | • Crystal Sovereign, RN | • Keri McAfee, RN MBA | • Susan Nielsen, RN |
| • Brian Oliver, MD | • Randy Clark, MD | • Darren Obray, RN | • Kimberly Kinkowski, RN, MSN | • Ted Aiken, RN |
| • Bryan C. King, MD | • R. J. Bunnell, MD | • David Kay, MSN | • Larissa Jimerson, RN, BSN | • Tess Reinhardt, RN, BSN, Case Manager |
| • David Pendley, MD | • Robert Nakken, MD | • Dillon Hofeling MBA/IM, RN, CNOR | • Mark Jensen, BS | • Travis Fullmer, RN |
| • Dustin Armstrong, MD | • Sue Berkebile, MD | • Dusty Clegg, RN, MSN | • Nancy C. Nelson, RN, MS | • Travis Talbot, RN, BSN, MBAHM, ONC |
| | • Warren L. Butterfield, MD | • Emily Lowe, RN | • Nancy Ostermiller, RN, MSN | • Wendy Gort, MBA |
| | • William Bacon, MD | | • Patricia Watkins, RN, MSN | |



This CPM presents a model of best care based on the best available scientific evidence at the time of publication. It is not a prescription for every physician or every patient, nor does it replace clinical judgment. All statements, protocols, and recommendations herein are viewed as transitory and iterative. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to David E. Skarda, Medical Director, Surgical Services Clinical Program, Intermountain Healthcare, David.Skarda@imail2.org.