**Acute Care Hip Fracture Clinical Pathway**

**Date:**

<table>
<thead>
<tr>
<th>Procedure:</th>
<th>HF SIDE:</th>
<th>RIGHT</th>
<th>LEFT</th>
<th>DISCHARGE DESTINATION:</th>
<th>INPATIENT REHAB</th>
<th>HOME</th>
<th>LTC</th>
</tr>
</thead>
</table>

| **Preoperative** | **TARGET DISCHARGE DATE**
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Emergency or Inpatient)</td>
<td></td>
</tr>
</tbody>
</table>


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### Interventions and care pathway to be supported by physician orders.

<table>
<thead>
<tr>
<th>1. Assessment</th>
<th>Preoperative assessment completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Consults from clinical services are to be available to consider co-morbidities, need for epidural and other clinical issues (e.g. anesthesia and/or internal medicine, Acute Pain Service, Thrombo-embolis Service, Geriatrician, Occupational Therapy)¹</td>
</tr>
<tr>
<td></td>
<td>Skin assessment completed including use of foot booties as per protocol</td>
</tr>
<tr>
<td></td>
<td>Falls risk assessment completed (See Appendix B: St. Michael’s Falls Risk Assessment Profile)</td>
</tr>
<tr>
<td></td>
<td>Bowel assessment completed</td>
</tr>
<tr>
<td></td>
<td>Pain assessment completed</td>
</tr>
<tr>
<td></td>
<td>Screen for factors that may delay discharge and develop a plan of care to begin addressing the identified barriers to discharge, including bariatric equipment needs</td>
</tr>
<tr>
<td></td>
<td>Treatments implemented as per protocols</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</th>
<th>Document Baseline Functioning &amp; Mental Status – hx of previous delirium, dementia and/or depression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization.² (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)</td>
</tr>
<tr>
<td></td>
<td>Consider referral for geriatric/internal medicine consultation</td>
</tr>
<tr>
<td></td>
<td>Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, pain management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Tests</th>
<th>Blood work (as per protocol, if existing delirium or high risk of delirium include B12, TSH, CBC, GBCL, Liver profile)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X-ray of index joint (as per protocol)</td>
</tr>
<tr>
<td></td>
<td>Chest x-ray (as per protocol)</td>
</tr>
<tr>
<td></td>
<td>ECG (age &gt;45 or as per protocol)</td>
</tr>
<tr>
<td></td>
<td>Urine sample (as per protocol if there is an existing delirium or high risk of delirium)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Medication</th>
<th>Obtain medication profile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pain assessment and management by Acute Pain Service (as per protocol)</td>
</tr>
<tr>
<td></td>
<td>Education: post op pain management (as per protocol) pt ___family</td>
</tr>
<tr>
<td></td>
<td>Education: post op DVT prophylaxis (as per protocol)</td>
</tr>
<tr>
<td></td>
<td>Education: antibiotic prophylaxis (as per protocol)</td>
</tr>
<tr>
<td></td>
<td>Reconciliation of medications as per pharmacist</td>
</tr>
<tr>
<td></td>
<td>(See Appendix E: Sunnybrook Health Sciences Centre Admission Orders for Hip Fracture)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Osteoporosis Strategy</th>
<th>Consider implementation of Osteoporosis Strategy³</th>
</tr>
</thead>
</table>

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¹ Adapted from the Bone and Joint Health Network’s Acute Care Hip Fracture Clinical Pathway June 2009 by the GTA Rehab Network in 2011

² Recommend each hospital develop criteria to determine the types of consults that are to be made available in the preoperative phase and under what circumstances they should be requested.

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interventions and care pathway to be supported by physician orders.</strong> (October 2011)</td>
<td></td>
</tr>
</tbody>
</table>
| **6. Fluid Nutrition Elimination** | Canadian Anesthesiologists’ Society guidelines for fasting are:  
2 hours – clear fluids  
26 hours – light meals (i.e. toast, non-human milk)  
28 hours – heavy meals (i.e. meat, fried or fatty foods)  
If the patient’s call to surgery is delayed, the effects of fasting are to be reviewed and the patient’s nutritional status to be restored and maintained.  
Consider feeding protocol for patients “on call” (See Appendix G: Mount Sinai Pre-printed diet guidelines order set)  
Breakfast – clear fluids, high protein drink  
NPO status  
IV when NPO as per protocol |
| **7. Activity / Mobility** | Bedrest – reposition q2h  
Ed: Post op PT protocols |
| **8. Client / Family Perspective** | Education: Overall clinical pathway  
Provide education materials – Information for Hip Fracture Patients (See Appendix H)  
Education: Hip Precautions  
Education: Discharge destination home/inpt rehab/LTC  
Concerns / questions addressed |
| **9. Discharge Planning** | Consult clinical team/Social work re: discharge planning  
Establish discharge plan and goals |

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5 Current literature suggests that a complete NPO status is not necessary; patients should be able to eat light meals or have clear fluids while on call to OR. See Appendix G for Mount Sinai’s pre-printed order set with diet guidelines. See also: Task Force on Preoperative Fasting and the Use of Pharmacologic Agents to Reduce the Risk of Pulmonary Aspiration. Practice guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration. Anesthesiology, 1999, Vol 90 Issue 3 pp 896-905; Bird, C. No need to starve. Nursing Standard. 2000. 14(41), 20.
<table>
<thead>
<tr>
<th>Date: __________</th>
<th>Arrived on unit ______ hr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interventions and care pathway to be supported by physician orders.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1. Assessment</strong></td>
<td>Assessment of VS, level of consciousness / airway, SaO₂, CSM/Pedal Pulses,</td>
</tr>
<tr>
<td></td>
<td>Dressings</td>
</tr>
<tr>
<td></td>
<td>Skin assessment and intervention as per hospital protocols</td>
</tr>
<tr>
<td><strong>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</strong></td>
<td>Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids</td>
</tr>
<tr>
<td></td>
<td>Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization.⁷</td>
</tr>
<tr>
<td><strong>3. Tests</strong></td>
<td>Blood work: CBC (if requested)</td>
</tr>
<tr>
<td></td>
<td>X-ray: AP hip (as per protocol)</td>
</tr>
<tr>
<td><strong>4. Treatments</strong></td>
<td>O₂ to keep SaO₂ ≥ 96% ⁸⁻⁹ (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</td>
</tr>
<tr>
<td></td>
<td>Blood transfusion if required</td>
</tr>
<tr>
<td></td>
<td>Apply off-loading heel boot to operated side, monitor skin integrity and alternate heel boot q2.</td>
</tr>
<tr>
<td><strong>5. Medication</strong></td>
<td>Post op pain management (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</td>
</tr>
<tr>
<td><strong>6. Fluid Nutrition Elimination</strong></td>
<td>NPO (sips of water)</td>
</tr>
<tr>
<td></td>
<td>IV fluids as per protocol</td>
</tr>
<tr>
<td></td>
<td>Monitor urine output</td>
</tr>
<tr>
<td></td>
<td>If OR cancelled, resume previous diet</td>
</tr>
<tr>
<td><strong>7. Activity / Mobility</strong></td>
<td>Deep Breathing</td>
</tr>
<tr>
<td></td>
<td>Review THR precautions (Is abduction pillow indicated?)</td>
</tr>
<tr>
<td><strong>8. Client / Family Perspective</strong></td>
<td>Family informed of patients status</td>
</tr>
<tr>
<td><strong>9. Discharge Planning</strong></td>
<td>Patient transferred to unit when stable</td>
</tr>
</tbody>
</table>


Interventions and care pathway to be supported by physician orders.

1. Assessment
   Assessment as per protocol:
   - Consults from clinical services are to be available to consider co-morbidities, need for epidural and other clinical issues (e.g. anesthesia and/or internal medicine, Acute Pain Service, Thrombo-embolis Service, Geriatrician, Occupational Therapy)\(^\text{10}\)
   - VS / LOC q4h if stable
   - CSM q8h
   - SaO\(_2\) q4h
   - Dressings assess q4h
   - Pain assessment q4h and prn
   - Assessment of wound (if applicable)
   Or more frequently as needed.

2. Prevention & Screening for Delirium, Dementia & Depression
   Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, mobility enhancement, non-pharmacological sleep enhancement.
   Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization.\(^\text{11}\)
   (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)
   Assessment for delirium – CAM (See Appendix I)
   If distressed, consider pharmacological management only if necessary

3. Treatments
   Titrate O\(_2\) to keep SaO\(_2\) ≥96%\(^\text{12} 13\) (unless otherwise medically indicated) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)

4. Medication
   - Post op pain management (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)
   - Antibiotic (as per protocol)
   - DVT prophylaxis
   - Antiemetics as required (as per protocol)
   - Medication Reconciliation including follow-up re: osteoporosis medication as indicated\(^\text{14}\)

5. Fluid Nutrition Elimination
   DAT – high fibre as tolerated
   IV fluids as per protocol reduce to TKVO/saline lock when drinking well
   Foley catheter as per protocol\(^\text{15}\):
   1. Catheters are inserted only when medically necessary (see Criteria for Insertion of Indwelling Catheters, Appendix K) by a qualified clinician, are assessed daily and are removed as soon as possible.
   2. Ensure that the least invasive method is being used to meet your patient’s needs. Intermittent catheterization is less invasive than indwelling catheters.
   3. If you are concerned that your patient does not meet the Criteria for Insertion of Indwelling Catheters, (Appendix K) call MD for clarification
   - Monitor urine output
   - Start bowel routine: See Appendix L: Bowel Management Protocol (Sunnybrook Health Sciences Centre)

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\(^{10}\) Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.


6. **Activity / Mobility**

   - Activity as tolerated
     - Patient to be mobilized as soon as medically stable (i.e. within 12-24 hours of surgery):\(^{16}\)
       - Mobility can start with sitting/dangling in very frail patients but should progress to standing within 24 hours of surgery
       - Ambulation status to be posted at bedside
       - Weight-bearing status should be ‘as tolerated’; if not, discuss with surgeon regarding ambulation prognosis
       - Daily PT and OT (including weekends) to be provided

   - Observe THR precautions for hemiarthroplasty
   - Deep breathing: 10 deep breaths/hr, cough if secretions
   - Reposition Q2 while in bed

7. **Client / Family Perspective**

   - Provide emotional support

8. **Discharge Planning**

   - Consult clinical team/Social work re: discharge planning
   - Establish discharge plan and goals

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# Acute Care Hip Fracture Clinical Pathway

**Date: ____________**

**Arrived on unit __________ hr**

## Post-op Day 1

### Interventions and care pathway to be supported by physician orders.

1. **Assessment**
   - Assessment (as per protocol)
   - Assessment to consider the prevention, detection and management of the following potential risks within the first 5 days post-op: delirium, hypoxia, dehydration, heart failure, pneumonia, urinary tract infection, malnutrition, unmanaged pain, skin breakdown, over-sedation and insomnia.\(^{17}\)
   - VS q4
   - CSM q4
   - SaO₂ q4 until pt off O₂ D/C O₂ if ≥ 96% \(^{18}\) \(^{19}\)
   - (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)
   - Dressings BID
   - Pain q4h and prn (as per protocol)
   - Skin assessment (Recommendation in the National Hip Fracture Toolkit is that Braden scores are to be done on admission and every 72 hours thereafter. If a pressure sore is observed, daily Braden scores are to be performed.)\(^{20}\)
   - Bowel assessment
   - Consults from clinical services are to be available to consider co-morbidities and other clinical issues (e.g. internal medicine, Acute Pain Service, Thrombo-embolism Service, Geriatrician, Occupational Therapy)\(^{21}\)

2. **Prevention & Screening for Delirium, Dementia & Depression**
   - Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, mobility enhancement, non-pharmacological sleep enhancement.
   - Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization.\(^{22}\) (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)
   - Assessment for delirium – CAM (See Appendix J)
   - If distressed, consider pharmacological management only if necessary
   - Assessment of underlying causes of delirium may include B12, thyroid stimulating hormone (TSH), complete blood count (CBC), glucose, blood urea nitrogen, creatinine and electrolytes (GBCL) and liver profile.\(^{23}\)

3. **Tests**
   - CBC, Iytes, BUN, creatinine, BS (if diabetic)

4. **Treatments**
   - Titrate O₂ to keep SaO₂ ≥ 96% \(^{24}\) \(^{25}\) D/C if SaO₂ ≥ 96% on room air (take into consideration patients pre-existing levels)
   - (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)
   - Reassess oxygen requirements
   - Change wound dressing as per protocol

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### 5. Medication

<table>
<thead>
<tr>
<th>Interventions and care pathway to be supported by physician orders.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post op pain management</strong> (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</td>
</tr>
<tr>
<td>DVT prophylaxis (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</td>
</tr>
<tr>
<td>If tolerating diet, Vitamin D as per recommendations from the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. 26</td>
</tr>
</tbody>
</table>

### 6. Osteoporosis Strategy

<table>
<thead>
<tr>
<th>Consider implementation of Osteoporosis Strategy 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components of osteoporosis assessment to include: 27</td>
</tr>
<tr>
<td>• Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael’s Falls Risk Assessment Profile)</td>
</tr>
<tr>
<td>• Provide nutritional counselling</td>
</tr>
<tr>
<td>• Address vitamin D insufficiency</td>
</tr>
<tr>
<td>• Consider pharmacological treatment in previously untreated patients</td>
</tr>
<tr>
<td>• Continue pharmacologic treatment in previously treated patients</td>
</tr>
<tr>
<td>• Do not delay treatment initiation in order to obtain Bone Mineral Density results</td>
</tr>
<tr>
<td>Communicate treatment plans to family physician (See Osteoporosis Canada website for Family Physician Information Form, <a href="http://www.osteoporosis.ca/multimedia/tools.html">www.osteoporosis.ca/multimedia/tools.html</a>)</td>
</tr>
</tbody>
</table>

### 7. Fluid Nutrition Elimination

<table>
<thead>
<tr>
<th>Continue high fiber diet as tolerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor dietary intake &amp; output q shift (bowel sounds and bowel movement)</td>
</tr>
<tr>
<td>IV fluids as per protocol, D/C when drinking well</td>
</tr>
<tr>
<td>Foley catheter as per protocol 28</td>
</tr>
<tr>
<td>1. Catheters are inserted only when medically necessary (see Criteria for Insertion of Indwelling Catheters, Appendix K) by a qualified clinician, are assessed daily and are removed as soon as possible.</td>
</tr>
<tr>
<td>2. Ensure that the least invasive method is being used to meet your patient’s needs. Intermittent catheterization is less invasive than indwelling catheters.</td>
</tr>
<tr>
<td>3. If you are concerned that your patient does not meet the Criteria for Insertion of Indwelling Catheters, (Appendix K) call MD for clarification</td>
</tr>
<tr>
<td>Monitor urine output / urinary retention</td>
</tr>
<tr>
<td>Bowel routine (as per protocol) (See Appendix L: Bowel Management Protocol [Sunnybrook Health Sciences Centre])</td>
</tr>
</tbody>
</table>

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Interventions and care pathway to be supported by physician orders.

## 8. Activity / Mobility
- PT assessment required for mobilization and identification of treatment goals
- RN/Clinical team to assist with mobilization as per PT recommendation
- Assess pain prior to mobilization.
- OT assessment as required
- Up in chair with assistance – Patient to spend as much of the day as tolerated out of bed to encourage cognitive alertness and promote activity participation and independent self-care.²⁹

**As per PT recommendations:**
- Patient to be up in chair for meals
- Patient to be assisted in transfer to commode for purpose of promoting bowel function
- Encourage deep breathing & coughing
- Education: Hip Precautions
- Active / assisted bed exercises
- THR begin AAROM exercises
- Teach safe transfer techniques

- Gait training begin assisted walking if stable
- Weight Bearing as tolerated: (unless otherwise stated by MD)
  - [ ] TWB
  - [ ] WBAT
  - [ ] PWB: 50%
  - [ ] NWB

## 9. Client / Family Perspective
- Identify and address patient / family concerns
- Provide education, if applicable, regarding delirium, dementia and depression (See Appendix M: Sunnybrook Health Sciences Centre Delirium Pamphlet for patients and families)

## 10. Discharge Planning
- Consult clinical team/Social work re: discharge planning
- Establish discharge plan and goals

---
### Interventions and care pathway to be supported by physician orders.

#### 1. Assessment

<table>
<thead>
<tr>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment as per protocol:</td>
</tr>
<tr>
<td>- Assessment to consider the prevention, detection and management of the following potential risks within the first 5 days post-op: delirium, hypoxia, dehydration, heart failure, pneumonia, urinary tract infection, malnutrition, unmanaged pain, skin breakdown, over-sedation and insomnia.</td>
</tr>
<tr>
<td>- VS q shift if stable</td>
</tr>
<tr>
<td>- CSM q shift if stable</td>
</tr>
<tr>
<td>- SaO₂ q shift if stable until pt off O₂ D/C O₂ if &gt;96%</td>
</tr>
<tr>
<td>(See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</td>
</tr>
<tr>
<td>- Incision check q shift</td>
</tr>
<tr>
<td>- Pain q4h and prn</td>
</tr>
<tr>
<td>- Bowel assessment</td>
</tr>
<tr>
<td>- Skin assessment (Recommendation in the National Hip Fracture Toolkit is that Braden scores are to be done on admission and every 72 hours thereafter. If a pressure sore is observed, daily Braden scores are to be performed.)</td>
</tr>
<tr>
<td>- Consults from clinical services are to be available to consider co-morbidities and other clinical issues (e.g. internal medicine, Acute Pain Service, Thrombo-embolism Service, Geriatrician, Occupational Therapy)</td>
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<tr>
<td>Or as frequently as needed</td>
</tr>
</tbody>
</table>

#### 2. Prevention & Screening for Delirium, Dementia & Depression

<table>
<thead>
<tr>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, mobility enhancement, non-pharmacological sleep enhancement.</td>
</tr>
<tr>
<td>Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization.</td>
</tr>
<tr>
<td>(See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)</td>
</tr>
<tr>
<td>- Assessment for delirium – CAM (See Appendix J)</td>
</tr>
<tr>
<td>- If distressed, consider pharmacological management only if necessary</td>
</tr>
<tr>
<td>- Screen for Dementia – MMSE baseline (See Appendix N)</td>
</tr>
<tr>
<td>- Assessment of underlying causes of delirium may include B12, thyroid stimulating hormone (TSH), complete blood count (CBC), glucose, blood urea nitrogen, creatinine and electrolytes (GBCL) and liver profile.</td>
</tr>
</tbody>
</table>

#### 3. Tests

<table>
<thead>
<tr>
<th>Interventions</th>
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</thead>
<tbody>
<tr>
<td>CBC, lyles, creatinine, PT/INR if taking warfarin post-op, BS (if diabetic) on post op Day 3</td>
</tr>
<tr>
<td>Daily INR only for patients on warfarin</td>
</tr>
</tbody>
</table>

#### 4. Treatments

<table>
<thead>
<tr>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titrate O₂ to keep SaO₂ ≥ 96%</td>
</tr>
<tr>
<td>- D/C is SaO₂ ≥ 96% on room air (take into consideration patient’s pre-existing levels) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</td>
</tr>
<tr>
<td>- Change wound dressings (as per protocol)</td>
</tr>
<tr>
<td>- Inform MD of INR results for Warfarin order (if applicable)</td>
</tr>
<tr>
<td>- Blood transfusion (as per protocol) – if needed</td>
</tr>
</tbody>
</table>

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34 Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.
39 Typically, oxygen is only needed for 48 hours post op. By that time, patients should be ambulating and able to maintain pre op saturation levels. If this is not the case it would be a ‘variance’ and deemed further assessment by the physician.
| 5. Medication | Post op pain management - oral analgesics (as per protocol)  
DVT prophylaxis  
Antiemetics as required  
(See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)  
If tolerating diet, Vitamin D as per recommendations from the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.  
Also see Appendix F for risk factors. |
| 6. Osteoporosis Strategy | Consider implementation of Osteoporosis Strategy  
Components of osteoporosis assessment to include:  
- Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael’s Falls Risk Assessment Profile)  
- Provide nutritional counselling  
- Address vitamin D insufficiency  
- Consider pharmacological treatment in previously untreated patients  
- Continue pharmacologic treatment in previously treated patients  
- Do not delay treatment initiation in order to obtain Bone Mineral Density results  
Provide Osteoporosis Pt/ Family Education – “Exercises to improve balance, strength and posture” (See Appendix O) |
| 7. Fluid Nutrition Elimination | DAT – high fibre as tolerated  
Monitor dietary intake & output q shift (bowel sounds and bowel movement)  
IV fluids as per protocol. D/C when drinking well  
D/C routine Foley catheter - Intermittent catheterization q 4-6 h prn to keep volumes ≤400cc  
Monitor urine output / urinary retention  
Referral for swallowing assessment if indicated  
Bowel routine (as per protocol) (See Appendix L: Bowel Management Protocol (Sunnybrook Health Sciences Centre)) |
| 8. Activity / Mobility | Ongoing mobilization by the clinical team as per PT recommendations:  
Patient to be up in chair for meals – Patient to spend as much of the day as tolerated out of bed to encourage cognitive alertness and promote activity participation and independent self-care.  
Patient to be assisted in transfer to commode for purpose of promoting bowel function  
Encourage deep breathing & coughing  
Continue Active / Assisted bed and chair exercises  
THR progress AAROM exercises  
THR review precautions  
Teach safe active assisted transfers from bed to chair and sit to stand  
OT intervention – assessment of ADLs & review of home equipment needs if plan for discharge home  
Gait training assisted walking in AM and PM |
| 9. Client / Family Perspective | Identify and address patient / family concerns |
| 10. Discharge Planning | Confirm discharge plan for all  
Refer to Inpt Rehab – Day 2 post-op |

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<table>
<thead>
<tr>
<th>Interventions and care pathway to be supported by physician orders.</th>
</tr>
</thead>
</table>

### 1. Assessment

- **Assessment (as per protocol):**
  - Assessment to consider the prevention, detection and management of the following potential risks within the first 5 days post-op: delirium, hypoxia, dehydration, heart failure, pneumonia, urinary tract infection, malnutrition, unmanaged pain, skin breakdown, over-sedation and insomnia.\(^4^4\)
  - VS q shift if stable
  - CSM q
  - SaO\(_2\) q until pt off O\(_2\), D/C O\(_2\) if $\geq 96\%$ \(^4^5\) \(^4^6\) \(^4^7\)
  - (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)
  - Incision check q
  - Pain q4h and prn
  - Bowel assessment

- **Skin assessment (Recommendation in the National Hip Fracture Toolkit is that Braden scores are to be done on admission and every 72 hours thereafter. If a pressure sore is observed, daily Braden scores are to be performed.)**\(^4^8\)

- **Consults from clinical services are to be available to consider co-morbidities and other clinical issues (e.g. internal medicine, Acute Pain Service, Thrombo-embolism Service, Geriatrician, Occupational Therapy)**\(^4^9\)

### 2. Prevention & Screening

- **Dementia & Depression**

- **Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, mobility enhancement, non-pharmacological sleep enhancement.**

- **Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization.**\(^5^0\) (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)

### 3. Tests

- INR if taking warfarin

### 4. Treatments

- Change wound dressings (as per protocol)
- Inform MD of INR results for Warfarin order (if applicable)

### 5. Medication

- **Post op pain management- oral analgesics (as per protocol) See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)**
- DVT prophylaxis
- Antiemetics as required: (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)
- If tolerating diet, Vitamin D as per recommendations from the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.\(^5^1\)

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\(^4^7\) Typically, oxygen is only needed for 48 hours post op. By that time, patients should be ambulating and able to maintain pre op saturation levels. If this is not the case it would be a ‘variance’ and deem further assessment by the physician.


\(^4^9\) Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.


6. **Osteoporosis Strategy**

Consider implementation of Osteoporosis Strategy. Components of osteoporosis assessment to include:
- Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael’s Falls Risk Assessment Profile)
- Provide nutritional counselling
- Address vitamin D insufficiency
- Consider pharmacological treatment in previously untreated patients
- Continue pharmacologic treatment in previously treated patients
- Do not delay treatment initiation in order to obtain Bone Mineral Density results

See Appendix O: Exercises to improve balance, strength and posture

7. **Fluid Nutrition Elimination**

<table>
<thead>
<tr>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>High fiberDAT as tolerated</td>
</tr>
<tr>
<td>Monitor dietary intake &amp; output q shift (bowel sounds)</td>
</tr>
<tr>
<td>IV fluids as per protocol. D/C when drinking well</td>
</tr>
<tr>
<td>Monitor urine output / urinary retention</td>
</tr>
<tr>
<td>Bowel routine (as per protocol) (See Appendix L: Bowel Management Protocol [Sunnybrook Health Sciences Centre])</td>
</tr>
</tbody>
</table>

8. **Activity / Mobility**

Ongoing mobilization by the clinical team as per PT recommendations:
- Patient to be up in chair for meals – Patient to spend as much of the day as tolerated out of bed to encourage cognitive alertness and promote activity participation and independent self-care.
- Patient to be assisted in transfer to commode for purpose of promoting bowel function
- Encourage deep breathing & coughing
- Continue Active / Assisted bed and chair exercises
- THR progress AAROM exercises
- THR review precautions
- Teach safe active assisted transfers from bed to chair and sit to stand
- PT treatments bid (as per protocol)
- OT intervention (as per protocol)
- Encourage independence in self care
- Gait training assisted walking in AM and PM
- Initiate stair climbing exercise with supervision if going home

9. **Client / Family Perspective**

Identify and address patient / family concerns

10. **Discharge Planning**

Confirm discharge plan for all
- Criteria for discharge to Inpatient Rehab to be met in AM of Day 5 post-op (medically stable) (See Appendix P: GTA Rehab Network’s Discharge Transfer Checklist)
- Confirm with CCAC re discharge home

Education: If patient going home on warfarin, Family Physician or warfarin supervisor to be personally contacted with a request to supervise warfarin, and informed of all in-hospital warfarin doses, all INR values and the next INR date.

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**References**


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[www.osteoporosis.ca/multimedia/tools.html](http://www.osteoporosis.ca/multimedia/tools.html) for the Osteoporosis and Fragility Fracture Management Order Set and additional information. Each hospital to determine its own standing orders.
Date: __________  Arrived on unit _____ hr  | Post-op Day 5 Target Discharge to Inpt Rehab/Home

**Interventions and care pathway to be supported by physician orders.**

### 1. Assessment
Assessment (as per protocol):  
Assessment to consider the prevention, detection and management of the following potential risks within the first 5 days post-op: delirium, hypoxia, dehydration, heart failure, pneumonia, urinary tract infection, malnutrition, unmanaged pain, skin breakdown, over-sedation and insomnia.  
VS q4  
CSM q4  
Incision check  
Pain q4h  
Bowel assessment  
Skin assessment (Recommendation in the National Hip Fracture Toolkit is that Braden scores are to be done on admission and every 72 hours thereafter. If a pressure sore is observed, daily Braden scores are to be performed.)  
Consults from clinical services are to be available to consider co-morbidities and other clinical issues (e.g. internal medicine, Acute Pain Service, Thrombo-embolism Service, Geriatrician, Occupational Therapy).

### 2. Prevention & Screening for Delirium, Dementia, & Depression
Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, mobility enhancement, non-pharmacological sleep enhancement.  
Consider the following 5 precipitating risk factors for the development of delirium: immobility, malnutrition, more than three medications added, use of bladder catheter, and any iatrogenic event during hospitalization. (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)  
Assessment for delirium – CAM (See Appendix I)  
If distressed, consider pharmacological management only if necessary  
Assessment of underlying causes of delirium may include B12, thyroid stimulating hormone (TSH), complete blood count (CBC), glucose, blood urea nitrogen, creatinine and electrolytes (GBCL) and liver profile.

### 3. Tests
- CBC, lytes, BUN/creatinine, BS (if diabetic)  
- INR if patient on warfarin and not discharged or transferred

### 4. Treatments
- Change wound dressings (as per protocol)  
- Inform MD of INR results for Warfarin order (if applicable)

### 5. Medication
- Post op pain management- oral analgesics (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)  
- DVT Prophylaxis  
- Antiemetics as required (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)  
- Bowel routine (as per protocol)  
- Vitamin D as per recommendations from the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.

---

58 Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.  
6. **Osteoporosis Strategy**

Consider implementation of Osteoporosis Strategy

Components of osteoporosis assessment to include:

- Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael’s Falls Risk Assessment Profile)
- Provide nutritional counselling
- Address vitamin D insufficiency
- Consider pharmacological treatment in previously untreated patients
- Continue pharmacologic treatment in previously treated patients
- Do not delay treatment initiation in order to obtain Bone Mineral Density results

Muscle strengthening, balance and posture exercises for OP management –PT (See Appendix O: Exercises to improve balance, strength and posture)

Communicate treatment plans to family physician (See Osteoporosis Canada website for Family Physician Information Form, [www.osteoporosis.ca/multimedia/tools.html](http://www.osteoporosis.ca/multimedia/tools.html))

7. **Fluid Nutrition**

- High fiber diet as tolerated
- Monitor dietary intake & output q shift (bowel sounds)
- Bowel routine (as per protocol) (See Appendix L: Bowel Management Protocol (Sunnybrook Health Sciences Centre))
- Monitor urine output / urinary retention q shift

8. **Activity / Mobility**

- PT treatments bid
- OT interventions (as per protocol)
- ADL and review of home equipment needs
- Encourage deep breathing and coughing
- Encourage independence in self care
- Continue Active / assisted bed and chair exercises
- THR progress AAROM exercises
- THR Hip Precautions (if necessary)
- Gait training assisted walking in AM and PM
- Teach safe active assisted transfers from bed to chair and sit to stand
- Continue stair climbing exercise with supervision if going home

9. **Client / Family Perspective**

Express confidence in activity level and safe precautions

10. **Discharge Planning**

Discharge Inpt Rehab or Home today

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APPENDIX A:
(Bone & Joint Health Network)
Quick Reference Guide
Improving Time to Surgery - Emergency Room, Preoperative and Immediate Postoperative Clinical Practice Guidelines for Hip Fracture Patient Management

The Ontario Orthopaedic Expert Panel through the Bone and Joint Health Network has developed a Provincial Hip Fracture Model of Care. This model flows patients across the health care continuum and provides best practice standardized guidelines for care. Integrated into this model is the target for 90% of hip fracture patients to receive surgery within 48 hrs of ER admission.

Recommendations to improve time to surgery for patients following a hip fracture have been developed and are outlined below. This Quick Reference Guide will provide healthcare professionals with a summary of the most important recommendations. For detailed information, consult the full guidelines document at www.boneandjointhealthnetwork.ca.

**Recommendation**
**Timely Surgery** - Early surgery within 48 hours of presentation to hospital should occur for most patients. Short delays may be justified to gain improvement in clinical condition. However, it is important not to pursue unrealistic medical goals with resulting delays.

Figure 1. Preoperative pathway algorithm for hip fracture patients to achieve timely surgery within 48 hours.
# RECOMMENDATIONS

## A. Emergency Room Care

1. **Triage, Early Recognition, Assessment and Diagnosis** - Early recognition of patients with a potential hip fracture requires higher prioritizing within the triage category. Established protocols or medical directives are useful to expedite diagnosis and treatment. Patient assessment should include mechanism of the fracture and associated injuries as well as a thorough review of co-existing health issues. Assessment should be timely:
   - Emergency physician/health team assessment within one hour of presentation.
   - Orthopaedic surgeon, anaesthesiology and/or internal medicine within two hours

   Patient review by the anaesthesiologist should determine the depth of investigations needed for safe perioperative care, and any necessary preoperative interventions (i.e. anticoagulation reversal).

2. **Immediate Management Issues**
   a. **Pain management** - Pain control is important and a multimodal approach should be considered using a more than one drug approach to provide better analgesia with fewer side effects. Most commonly, titration of intravenous opioids, such as morphine or hydromorphone are used for analgesia. Analgesics such as acetaminophen can be co-administered to enhance patient analgesia. A regional nerve block may be considered as an analgesia adjunct, especially for those who poorly tolerate systemic analgesics. Continuation of long-acting opioids for patients who have pre-existing chronic pain conditions should generally occur to ensure adequate analgesia and prevent withdrawal symptoms. Standardized pain assessment tools should be used to assess a patient’s level of discomfort.
   b. **Hydration** - Patients are frequently poorly hydrated on entry to the ER or may become dehydrated while waiting for surgery. Hydration, whether intravenous or oral should be assessed carefully and continuously monitored.
   c. **Prevention of pressure sores** – Prevention of pressure sores should include transfer to an appropriate hospital bed with a pressure-relieving mattress. Those at high risk should receive care using a large-cell, alternating-pressure air mattress or similar device. Consideration needs to be given to using soft surfaces to protect heels and the sacrum. Clinical judgment and identified assessment tools should be used to determine patients at risk.
   d. **Nutritional status** - All patients should have a nutritional assessment, so that protein and energy supplements can be provided as needed. Protein and energy feeds may reduce medical complications and mortality. Fasting guidelines are used to decrease the risk of aspiration in patients undergoing anesthesia. The Canadian Anesthesiologists’ Society guidelines for fasting are:
      - ≥ 2 hours – Clear fluids
      - ≥ 6 hours – Light meals (ie. toast, non-human milk)
      - ≥ 8 hours – Heavy meals (ie. meat, fried or fatty foods)
   e. **Reducing the potential for delirium** - These patients are at high risk for delirium both pre and post-operatively. The prevention of delirium is the most effective strategy for reducing its frequency and complications. It is important that interventions start in the ER.
   f. **Osteoporosis management** - Osteoporosis contributes significantly to the occurrence of a hip fracture. It is crucial that comprehensive interventions to prevent future fracture are initiated and become a routine part of hip fracture care without delay. This process should be initiated in the ER through bloodwork initiation.
   g. **Oxygen therapy** - Persistent hypoxia may be present in hip fracture patients from the time of emergency admission to 48 h after surgery. Patients should have oximetry assessment, and oxygen administered as necessary.
   h. **Urinary catheterization** - Avoid indwelling catheters as possible. These patients are frail older people that demonstrate a high incidence of urinary tract infections. Intermittent catheterization is preferable and has been shown not to increase the incidence of urinary tract infections.
   i. **Prophylactic antibiotics** - Hip fracture patients are at risk of infections of the chest, urinary tract and wound. The administration of prophylactic intravenous antibiotics should be given as a single dose at the induction of anaesthesia.
B. Preoperative Management

1. Management of Anticoagulation – Patients on anticoagulation require careful review by the anaesthesiologist, as neuraxial anesthesia may be contraindicated with certain types of anticoagulation. Appropriate discontinuation of anticoagulation prior to surgery offers opportunities for optimal care by allowing the choice between general anaesthesia and neuraxial anaesthesia (i.e. spinal or epidural).
   a. Management of patients on clopidogrel (plavix) - The goal for patients on clopidogrel should be early operative intervention to decrease morbidity and mortality associated with surgical delay for hip fracture patients. Current literature indicates are no serious surgical complications or increased transfusion requirements for these patients.
   b. Management of patients on warfarin (coumadin) - First-line therapy for the reversal of warfarin anticoagulation is Vitamin K. For surgery greater than six hours away, administration of intravenous Vitamin K (5-10mg) should be sufficient for reversal. If more urgent reversal is required (less than six hours), compounds such as prothrombin complex concentrate (PCC) (ie. Octaplex®) or frozen plasma (FP) may be considered along with the use of intravenous Vitamin K. PCC is probably the preferred choice over FP for those at risk for volume overload.

2. Assessment of LV function and Significant Valvulopathies – The importance of obtaining time consuming investigations i.e. echocardiography should be weighed against the complications associated with surgical delays >48 hours. Careful physical examination can sometimes rule out significant valvulopathies, such as severe aortic stenosis. Anaesthesiologists may consider heightened intraoperative monitoring (i.e. arterial waveform monitoring) when pre-operative cardiac investigations are not available in a timely fashion.

C. Anaesthesia Management

1. Types of Intra-operative Anaesthesia – Neuraxial vs. General Anaesthesia – Both general and neuraxial anaesthesia are commonplace for hip fracture surgery. Neuraxial anaesthesia may decrease post-operative confusion, thromboembolism development, intraoperative blood loss and short-term mortality. There are many reasons which preclude the use of neuraxial anaesthesia including anticoagulation, patient refusal, challenging anatomy and others, therefore in these situations general anaesthesia may be required. Ultimately, the choice of anaesthesia administered rests in the hands of the attending anaesthesiologist.

2. Postoperative Pain Management - Systemic opioids (ie. morphine) are the most common form of post-operative analgesia for hip fracture. Common side effects can be more pronounced in the elderly population. Patient Controlled Analgesia (PCA) devices allow patients to self-administer intravenous opioids according to timed dose parameters set by a physician. This allows the patient to self-titrate the medication to an optimal dose, maximizing analgesia while minimizing side-effects. However, the patient must be able to cognitively understand and use the PCA device. Also, multimodal approaches should be considered including regular orders for analgesia can while minimizing side effects. Standardized pain assessment tools should be used to assess a patient’s level of discomfort.

D. Surgical Management

1. Considerations in Types of Surgery - Careful preoperative planning must consider the level of patient demand and co-morbidity as well as the specifics of the fracture pattern and associated injuries or pre-existing musculoskeletal problems. Surgical tactics should be chosen that achieve maximal functional results while balancing the risk of implant failure, malunion, and surgical morbidity for the particular patient.

2. Immediate Weight Bearing - Immediate weight bearing for previously ambulatory hip fracture patients is of paramount importance in improving patient mortality and morbidity, reducing medical complications, minimizing hospital length of stay and most importantly improving functional outcome and the likelihood of future independent living. Recent advances in modern technology and implants allow for stable fixation, or replacement arthroplasty, in all cases of hip fracture. Also, patients limit their weight bearing dependant on the stability of the construct and failure rates have not increased.
E. Immediate Postoperative Management

1. Clinical Pathway - Clinical pathways help to support the standardization of care across the healthcare continuum, assisting patients through to their recovery, by providing a sequence and timing of interventions to meet patients’ discharge goals in an efficient timeframe. Clinical pathways have been effectively used preoperatively, as well as postoperatively during both the acute and rehabilitation phases of recovery.

2. Delirium, Dementia and Depression (3D’s) Screening and Management – Hip fracture patients are older people whereby their complex and multi-faceted nature contribute to the development of 3D conditions that are unrecognized, occur frequently, and often are poorly managed. Management of these challenging issues requires a multidisciplinary approach that includes targeted nursing and rehabilitation assessment and interventions to assess and treat cognitive issues on a daily basis, and in severe cases, pharmacological management through either the surgeon or another physician.

3. Thromboprophylaxis/ Anticoagulation - Following surgery, hip fracture patients should receive routine anticoagulation as per CHEST guidelines.

4. Rehabilitation and Early Mobilization - Rehabilitation and early mobilization through a coordinated multidisciplinary program is key to regaining sufficient function for patients to return to their pre-fracture living situation in the community. Rehabilitation should focus on addressing physical and function needs of the patient, and include transfer techniques, balance, and gait training.

F. Process Management

1. Operating Room Booking Priority Policy - Hip fracture patients access to the operating room usually begins at a priority type C, and as such they should receive surgery within 48 hours. In organizations where there are a high volumes of other patients already designated as priority type B, hip fracture patients regularly do not receive surgery within this 48 hour timeframe. In these cases, changing the Operating Room Booking Policy to upgrade hip fracture patients from priority type C to priority type B after 24 hours on the operating room wait list has been effective in increasing access to surgery within 48 hours.

2. Trauma Time - Sufficient operating room time is required to successfully manage trauma patients including those with a hip fracture. Designated orthopaedic trauma operating room time is a method to increase access to timely surgery. This designated time needs to available at regular intervals each week, either daily or 3 times weekly, to manage hip fracture patients within the 48 hour timeframe.

3. Regional Trauma Planning - The development of a regional trauma plan is recommended and may include a written agreement between healthcare organizations that includes clear expectations for timely acceptance for transfer of the patient for surgery, shared preoperative approaches, and timely repatriation of the patient back to the referral hospital for continued care.

4. Fast Tracking to Inpatient Unit within 4 Hours – Evidence suggests that fast tracking from the ER to the Inpatient unit is a good standard of clinical care for older people with a hip fracture, and contributes to improved pressure sore care.

5. Early Referral and Transfer to Home or Rehabilitation on Day 5 Postoperatively - Patients that experience a hip fracture and who were living successfully in the community should have the opportunity to return home again through early transition either home or to inpatient rehabilitation by Day 5 postoperatively.

6. Standardized Discharge Planning - Discharge planning requires effective, efficient and consistent processes. Potential discharge issues should be identified early in the process and this will enable maximum time to make preparations for a home supported discharge. The family physician or community care provider should be informed about the pending discharge and a follow-up appointment made within 2 weeks of discharge.
APPENDIX B:
Falls Risk Assessment
(St. Michael’s)
## Fall Risk Assessment Profile

### Initial Fall Risk Assessment

<table>
<thead>
<tr>
<th>FALL RISK CATEGORIES</th>
<th>Y/N</th>
<th>Y/N</th>
<th>Y/N</th>
<th>INDIVIDUALIZED INTERVENTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HISTORY OF FALLS WITHIN LAST 3 MONTHS</td>
<td></td>
<td></td>
<td></td>
<td>Implement Fall Risk Identifiers</td>
</tr>
<tr>
<td>HOBIC Fall Score ___ (0-3) and/or</td>
<td></td>
<td></td>
<td></td>
<td>Consent Obtained</td>
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<tr>
<td></td>
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<td>Safety Rounds q 1 hr or q 30 min ___ (RN)</td>
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<td>OT ____ Physio ____ Geriatrics</td>
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<td>Leave mobility device within patient’s reach</td>
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<td></td>
<td>Ambulation or RCM 3x/day</td>
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<td>Transfer to chair for ___ meals/day</td>
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<td></td>
<td>Side rails: ____ Pt request?</td>
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<td>____ x1 ____ x2 ____ x3</td>
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<td>BP Lying &amp; Standing x ____ days</td>
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<td>Educate patient to rise slowly from bed to standing (Count to ten)</td>
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<td>Consider mechanical lift if patient verbalizes weakness</td>
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<td></td>
<td></td>
<td></td>
<td>or fear of falling</td>
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<tr>
<td>IMPAIRED MOBILITY, BALANCE AND/OR GAIT Different from baseline</td>
<td></td>
<td></td>
<td></td>
<td>Assess/review for delirium and/or dementia</td>
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<td>Complete CAM as appropriate</td>
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<td></td>
<td>Suggest – CBC, serum lytes, BUN, Creat, Vit B12, TSH</td>
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<td></td>
<td></td>
<td>Urinalysis as appropriate</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Change room to enable closer observation</td>
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<td></td>
<td>Family at bedtime</td>
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<td></td>
<td>Consider need for constant care or high observation</td>
<td></td>
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<td></td>
<td></td>
<td>Assess use of restraint and ensure last resort as per Restraint Policy</td>
<td></td>
</tr>
<tr>
<td>IMPAIRED MENTAL STATUS e.g:</td>
<td></td>
<td></td>
<td></td>
<td>Commode or assist to bathroom</td>
</tr>
<tr>
<td>Delirium</td>
<td></td>
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<td></td>
<td>Bathroom light on at night</td>
</tr>
<tr>
<td>Dementia</td>
<td></td>
<td></td>
<td></td>
<td>Toileting and comfort rounds q2h (RN or delegate)</td>
</tr>
<tr>
<td>Confusion - NYD</td>
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<td></td>
<td></td>
<td>D/C foley catheter as soon as possible</td>
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<tr>
<td>SENSORY IMPAIRMENT</td>
<td></td>
<td></td>
<td></td>
<td>Glasses ____ hearing aid</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>____ hearing amplifier</td>
<td></td>
</tr>
<tr>
<td>MEDICATION REVIEW</td>
<td></td>
<td></td>
<td>New medication recently added</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Review of medications and suggest D/C where possible</td>
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<td></td>
<td>Pharmacy referral</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Assess need for IV access and D/C as soon as possible</td>
<td></td>
</tr>
<tr>
<td>OTHER (see back)</td>
<td></td>
<td></td>
<td></td>
<td>Other interventions:</td>
</tr>
</tbody>
</table>

### Fall Risk Re-assessment

### Fall Event Re-assessment

### Fall Event

- Date ______________________ Location/Time ______________________ ☐ Next of kin/SDM notified
- Date ______________________ Location/Time ______________________ ☐ Next of kin/SDM notified

Adapted with the permission of The Ottawa Hospital NPPD 2008
1. To be completed by RN within 24 hrs of patient admission IF positive HOBIC Fall Score and/or ClinDoc Fall Risk Factors identified.
2. If there is a significant change in the patient’s condition, or if the patient experiences a fall a reassessment MUST be completed.

INSTRUCTIONS:
1. Indicate with a Yes (Y) or No (N) if the risk category is applicable to the patient (use descriptors below as guide).
2. Check the appropriate additional intervention box(es) applicable to the patient to reduce the fall risk if necessary.
3. Check any additional interventions that are implemented following the initial assessment then sign and date the profile.
4. Fall Risk Identifiers: Fall Risk Sign above patient’s HOB; Fall Risk written in pencil on Kardex/CP; Fall Risk sticker on spine of patient’s chart. Consent needs to be obtained by patient or SDM and documented.
5. Once intervention is no longer appropriate, use a highlighter to identify it is discontinued.

NOTE: UNIVERSAL FOR SAFETY STANDARDS must be in place for ALL patients. PREVIOUS HISTORY OF FALLS AND IMPAIRED MOBILITY may put your patient at HIGHER RISK for falls.

1. HISTORY OF FALLS WITHIN LAST 3 MONTHS

- HOBIC FALL Score: 0 = No fall in last 90 days  
  1 = No fall in last 30 days but fell 31-90 days ago  
  2 = One fall in last 30 days  
  3 = Two or more falls in last 30 days

- Safety Rounds:
  - Ask if patient needs to use the bathroom/urinal is within reach  
  - Ensure call bell is within reach and encourage use  
  - Assess for pain  
  - Place items within reach (drink cup, tv, phone, tissue paper, urinal)

2. IMPAIRED MOBILITY, BALANCE AND/OR GAIT

- Requires assist (unsafe transfers) with transfers or ambulation  
- Unsteady when standing or sitting; shuffling; small steps; slow pace; holding onto health care professional, wall or furniture  
- Verbalizes feeling of weakness or fear of falling (consider using mechanical lift)  
- Verbalizes dizziness and/or vertigo on ambulation or during position change  
- Postural hypotension (drop in systolic blood pressure of 20mmHg)

3. IMPAIRED MENTAL STATUS

- GCS of ≤ 14  
- Delirium (or confusion Assessment Method “CAM” +); changes in level of alertness  
- Intermittent or constant “Disorientation”  
- Unable to follow/remember instructions  
- Agitated; attempts to get out of bed  
- Impaired thought processes, impaired judgment  
- Depression interfering with judgment

4. ALTERATION IN ELIMINATION (BOWEL AND BLADDER)

- Toileting and Comfort rounds: Assess if patient needs to go to the bathroom or be repositioned  
- Urgency, nocturia and/or episodes of incontinence

5. SENSORY IMPAIRMENT

- Impaired vision and/or hearing even with corrective aids  
- Ask family to obtain aids from home  
- Impaired communication/language; consider translator or OT, SLP referral

6. MEDICATION REVIEW

- Total of 5 medications (including over the counter & prescription drugs) OR one of the following categories: Psychotropic drugs, cardiovascular drugs, analgesics, anaesthetics

7. OTHER

- IV pole and/or other equipment  
- Unable to perform ADLs
APPENDIX C:

Delirium Algorithm and Patient Behaviour Safety Risk Algorithm
(Sunnybrook Health Sciences Centre)
Delirium Algorithm

Date: __________________________ Patient Name: __________________________
Date of Admission: __________________________ Location: __________________________
Attending Physician: __________________________ Algorithm Initiated by: __________________________

Criteria for Screening

The purpose of this algorithm is to identify those patients who are at risk for delirium or currently present with the clinical features of the illness. Any patient who presents with 2 or more risk factors or displays symptoms of delirium should be screened (Appendix A). Use of this algorithm will lead to the selection of appropriate interventions designed to prevent, detect or treat delirium.

DOES THE PATIENT HAVE A CURRENT DIAGNOSIS OF DELIRIUM?

YES

DOES THE PATIENT HAVE FEATURES OF DELIRIUM?

YES

PATIENT AND ENVIRONMENTAL RISK FACTORS

- History of Cognitive Impairment
- Acute/Multiple Illness (including acute infection)
- Dehydration
- Vision/Hearing Impairment
- Immobility

DEPRESSIVE SYMPTOMS

- > 75 years
- Surgery
- Prolonged Emergency Stay (> 12 hrs.)

PHARMACOLOGICAL RISK FACTORS

- Treatment with many drugs
- Psychotropic Medications
- Narcotics
- Anticholinergics
- Medication Withdrawal, including alcohol
- Other (see back)

ARE THERE 2 OR MORE RISK FACTORS PRESENT?

YES

1. Proceed with Confusion Assessment Method screening tool (Inouye, et al. 1990) (Appendix B)

NO

DOES THE PATIENT SCREEN POSITIVE FOR DELIRIUM?

YES

1. Notify attending physician and other team members as required.

2. Physician/NP to determine potential reversible causes of delirium by collecting baseline information (e.g., recent discontinuation of psychoactive drugs/alcohol) and ordering primary investigations below:

   - History & Physical exam
   - CBC
   - Electrolytes
   - Renal profile
   - Glucose

   Other investigations may be required based on the clinical presentation.

3. Treat underlying medical causes, if known

4. Based on presenting features and/or screening assessment, select and implement the appropriate delirium care protocols (See shaded box to right)

NO

1. Insert Delirium Risk Factor Alert in chart (Appendix C)

2. Follow up screening indicated

   Date: __________________________ e.g., within 72 hrs.

3. Based on risk factors and/or screening assessment select and implement the appropriate delirium care protocols

   - Slp enhancement
   - Perceptual and cognitive enhancement
   - Fluid enhancement
   - Mobility enhancement
   - Addressing psychomotor agitation

Physicians note:
If further information or advice is needed contact the geriatric medicine or psychiatry consultation team
APPENDIX D:
Delirium Order Set
(Toronto East General Hospital)
# Delirium Order Set - Medicine

- **Body weight**: _____ kg
- **Allergies**: □ No known allergies

## PATIENT IDENTIFICATION

Note: See Delirium indicators and assessment criteria at the back of the order set

MD to order investigations necessary to exclude new/contributing problems.

### Education/Counselling

☑ Provide Family with Information Booklet about Delirium

Family Information [http://www.icudelirium.org/delirium/Family.html](http://www.icudelirium.org/delirium/Family.html)

### Consults

☐ Geriatrics
☐ Psychiatry
☐ Pharmacy to review medications for agents that may be contributing to delirium

### Laboratory

☐ CBC ☐ Lytes, Creatinine, Glucose
☐ CK ☐ Troponin T ☐ Calcium, Albumin
☐ ABG if SpO₂ less than 90% on 5 L/minute nasal prongs
☐ Blood Cultures if T greater than 38.5°C
☐ Urine Culture

Additional investigations: ________________________________________________________________

### Diagnostic Tests

☐ ECG
☐ CXR
☐ CT Head: non-contrast

Additional investigations: ________________________________________________________________

### Medication Orders

*See back of order set for recommendations regarding recommended doses and appropriate agents for clinical situation*

☑ For hyperactive delirium: If agitated patients falls into category 5 and 6 of the scale (back page), contact MD to consider medication with mandatory medication reassessment in 24 hours

☐ haloperidol _____ mg PO BID regularly
☐ haloperidol _____ mg IV/IM BID regularly
☐ haloperidol _____ mg PO q4h PRN *(note: peak effect takes 4 to 6 hours)*
☐ haloperidol _____ mg IV/IM q2h PRN *(note: peak effect takes 20 to 40 minutes)*

---

**Date**: ________________ **Signature**: ____________________________ **MD**

**Time**: ________________ **Print Name**: __________________________ **PAGE 1/2**

Fax orders to Pharmacy at 6325 if no duplicate copy (yellow sheet) is available. *Forward Suggestions to Dr Ruth Division of Medicine*

TEGH DOSP-534 Delirium – Medicine Oct 09
**Delirium Order Set - Medicine**

**Body weight:** _____ kg  
**Allergies:** ☐ No known allergies

<table>
<thead>
<tr>
<th>ORDERS</th>
<th>□ Check (√) if applicable</th>
<th>CHANGES TO BE INITIALLED BY MD</th>
<th>NOTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ risperidone _______ mg PO BID regularly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ risperidone orally disintegrating tablet _______ mg PO BID PRN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ quetiapine _______ mg PO qhs regularly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ quetiapine _______ mg PO qam regularly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ quetiapine _______ mg PO BID PRN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ olanzapine _______ mg IM q12h PRN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ olanzapine oral disintegrating tablet _______ mg PO q12h PRN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ lorazepam _______ mg PO/SL/IM/IV q4h PRN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ trazodone _______ mg PO qhs PRN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Date:** ____________________  
**Signature:** ________________________________________________________  
**Time:**  
**Print Name:**  
**MD**

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---

**TEGH DOSP-534 Delirium – Medicine Oct 09**
Patient Assessment Scale for Delirium

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Unresponsive to pain</td>
</tr>
<tr>
<td>1</td>
<td>Opens eyes and/or moves to pain only</td>
</tr>
<tr>
<td>2</td>
<td>Opens eyes and/or moves to voice only</td>
</tr>
<tr>
<td>3</td>
<td>Calm and cooperative</td>
</tr>
<tr>
<td>4</td>
<td>Restless but cooperative; follows commands</td>
</tr>
<tr>
<td>5</td>
<td>Agitated; attempts to get out of bed; may stop behaviour when requested but reverts back</td>
</tr>
<tr>
<td>6</td>
<td>Dangerously agitated; pulling at tubes or lines, thrashing about; does not obey commands</td>
</tr>
</tbody>
</table>

Haloperidol and Atypical Antipsychotics differ in terms of their side effects profiles. The agent of choice for treatment of delirium in geriatric patients depends on comorbidities and suspected cause of delirium. In general, avoid daytime sedatives and medications with anticholinergic effects, as these are known to precipitate and exacerbate delirium; however, some exceptions exist as outlined below.

### Antipsychotic (Neuroleptic) Comparison of Side Effects

<table>
<thead>
<tr>
<th></th>
<th>Sedation</th>
<th>Anticholinergic Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most</td>
<td>Least</td>
<td>Most</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>Risperidone</td>
<td>Olanzapine</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Haloperidol</td>
<td>Quetiapine</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hypotension</th>
<th>Extrapyramidal Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most</td>
<td>Least</td>
<td>Most</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Olanzapine</td>
<td>Haloperidol (PO&gt;IV)</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Haloperidol (PO)</td>
<td>Risperidone</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>Haloperidol</td>
<td>Haloperidol</td>
</tr>
</tbody>
</table>

Haloperidol
- Agent of choice for treatment of delirium, except avoid in:
  - Delirium associated with withdrawal from alcohol or substance abuse
  - Parkinson’s disease and Lewy Body Dementia
  - History of neuroleptic malignant syndrome
  - Recommended dosing for geriatrics: 0.25 to 2 mg; note that oral bioavailability is 60-70% and therefore PO and IV/IM dosing not equivalent

Risperidone
- Oral alternative to haloperidol but with less EPS
- However, most likely to cause orthostatic hypotension
- Avoid in Parkinson’s disease; Use with extreme caution in Lewy Body Dementia
- Recommended dosing for geriatrics: 0.25 to 1 mg

Olanzapine
- Available in regular and orally disintegrating tablets, and IM injection
- Usually not the agent of choice for routine daytime administration due to sedative and anticholinergic effects; however, it is an alternative to IM haloperidol when EPS is a concern
- Recommended dosing for geriatrics: 2.5 to 5 mg

Quetiapine
- May be less sedating and have fewer anticholinergic effects than Olanzapine; however, due to sedation effects, consider smaller daytime doses
- Recommended dosing for geriatrics: 12.5 to 50 mg

Benzodiazepines
- Use for treatment of delirium recommended only for:
  - Delirium due to alcohol or substance abuse withdrawal
  - Patients with contraindication to neuroleptics (e.g. Parkinson’s disease, history of neuroleptic malignant syndrome, QT prolongation on EKG)
  - Patients not responding to neuroleptics
  - Recommend dosing for geriatrics: Lorazepam 0.5 to 1 mg; do not exceed 2 mg in single dose

Other agents
- Although opioids may precipitate delirium, their use can still be considered when delirium thought to be precipitated by uncontrolled pain
Delirium is a common problem in hospitalized inpatients affecting between 15 – 50% of inpatients. It is important to identify delirious patients because of the risk of injury and further morbidity. Remember that there is almost always an underlying cause or precipitant for delirium. Be careful not to simply mask the cause with medications.
APPENDIX E:
Admission Orders for Hip Fracture
(Sunnybrook Health Sciences Centre)
# Admission Orders for Patients With Hip Fracture

**Doctor Must Check Off Appropriate Orders**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fracture type and location:</td>
</tr>
<tr>
<td>2.</td>
<td>Admit to: Dr. ____________________________ (PRINT NAME)</td>
</tr>
</tbody>
</table>

**Resuscitation Status**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Full Code:  □ Yes □ No  No resuscitation (no CPR, no intubation, no defibrillation)  □ Yes □ No</td>
</tr>
</tbody>
</table>

**Monitoring**

| 4. | Vital signs q8h |
| 5. | Neurovascular assessment of affected limb q4h |
| 6. | Input and output q8h x 48h, and while IV insitu |
| 7. | Oxygenation: Administer to keep oxygen saturation greater than or equal to 96% |

**General Care**

| 8. | Initiate Pre Operative Orthopedic Care Pathway |
| 9. | Activity: □ Bed rest □ Other: ____________________________ |
| 10. | Weight and Height on admission |

**Laboratory and Diagnostic Testing**

| 11. | X-ray (specify location): __________ □ Right □ Left |
| 12. | X-ray chest AP |
| 13. | CBC, renal profile, electrolytes, blood glucose |
| 14. | INR |
| 15. | PTT |
| 16. | ECG if patient over 50 years of age |
| 17. | Group and Screening |
| 18. | If patient on anticoagulant agent, hold on admission and indicate which agent (check): □ warfarin □ dabigatran □ rivaroxaban □ Other: ____________________________ |
| 19. | If patient is on an antiplatelet agent, hold upon admission and indicate which agent (check): □ ASA □ clopidogrel □ Aggrenox® □ prasugrel □ ticagrelor □ ticlodipine □ Other: ____________________________ |

**Vitamin K 5 mg IV x 1 if INR is greater than 1.5; dilute in 50 mL of NS or D5W and infuse over 15 min**

---

**doctor's Signature:**

**PRINT NAME:**

**Pager:**

---

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**Page 1 of 3**

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**PR 68053**

(2011/04/18)
**Admission Orders for Patients With Hip Fracture**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Doctor Must Check Off Appropriate Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Interventions</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 Insert foley to straight drainage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21 IV _________ solution at _________ mL/hr</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Diet</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>22 (Choose ☑ one option below):</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Regular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ No added salt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ NPO solids – may have sips of water while on call for surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Diabetic diet ________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Other: _____________________________</td>
</tr>
</tbody>
</table>

**Medications**

**Prophylactic Antibiotics**

|     |    | 23 Send IV antibiotic with patient as follows for administration in the operating room, to be given 15-20 minutes prior to skin incision (select one): |
|     |    | ☐ If NO history of penicillin allergy (no anaphylaxis or hives); prepare cefazolin 2000 mg |
|     |    | ☐ If POSITIVE history of penicillin allergy (anaphylaxis or hives); prepare clindamycin 600 mg |

**Analgesics**

|     |    | 24 HYDROmorphine CR capsule (Hydromorph Contin®) 3 mg po x 1 dose |
|     |    | 25 celecoxib 200 mg po x 1 dose |
|     |    | 26 HYDROmorphine 1 mg to 3 mg po q2h prn |
|     |    | 27 HYDROmorphine 0.2 mg to 0.6 mg subcutaneous q2h prn |
|     |    | 28 Acute Pain Service Consultation |

**Antiemetics**

|     |    | 29 ondansetron 1 mg IV q6h prn. Dilute in 50 mL of NS or D5W and infuse over 15 minutes. |
|     |    | 30 If ineffective after 30 minutes, discontinue and give prochlorperazine 5-10 mg IV q6h prn (use 5 mg for greater than 70 years of age). Dilute in 50 mL of NS or D5W and infuse over 15 minutes. |
|     |    | 31 If no response to above antiemetics, consult APS |

**Venous Thromboembolism (VTE) Prophylaxis**

|     |    | 32 enoxaparin 30 mg sc daily at bedtime. Do NOT hold enoxaparin if patient is scheduled for surgery the next day. |

**Doctor’s Signature:**

**PRINT NAME:**

**Pager:**

---

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**PR 68053**

(2011/04/18)
Admission Orders
for Patients With Hip Fracture

**Orthopaedic Bowel Routine**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Doctor Must Check Off Appropriate Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td></td>
<td>1. Record all bowel movements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. docusate sodium, 200 mg po at bedtime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. sennosides, 2 tablets po at bedtime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. If patient complains of abdominal discomfort, or if no bowel movement in 2 days, continue docusate and sennosides, and give magnesium hydroxide 30 mL (MOM) po at bedtime x 1 dose.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. If no bowel movement by next morning give glycerin suppository</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. If no effect in 1 h give bisacodyl 10 mg suppository</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. If no effect after suppositories, give Fleet® enema</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If no result from the above interventions, notify physician.</td>
</tr>
</tbody>
</table>

**Consultations**

| 34  | Medicine (MD to notify) |
| 35  | Anesthesia (MD to notify): Consult on all patients with significant Respiratory, Renal, Diabetes, and Cardiovascular (CV) - MI and/or CV surgery |
| 36  | Social Worker (RN to notify) |
| 37  | Thromboembolism (TE) service (RN to notify) |
|     | If patient not on D5; page 8170 between 0800h and 2200h |
| 38  | Other: |

**Consultations**

**Other Medications**

**NOTE:** MD must order all pre-admission medications that are to be continued
### Indications for measuring bone mineral density

*From 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada*

<table>
<thead>
<tr>
<th>Older adults (age ≥ 50 yr)</th>
<th>Younger adults (age &lt;50 yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Age ≥ 65 years (both women and men)</td>
<td>• Fragility fracture</td>
</tr>
<tr>
<td>• Clinical risk factors for fracture (menopausal women, men age 50-64 yr):</td>
<td>• Prolonged use of glucocorticoids*</td>
</tr>
<tr>
<td>o Fragility fracture after age 40 yr</td>
<td>• Use of other high-risk medications**</td>
</tr>
<tr>
<td>o Prolonged use of glucocorticoids*</td>
<td>• Hypogonadism or premature menopause (age &lt;45 yr)</td>
</tr>
<tr>
<td>o Use of other high-risk medications**</td>
<td>• Malabsorption syndrome</td>
</tr>
<tr>
<td>o Parental hip fracture</td>
<td>• Primary hyperparathyroidism</td>
</tr>
<tr>
<td>o Vertebral fracture or osteopenia identified on radiography</td>
<td>• Other disorders strongly associated with rapid bone loss and/or</td>
</tr>
<tr>
<td>o Current smoking</td>
<td>fracture</td>
</tr>
<tr>
<td>o High alcohol intake</td>
<td></td>
</tr>
<tr>
<td>o Low body weight (&lt;60 kg) or major weight loss (&gt;10% of body weight at age 25 yr)</td>
<td></td>
</tr>
<tr>
<td>o Rheumatoid arthritis</td>
<td></td>
</tr>
<tr>
<td>o Other disorders strongly associated with osteoporosis such as</td>
<td></td>
</tr>
<tr>
<td>primary hyperparathyroidism, type 1 diabetes, osteogenesis</td>
<td></td>
</tr>
<tr>
<td>imperfecta, uncontrolled hyperthyroidism, hypogonadism or</td>
<td></td>
</tr>
<tr>
<td>premature menopause (&lt;45 years), Cushing’s disease, chronic</td>
<td></td>
</tr>
<tr>
<td>malnutrition or malabsorption, chronic liver disease, COPD and</td>
<td></td>
</tr>
<tr>
<td>chronic inflammatory conditions (e.g., inflammatory bowel disease)</td>
<td></td>
</tr>
</tbody>
</table>

*At least 3 months cumulative therapy in the previous year at a prednisone-equivalent dose ≥7.5 mg daily.

** For example, aromatase inhibitors or androgen deprivation therapy.

**NOTE:** For additional recommendations regarding the diagnosis and prevention and management of osteoporosis, refer to the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada, CMAJ • NOVEMBER 23, 2010 • 182(17) or at [http://www.osteoporosis.ca/multimedia/tools.html](http://www.osteoporosis.ca/multimedia/tools.html)

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APPENDIX G:
Hip Fracture Admission Order Set with Pre-printed Diet Guidelines
(Mount Sinai Hospital)
Orthopedic Admission
Fracture Admission Orders
Form 961 Rev. (6/2006)

<table>
<thead>
<tr>
<th>Item</th>
<th>Order</th>
<th>Transcribed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Admit to Dr.</td>
<td></td>
</tr>
</tbody>
</table>
| 2.   | Resuscitation Status: Complete the Cardiopulmonary Resuscitation Order Set (Please select one)
- Full Code
- No resuscitation (no CPR, no intubation, no defibrillation)
- MSH Cardiopulmonary Resuscitation Order Set (Form MS 665) filled out

3. Infection Control Requirements
- MRSA/VRE/NMD Admission Screening Swabs (nasal & rectal swab)
- Routine Infection Control Practices
- VRE Precautions
- Hand/Contact Precautions
- MRSA Precautions
- airborne Precautions

4. Nutrition
- No restrictions
- Clear fluid diet
- Diet as tolerated
- Other diet
- Surgery planned before 1200
- NPO after midnight
- Surgery planned between 1200-1700
- Please provide patient with clear fluid diet for best fluid at 0700; NPO after 0730
- Surgery planned after 1700
- Please provide patient with regular diet at 0700; clear fluids for lunch at 1130; NPO after 1200
- NPO
- May take medications with sips of water

5. Activity Level
- As tolerated
- Bed rest
- Other

6. Clinical Monitoring
- Vital Signs
- Blood Pressure
- Other
- Check for pain sensation
- Neurological status

7. Oxygen
- Administer O2 to keep saturation 94-96%
- O2 to keep saturation 90%

8. Procedures/Interventions
- Insert Foley catheter to straight drainage
- Insert Broviac 24-Fr IV catheter

9. Laboratory/Diagnostics
- All laboratory and imaging investigations must be entered through PowerChart by MD.

10. Intravenous Fluids
- Sodium Locke
- Intravenous fluids
- Solution
- Rate ml/hr while NPO
- Additives
- no additional KCL
- with 20mEq/L KCL

11. Medications - Choose one only
- Pain Management
  - Morphine mg IV/SC q8h
  - Hydromorphone 0.5-1.0 mg IV/SC q4h
- Monitor vital signs, sedation scale and oral pain scale q4h for initial 12 hours
- Anti-Infectives
  - Infusion of oral 12.5-25 mg PO IV/IV q4h for nausea/vomiting
  - Infusion of oral 25-50 mg PO IV/IV q4h for nausea/vomiting
- Oral Medications
- DVT Prophylaxis
  - Enoxaparin 40 mg SC daily
- No DVT prophylaxis required

12. Consults
- Respiratory Therapy
- Occupational Therapy
- Physical Therapy
- Occupational Therapy
- Physical Therapy
- Social Work
- Medical Consult
- Anesthesiologist
- Other

13. Consent for Surgery
- Consent for Blood Transfusion

14. All other orders or changes to the above orders MUST be written using the Standard Mount Sinai Hospital Order Record.
APPENDIX H:
Hip Fracture Pamphlet
(Sunnybrook Health Sciences Centre)
Information for Hip Fracture

What is a Hip Fracture?

A hip fracture is a break in the upper end of the thighbone (femur) where it meets the pelvis. It is a common fracture in the elderly due to osteoporosis (weak bones) and an increased risk of falling (because of poor balance, poor eyesight, muscle weakness etc.).

Surgery (an operation) is often needed to "fix" the bones. In the surgery, pieces of metal (screws) may be used to hold the broken bones together. Sometimes part or all of the joint may need to be replaced to repair the break (this surgery is called hemiarthroplasty). Surgery reduces the amount of pain felt and allows people to get up out of bed and move around easily. This early movement after the surgery reduces the risk of serious complications like blood clots, infections and bedsores that can happen after being in bed too long.

HIP FRACTURE MILESTONES

- Emergency Room and Pre-operation
- Operation Day
- Post-op day 1 and 2
- Post-op day 3 and 4
- Post-op day 5 – DISCHARGE DAY
Emergency Room and Pre-operation

- **Several tests may need to be done.** The tests depend on the type of fracture, your age and general health. Some of these tests include blood work, ECG (heart tests), x-rays and consults to other specialty doctors such as medicine and anesthesia.

- **You will likely have pain in your hip and leg.** You will be given medicine for the pain. Please let the nurses know if the pain relieve is adequate so that the medication can be adjusted. The nurses will also help you to position your leg comfortably.

- **An intravenous (IV) tube will be placed in your arm to give you fluids.** In most cases, you will not be allowed to eat or drink after midnight the evening before your surgery (except sips of fluid to take any needed medications). Sometimes if we know your surgery will not be until late in the day, you may have breakfast.

- **You may need a tube (catheter) to be placed in your bladder to drain urine.**

- **The Surgeon will answer questions about the operation and obtain consent from you or a family member/designate.**

**Discharge Planning:** You and your health care team will begin planning for discharge from the hospital. There are **3 main discharge destinations:**

1. **Home with family support** and/or assistance from home care.
2. **Long-term Care/Retirement Home:** Some patients, who have come to the hospital from a Long Term Care Facility will return to this facility on day 5 after surgery.
3. **Sunnybrook Rehabilitation Partner:** Sunnybrook is one of 39 facilities participating in a Ministry funded HIP FRACTURE PROJECT. This project introduces a new “Model of Care” to provide timely rehabilitation to patients with hip fractures. The project’s goal is to transfer you or your family member to a rehabilitation facility 5 days after surgery where applicable. If rehabilitation is appropriate for you or your family member, you may be transferred to one of Sunnybrook’s Rehabilitation Partners (Holland Centre, Bridgepoint, St. John’s and Baycrest). Transfer to another rehabilitation facility is also possible.

**NOTES:**

- Home with family support and/or assistance from home care.
- Long-term Care/Retirement Home: Some patients, who have come to the hospital from a Long Term Care Facility will return to this facility on day 5 after surgery.
- Sunnybrook Rehabilitation Partner: Sunnybrook is one of 39 facilities participating in a Ministry funded HIP FRACTURE PROJECT. This project introduces a new “Model of Care” to provide timely rehabilitation to patients with hip fractures. The project’s goal is to transfer you or your family member to a rehabilitation facility 5 days after surgery where applicable. If rehabilitation is appropriate for you or your family member, you may be transferred to one of Sunnybrook’s Rehabilitation Partners (Holland Centre, Bridgepoint, St. John’s and Baycrest). Transfer to another rehabilitation facility is also possible.
• The pain, swelling and bruising in your hip will slowly go away over a few weeks.

• You should make an appointment to see your family doctor 10-14 days after your surgery to have the staples taken out. You will be given a staple remover when you leave the hospital.

• You will be given a prescription for pain medication (and any other medications needed at home) before you leave the hospital. Follow what the pharmacist tells you (and the instructions on the label) when you pick up your medication.

• You will be given an appointment to return to the hospital to see the orthopedic surgeon who operated on your hip.

When to call the Doctor:

Call the doctor’s office if you have any of the following symptoms:

• Fever (more than 38.5C or 102.3F)
• Fluid or blood from the incision (more than 1 teaspoon)
• Increasing redness, swelling or pain at the incision site

Go to the closest emergency department if:

• You have shortness of breath or chest pain within the first few days after returning home, OR

• The pain in your hip suddenly gets a lot worse and you cannot put weight on your leg

Your Surgeon is: __________________
Telephone Number: _______________

DO YOU HAVE ANY QUESTIONS FOR THE DOCTOR?

DO YOU HAVE ANY QUESTIONS FOR THE OTHER TEAM MEMBERS?

Operation Day

Sunnybrook is a Regional Trauma Centre providing service to a large portion of northern and eastern Ontario. This means that your surgery may be delayed or cancelled if a trauma patient needs life saving surgery. This may happen more than once and can be frustrating for you. If this happens, everything possible will be done to rebook your surgery and make you comfortable until you go to the operating room. Sometimes surgery may also be delayed while waiting for medical tests to be done. These tests are important to ensure your safety.

When it is time for your surgery, you will be taken to the operating room either in your bed or on a stretcher. You will wear a hospital gown. All jewelry, glasses, dentures and contact lenses will be taken off before you go. Please have your family members take your valuables home.

Your family may wait in the waiting room in A wing on the 1st floor, room 48 (A148).

The operation usually lasts 1-2 hours. After surgery you will be moved to the recovery room for a few hours until you are fully awake. You will then be brought back to your room - this may take several hours.

Post operative Day 1 and 2

• You will continue to be given medicine for pain and nausea as required.

• The IV will still be in place.

• You may have a catheter in your bladder to drain urine.

• There may also be an oxygen tube at your nose.

• You will have an incision (cut in the skin) over your hip about 6-10 inches long. A large bandage will cover the incision. The incision is held together by metal clips or staples that are to be taken out 10-14 days after surgery.

• You will be allowed to take sips of fluid when you awaken after surgery.

• Your vital signs i.e. blood pressure, temperature, heart rate, and your bandage will be checked regularly.

• You will continue to be given medicine for pain and nausea as required. Blood thinners may also be provided.
Good pain control is very important to your recovery and will allow you to move and get out of bed. Please let the nurses know if your pain control is not adequate.

- The IV, the catheter and the oxygen will be discontinued when suitable.
- You will be progressed to a regular diet.
- You will be helped to sit up at the edge of the bed and then to stand up holding onto a walker for support. Depending on the type of surgery you had, you may or may not be allowed to put weight through (step on) your operated leg. The doctor, nurse and physiotherapist will let you know. You will progress to walking to the bathroom, as you are able.
- You will be encouraged to do as much of your personal care as you are able.
- You will be encouraged to take deep breaths, to cough and to pump your feet and toes up and down every hour. These exercises help to prevent complications.
- Discharge planning will continue. Social Work will confirm application to our rehabilitation partners where suitable consistent with the HIP FRACTURE PROJECT.

Post Operative Day 3 and 4

- You will continue to be given medicine for pain and nausea as required. Blood thinners may be continued.
- Nurses should be informed if you have not had a bowel movement.
- Your mobility/walking will be progressed as you are able. By the 3rd or 4th day, most people are using the walker to walk to the bathroom and in the hallway. Some patients are progressed to crutches. Patients who are going home will be taught how to manage stairs. You should be up in a chair for all of your meals.
- You will be shown some additional important exercises to do on your own in bed to prevent stiffness and weakness.
- You should be as independent in your personal care as you were prior to your admission to Sunnybrook.
- Discharge Plans will be confirmed.

Discharge Day 5

For patients discharged to a Rehabilitation Facility (HIP FRACTURE PROJECT):

Your health care team has identified you/your family member as being an ideal candidate for participation in the HIP FRACTURE PROJECT. Sunnybrook will make all the necessary arrangements to transfer you to one of our rehabilitation partners. Upon transfer to the rehabilitation facility, you will participate in the Fractured Hip Rapid Assessment and Treatment Service (FHRAT). FHRAT is an improved model of care delivery for hip fracture patients designed to get you back on your feet as soon as possible following surgery so that you can quickly return to the activities you enjoyed before you broke your hip. This rehabilitation program is for individuals who are currently living in their own homes or who are living independently in another setting, such as a retirement home, and are able to return home following rehabilitation.

For patients discharged home:

- It is important to keep as active as possible. Take many short walks during the day to build up your strength and endurance. You may feel weak and tired for a couple of weeks after surgery. Allow for rest periods throughout the day but do not sit or lie in one place for too long.
- Continue to do the exercises that the physiotherapist showed you to do.
- The incision no longer needs to be covered.
- You may shower/wash with mild soap but do not soak in a tub until the staples are removed. Dry the incision carefully afterward.

Their highly skilled health care team also specializes in working with individuals who have memory problems but are able to live independently or with a family member.

You can expect to be at the Rehabilitation Facility for 10 to 30 days. Before you are discharged, the health care team will meet with you to discuss the outcomes of your treatment plan and how you can best continue to meet your rehabilitation needs.
APPENDIX I:
Post Operative Orders for Patients with Hip Fracture
(Sunnybrook Health Sciences Centre)
**Post Operative Orders for Patients With Hip Fracture**

**Doctor Must Check Off Appropriate Orders**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 1 Transfer to Dr: ___________________________ (PRINT NAME)</td>
<td></td>
</tr>
<tr>
<td>☐ 2 Vital signs q4h x 48h, then q8h</td>
<td></td>
</tr>
<tr>
<td>☐ 3 Neurovascular assessment of affected limb q4h x 48h, then q8h</td>
<td></td>
</tr>
<tr>
<td>☐ 4 Intake and output q8h x 48h, and while IV in</td>
<td></td>
</tr>
<tr>
<td>☐ 5 Oxygenation 3 L via nasal cannula x 48h, then administer to keep oxygen saturation greater than or equal to 96%</td>
<td></td>
</tr>
</tbody>
</table>

**General Care**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 6 Initiate Post Operative Orthopedic / Medicine Care Pathway</td>
<td></td>
</tr>
<tr>
<td>☐ 7 Total hip precautions (no flexion beyond 90 degrees, no adduction beyond neutral, avoid external hip rotation)</td>
<td></td>
</tr>
<tr>
<td>☐ 8 Activity: ☐ As tolerated ☐ Other: __________________________</td>
<td></td>
</tr>
<tr>
<td>☐ 9 Hoyer Lift as needed</td>
<td></td>
</tr>
</tbody>
</table>

**Laboratory and Diagnostic Testing**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 10 X-ray (arthroplasty) AP pelvis post operative in PACU ☐ Right ☐ Left</td>
<td></td>
</tr>
<tr>
<td>☐ 11 X-ray (dynamic hip screw) AP &amp; LAT hip ☐ Right ☐ Left post-operative day 1</td>
<td></td>
</tr>
<tr>
<td>☐ 12 CBC, renal profile, electrolytes, blood glucose on post operative days 1, 3 and 7</td>
<td></td>
</tr>
</tbody>
</table>

**Interventions**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 13 IV__________ solution at________ mL/hr, discontinue post operative day 2 if drinking well</td>
<td></td>
</tr>
<tr>
<td>☐ 14 Discontinue Foley at 0600h post operative day 2, then follow Bladder Management Algorithm</td>
<td></td>
</tr>
<tr>
<td>☐ 15 Initial dressing change at ☐ 24h or ☐ 48h post operatively</td>
<td></td>
</tr>
</tbody>
</table>

**Diet**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 16 (Choose ☐ one option below): ☐ Regular (high fibre) ☐ Diabetic diet ________</td>
<td></td>
</tr>
<tr>
<td>☐ No added salt ☐ Other: ______________</td>
<td></td>
</tr>
<tr>
<td>☐ Clear fluids</td>
<td></td>
</tr>
</tbody>
</table>

**Doctor’s Signature:** ___________________________  **PRINT NAME:** ___________________________  **Pager:** ___________________________
Post Operative Orders for Patients With Hip Fracture

Date: _______________________ Time (h): __________

Doctor’s Signature:                                                 Print Name:                                                            Pager:

Consultations

17 Consult Physiotherapy (RN to notify)
18 Consult Occupational Therapy (RN to notify)
19 Consult Thromboembolism (TE) service (RN to notify)
   If patient not on D5, page 8170 between 0800h and 2200h

Medications

Antibiotics

20 (Choose ☑ one option below):
   ☐ If NO history of penicillin allergy (no anaphylaxis or hives); give cefazolin 1000 mg IV infused over 15-30 min q8h x 2 doses starting 8 h after previous dose
   OR
   ☐ If POSITIVE history of penicillin allergy (anaphylaxis or hives);
     give clindamycin 600 mg IV infused over 30 min q8h x 2 doses, starting 8h after previous dose

Analgesics

21 HYDROmorphine CR capsule (Hydromorph Contin®) 3 mg po x 1 dose
22 celecoxib 200 mg po x 1 dose
23 HYDROmorphine 1 mg to 3 mg po q2h prn
24 HYDROmorphine 0.2 mg to 0.6 mg subcutaneous q2h prn

Analgesic orders are VOID if APS is following

25 Acute Pain Service Consultation

Antiemetics

26 ondansetron 1 mg IV q6h prn. Dilute in 50 mL of NS or D5W and infuse over 15 min

If ineffective after 30 min, discontinue and give prochlorperazine 5-10 mg IV q6h prn (use 5 mg for greater than 70 years of age). Dilute in 50 mL of NS or D5W and infuse over 15 min.

If no response to above antiemetics, consult APS

Venous Thromboembolism (VTE) Prophylaxis

29 Choose ONE of the following:
   ☐ enoxaparin 40 mg sc daily at bedtime starting tonight
   ☐ enoxaparin 40 mg sc daily starting tomorrow morning
   ☐ enoxaparin 30 mg sc daily at bedtime starting tonight for patients weighing less than 40 kg OR with CrCl less than 30 mL/min
   ☐ enoxaparin 30 mg sc daily starting tomorrow morning for patients weighing less than 40 kg OR with CrCl less than 30 mL/min

Doctor’s Signature:                                                 Print Name:                                                            Pager:

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PR 68054
(2011/04/18)
### Orthopaedic Bowel Routine

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</table>

1. Record all bowel movements
2. docusate sodium, 200 mg po at bedtime
3. sennosides, 2 tablets po at bedtime
4. If patient complains of abdominal discomfort, or if no bowel movement in 2 days, continue docusate and sennosides, and give magnesium hydroxide 30 mL (MOM) po at bedtime x 1 dose.
5. If no bowel movement by next morning give glycerin suppository
6. If no effect in 1 h give bisacodyl 10 mg suppository
7. If no effect after suppositories, give Fleet® enema

If no result from the above interventions, notify physician.

### Discharge Planning

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>30</td>
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</table>

Planned estimated discharge date (EDD): ________________ (YYYY/MM/DD)

Return to fracture clinic date: ________________ (YYYY/MM/DD)

Notify thromboembolism service before patient discharge

### Other Medications

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>34</td>
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</tr>
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</table>

NOTE: MD must re-order all pre-operative medications that are to be continued post-operatively

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**Doctor's Signature:**

**PRINT NAME:**

**Pager:**

---

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APPENDIX J:
Confusion Assessment Method (CAM)
Confusion Assessment Method Instrument (CAM)

Patient’s Name: ___________________________ Date: ___________________________

Instructions: Assess the following factors.

Acute Onset
1. Is there evidence of an acute change in mental status from the patient’s baseline?
   ____ YES  ____ NO  ____ UNCERTAIN  ____ NOT APPLICABLE

Inattention
(The questions listed under this topic are repeated for each topic where applicable.)
2A. Did the patient have difficulty focusing attention (for example, being easily distractible or having difficulty keeping track of what was being said)?
   ______ Not present at any time during interview
   ______ Present at some time during interview, but in mild form
   ______ Present at some time during interview, in marked form
   ______ Uncertain
2B. (If present or abnormal) Did this behavior fluctuate during the interview (that is tend to come and go or increase and decrease in severity)?
   ____ YES  ____ NO  ____ UNCERTAIN  ____ NOT APPLICABLE
2C. (If present or abnormal) Please describe this behavior.

Disorganized Thinking
3. Was the patient’s thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?
   ____ YES  ____ NO  ____ UNCERTAIN  ____ NOT APPLICABLE

Altered Level of Consciousness
4. Overall, how would you rate this patient’s level of consciousness?
   ______ Alert (normal)
   ______ Vigilant (hyperalert, overly sensitive to environmental stimuli, startled very easily)
   ______ Lethargic (drowsy, easily aroused)
   ______ Stupor (difficult to arouse)
   ______ Coma (unarousable)
   ______ Uncertain
Disorientation
5. Was the patient disoriented at any time during the interview, such as thinking that he or she was somewhere other than the hospital, using the wrong bed, or misjudging the time of day?
   ___ YES    ___ NO    ___ UNCERTAIN    ___ NOT APPLICABLE

Memory Impairment
6. Did the patient demonstrate any memory problems during the interview, such as inability to remember events in the hospital or difficulty remembering instructions?
   ___ YES    ___ NO    ___ UNCERTAIN    ___ NOT APPLICABLE

Perceptual Disturbances
7. Did the patient have any evidence of perceptual disturbances, such as hallucinations, illusions, or misinterpretations (for example, thinking something was moving when it was not)?
   ___ YES    ___ NO    ___ UNCERTAIN    ___ NOT APPLICABLE

Psychomotor Agitation
8A. At any time during the interview, did the patient have an unusually increased level of motor activity, such as restlessness, picking at bedclothes, tapping fingers, or making frequent sudden changes in position?
   ___ YES    ___ NO    ___ UNCERTAIN    ___ NOT APPLICABLE

8B. At any time during the interview, did the patient have an unusually increased level of motor activity, such as sluggishness, staring into space, staying in one position for a long time, or moving very slowly?
   ___ YES    ___ NO    ___ UNCERTAIN    ___ NOT APPLICABLE

Altered Sleep-Wake Cycle
9. Did the patient have evidence of disturbance of the sleep-wake cycle, such as excessive daytime sleepiness with insomnia at night?
   ___ YES    ___ NO    ___ UNCERTAIN    ___ NOT APPLICABLE

Scoring:
To have a positive CAM result, the patient must display:
1. Presence of acute onset and fluctuating discourse
   AND
2. Inattention
   AND EITHER
3. Disorganized thinking
   OR
4. Altered level of consciousness

Source:
APPENDIX K: Criteria for Insertion of Indwelling Catheter
(Adapted from Toronto East General Hospital’s Nursing Policy and Procedure Manual)

The following are the internationally accepted criteria for the insertion of an indwelling catheter:

1. Perioperative use for selected surgical procedures;
   a. Patients undergoing urologic surgery or other surgery on contiguous structures of the genitourinary tract
   b. Anticipated prolonged duration of surgery (catheters inserted for this reason should be removed in PARR or the next morning)
   c. Patients anticipated to receive large-volume infusions or diuretics during surgery
   d. Need for intraoperative monitoring of urinary output

2. Urine output monitoring in critically ill patients

3. Management of acute urinary retention and urinary outlet obstruction where intermittent catheterization is not an option

4. Diversion of urine from wounds to promote healing for incontinent patients

5. Prolonged immobilization (e.g., potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures)

6. To improve comfort during end of life care, if needed

***The following are NOT approved indications:
Incontinence
Immobility
Patient / health care worker convenience***

References:


APPENDIX L:

Bowel Management Protocol
(Sunnybrook Health Sciences Centre)
**Physician's Orders**

All orders shall be DATED, TIMED, and SIGNED. All medication orders shall be written in the GENERIC or non-proprietary name. All orders shall be written legibly using ball point pen.

### Patient Identification

**Signature of Nurse**

**Time & Date**

- No Known Allergies

- **Penicillin Allergy (choose one option below based on history):**
  - Anaphylaxis, or hives within first 48 hrs: cephalosporins should be avoided.
  - Other or unknown history: cephalosporins may be used.

- **Other Allergies (specify):**

**Complete Above Allergy Box at Time of Initial Orders**

**Maintenance Bowel Routine**

- **Legend:** [ ] means "not an option to say No." Physician must check off Yes box and fill out that section.

**NOTE:** If patient is refractory to the following treatments, consider GI consult.

- **Soap Suds Enemas should NOT be used.**

**Yes No**

1. **For Patients Without Spinal Cord Injury - Complete items #1-9**
   - Do NOT administer bowel routine if patient has bowel obstruction.
   - Nurse to record all bowel movements (L = liquid, SF = semi-formed, F = formed, P = pellets)
   - (Document the approximate volume as small, medium or large)
   - Monitor for stool frequency - desired stool frequency is:
     - [ ] daily
     - [ ] every 2 days
     - [ ] every 3 days

2. **Nursing to notify Physician if no bowel movement > 4 days**

3. **Dietary Measures (not recommended in Nephrology patients due to high K and PO₄ content)**
   - A. Serving of [ ] prunes or [ ] puréed prunes with breakfast every second day
   - B. 120mL prune juice po / nasogastric tube (NG) daily (if via NG, flush with 30mL water after administration)
   - C. High fiber diet

4. **Laxatives - For Dysphagic Patients Consult Speech-Language Pathologist**
   - **MOM** [ ] 15-60mL nasogastric tube / po nightly or **Lactulose** [ ] 15-30mL nasogastric tube / po bid
   - (not recommended with impaired renal function, elderly/frail patients or in patients with serum creatinine > 150μmol/L)
   - [ ] should be limited to patients with serum creatinine > 150μmol/L and/or hepatic encephalopathy
   - Docosate sodium [ ] 200mg po daily or [ ] 200mg nasogastric tube daily (concentrated liquid not intended for oral use)
   - Senonsides 1-2 tab nasogastric tube / po nightly or
   - (Maximum 8 tablets / 24h Tablets may be crushed as needed)
   - Other

**If Goal for Frequency of Bowel Movements is Not Met (See Steps 1-6) and Stool Is Present in the Rectum Then Complete Steps 7-9 (Call MD if no stool in rectum):**

5. **Glycerin Suppository - give one suppository per rectum 1 hour after breakfast.**

6. **Bisacodyl 10mg suppository per rectum - if no bowel movement 1 hour after glycerin suppository.**

7. **Fleet Enema - if no effect 1 hour after bisacodyl suppository give Fleet enema (130mL) per rectum.**
   - If no effect in 15 min, may repeat x 1 only. To avoid excess phosphate absorption, use caution in patients with renal compromise (e.g. Serum creatinine > 150μmol/L) and/or anal sphincter dysfunction.
   - If no effect from Fleet within 30 min, flush with 500mL tep water enema and notify physician.

**For Spinal Cord Injury Patients Only Complete Items # 1-5 and 10-12**

8. **Milk of Magnesia (MOM) 30-60mL nasogastric tube / po q Sun Tues Thurs at bedtime**
   - or Senonsides 2 to 3 tab q Sun Tues Thurs at bedtime (Maximum 8 tablets / 24h. Tablets may be crushed as needed)

9. **Bisacodyl 10mg suppository per rectum - the morning after MOM, 30 min. after breakfast q Mon Wed Fri**

10. **Fleet Enema - if no effect 1 hour after bisacodyl suppository, give Fleet enema (130mL) per rectum.**
    - If no effect in 15 minutes, may repeat x 1 only. See warnings as per order # 9 above.

**Doctors Signature:**

**Print Name:**

**Page #:**

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APPENDIX M:
Understanding Acute Delirium
(Sunnybrook Health Sciences Centre)
What staff may do to care for your family member

- We may move your family member closer to the nursing station so that we may better observe and respond to him/her. This may involve placing him/her in a ward room.
- If your family member is extremely agitated or frequently attempting to climb out of bed, we may hire an observer to sit with him/her to ensure safety and provide reassurance. This observer may be shared between one or two other patients.
- We may do routine tests to determine the cause of delirium.
- We may involve consult services, for example geriatrics, to assist in the care of your family member.

“Working together to prevent delirium”

For more information and additional resources, please talk with the nurse, occupational therapist or social worker working with your family member.

Please don’t hesitate to express your concerns with the staff as it is important to work together to help your family member through this difficult time.

References:
Delirium Screeing & Care Protocols, Sunnybrook Intranet

Acknowledgement:
Inter-Professional Prevention of Delirium in the Emergency Department (IPPOD)
Understanding acute delirium

Delirium is confusion that happens suddenly. It is a common problem for older people in the hospital. Delirium can affect a person’s thinking and behaviour and significantly affect his/her ability to perform their activities of daily living.

Causes of delirium may include:

- Traumatic injury
- Surgery
- New illness or infection
- Medication
- Staying in bed for too long
- Poor nutrition
- Pain
- Sleep disturbances

The presence of delirium can delay discharge from hospital. Staff will be assessing your family member for the onset of delirium on a daily basis.

Common features of delirium:

- Being restless and unable to stay still
- Forgetfulness and having trouble concentrating
- Seeing and hearing things that are not real
- Mixing up day and night
- Sometimes be confused and then suddenly seem normal
- Not knowing where they are and trying to climb out of bed
- Being drowsier and sleepier than usual
- Telling stories about events that don’t make sense or did not happen
- Slurring of speech
- Irritability and suspiciousness

Symptoms may last hours or weeks, rarely over a month.

How to help your family member who is experiencing delirium

- Talk to the health care team about any concerns identified by your family member (seeing things, feeling confused)
- Please bring in glasses or hearing aids. These help to orient your family member to their environment
- Calm and reassuring visits from family and friends are important to help the person feel safe in their current environment
- Bring in familiar objects, clothing and pictures to increase comfort
- Minimize distractions when communicating with your loved one (turn down TV, maintain eye contact during conversation, speak clearly)
- Ensure adequate periods of rest
- Encourage good nutritional intake
- Encourage your family member to get out of bed and move around as much as possible
APPENDIX N:

Mini-Mental State Exam (MMSE)
# Mini-Mental State Examination (MMSE)

Patient’s Name: ____________________________  Date: ____________

**Instructions:** Ask the questions in the order listed. Score one point for each correct response within each question or activity.

<table>
<thead>
<tr>
<th>Maximum Score</th>
<th>Patient’s Score</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>“What is the year? Season? Date? Day of the week? Month?”</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>“Where are we now: State? County? Town/city? Hospital? Floor?”</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>The examiner names three unrelated objects clearly and slowly, then asks the patient to name all three of them. The patient’s response is used for scoring. The examiner repeats them until patient learns all of them, if possible. Number of trials: ___________</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>“I would like you to count backward from 100 by sevens.” (93, 86, 79, 72, 65, …) Stop after five answers. Alternative: “Spell WORLD backwards.” (D-L-R-O-W)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>“Earlier I told you the names of three things. Can you tell me what those were?”</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>“Repeat the phrase: ‘No ifs, ands, or buts.’”</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>“Take the paper in your right hand, fold it in half, and put it on the floor.” (The examiner gives the patient a piece of blank paper.)</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>“Please read this and do what it says.” (Written instruction is “Close your eyes.”)</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>“Make up and write a sentence about anything.” (This sentence must contain a noun and a verb.)</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>“Please copy this picture.” (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.)</td>
</tr>
</tbody>
</table>

30 TOTAL

(Adapted from Rovner & Folstein, 1987)
Instructions for administration and scoring of the MMSE

Orientation (10 points):
- Ask for the date. Then specifically ask for parts omitted (e.g., "Can you also tell me what season it is?"). One point for each correct answer.
- Ask in turn, "Can you tell me the name of this hospital (town, county, etc.)?" One point for each correct answer.

Registration (3 points):
- Say the names of three unrelated objects clearly and slowly, allowing approximately one second for each. After you have said all three, ask the patient to repeat them. The number of objects the patient names correctly upon the first repetition determines the score (0-3). If the patient does not repeat all three objects the first time, continue saying the names until the patient is able to repeat all three items, up to six trials. Record the number of trials it takes for the patient to learn the words. If the patient does not eventually learn all three, recall cannot be meaningfully tested.
- After completing this task, tell the patient, "Try to remember the words, as I will ask for them in a little while."

Attention and Calculation (5 points):
- Ask the patient to begin with 100 and count backward by sevens. Stop after five subtractions (93, 86, 79, 72, 65). Score the total number of correct answers.
- If the patient cannot or will not perform the subtraction task, ask the patient to spell the word "world" backwards. The score is the number of letters in correct order (e.g., dlrow=5, dlorw=3).

Recall (3 points):
- Ask the patient if he or she can recall the three words you previously asked him or her to remember. Score the total number of correct answers (0-3).

Language and Praxis (9 points):
- Naming: Show the patient a wrist watch and ask the patient what it is. Repeat with a pencil. Score one point for each correct naming (0-2).
- Repetition: Ask the patient to repeat the sentence after you ("No ifs, ands, or buts."). Allow only one trial. Score 0 or 1.
- 3-Stage Command: Give the patient a piece of blank paper and say, "Take this paper in your right hand, fold it in half, and put it on the floor." Score one point for each part of the command correctly executed.
- Reading: On a blank piece of paper print the sentence, "Close your eyes," in letters large enough for the patient to see clearly. Ask the patient to read the sentence and do what it says. Score one point only if the patient actually closes his or her eyes. This is not a test of memory, so you may prompt the patient to "do what it says" after the patient reads the sentence.
- Writing: Give the patient a blank piece of paper and ask him or her to write a sentence for you. Do not dictate a sentence; it should be written spontaneously. The sentence must contain a subject and a verb and make sense. Correct grammar and punctuation are not necessary.
- Copying: Show the patient the picture of two intersecting pentagons and ask the patient to copy the figure exactly as it is. All ten angles must be present and two must intersect to score one point. Ignore tremor and rotation.

(Folstein, Folstein & McHugh, 1975)
**Interpretation of the MMSE**

<table>
<thead>
<tr>
<th>Method</th>
<th>Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Cutoff</td>
<td>&lt;24</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Range</td>
<td>&lt;21</td>
<td>Increased odds of dementia</td>
</tr>
<tr>
<td></td>
<td>&gt;25</td>
<td>Decreased odds of dementia</td>
</tr>
<tr>
<td>Education</td>
<td>21</td>
<td>Abnormal for 8th grade education</td>
</tr>
<tr>
<td></td>
<td>&lt;23</td>
<td>Abnormal for high school education</td>
</tr>
<tr>
<td></td>
<td>&lt;24</td>
<td>Abnormal for college education</td>
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<tr>
<td>Severity</td>
<td>24-30</td>
<td>No cognitive impairment</td>
</tr>
<tr>
<td></td>
<td>18-23</td>
<td>Mild cognitive impairment</td>
</tr>
<tr>
<td></td>
<td>0-17</td>
<td>Severe cognitive impairment</td>
</tr>
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</table>

**Sources:**
APPENDIX O:

Exercises to improve balance, strength and posture

(Ontario Osteoporosis Strategy)
Exercises to help you to improve your balance, strength and posture to reduce the risk of future fractures

Exercise Instructions

- Do only circled exercises
- Start with 5 repetitions of each exercise and increase until you can do 15 repetitions
- Do the exercise 3 to 4 times per week
- Do not hold your breath
- Keep your back as straight as possible

- Do exercises slowly and hold each position for 2 to 3 seconds
- Do exercises with both sides of the body
- Wear sturdy shoes and comfortable clothing
- Use weights only if recommended by your therapist

1. Knee Straightening
   Sitting – slowly straighten your knee then bring foot back to floor.

2. Chair Stand-Sit
   Sit on the front of a sturdy chair, feet a few inches apart. Slowly rise to standing. Use your arms if you need to help you stand. Pause, then lower yourself back down to sitting.

3. Hands Up Shoulder Pinch
   Sit and raise your arms out to the sides with elbows bent. Pinch your shoulder blades together by moving your elbows as far back as you can.

4. Side Arm Raise
   Sit or stand with arms at your side. Lift your arms to shoulder height, keeping your elbows straight.

5. Biceps Elbow Bend
   Sit or stand with your arms at your sides and palms facing up. Bring one hand toward your shoulder, then lower your arm down.

6. Chin Tuck
   Stand with your back against a wall. Push the back of your head into the wall. Feel the muscles stretch. Keep your chin tucked in and do not look up.

Are there risks to exercising?

- Avoid toe touches and sit-ups, which can lead to spine fractures
- If you experience sharp, acute pain you should stop exercising immediately and consult your doctor or therapist before restarting the program
- Start your program gently and progress slowly
- Some muscle stiffness or soreness is expected when starting a new exercise program. If aches and pains do not disappear within 24 to 48 hours see your doctor or therapist

Exercise can help you to stay active, independent and healthy. We know that people who have had one fracture have a higher risk of having another fracture. Exercise can help you to reduce this risk by improving your balance and strength.
7. **Leg Lifts - Side**
   Stand on one foot, using a sturdy chair or counter for support as needed. Raise your leg out to the side, hold, then lower.

8. **Toe Rises**
   Rise up and down on your toes. Use a sturdy chair or counter for support.

9. **Leg Lifts - Back**
   Stand and hold onto a chair or counter. Keep your back as straight as possible. Lift one leg behind you a few inches off the floor.

10. **Walking**
    Walk from room to room. Gradually increase the amount you walk following your therapist's/doctor's instructions. Walking is important as it helps build strong bones.

11. **Overhead Reach**
    Sit or stand with your head and back flat against a wall. Raise your arms as high as possible, keeping contact with the wall. (do not lift weights overhead)

12. **Arm Extension**
    Stand as straight as possible and extend your arms back behind you. Keep your head up.

13. **Steps and Stairs**
    Go up and down stairs whenever you can. Hold the railing for balance. Keep your spine as straight as possible.

14. **Wall Press**
    Stand or sit with your elbows straight and hands flat on the wall. - bend your elbows, leaning into the wall, then straighten.

**Notes:**

This is page 2 of a 2-page handout. Please ask the person who provided it for page 1, as it includes important information including exercise instructions.
APPENDIX P: Discharge / Transfer Checklist List – For Transfer of Patients to Inpatient Rehab/CCC (GTA Rehab Network)

Inpatient rehab/CCC should be notified before transfer of patient if:
- Patient requires medications not usually available in a rehabilitation pharmacy
- Any changes in infection status
- New IV insert
- Significant change/deterioration in medical condition

If the following information is not included in the discharge summary report, please attach the most recent and relevant documents for the information below.

<table>
<thead>
<tr>
<th>Relevant Investigations</th>
<th>Status Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Labwork</td>
<td>□ Patient care plan</td>
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<tr>
<td>□ CT scan report</td>
<td>□ Current voiding status</td>
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<tr>
<td>□ MRI Scan report</td>
<td>□ Current diet orders</td>
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<td>□ ECG</td>
<td>□ Current medication administration record (MAR)</td>
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<td>□ INR (5 day coumadin dose history)</td>
<td>□ IV Therapy</td>
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<tr>
<td>□ Videopharyngeal Swallowing report</td>
<td>□ Current Infection Control Status</td>
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<td>□ Chest X-ray report</td>
<td>□ Current wound management</td>
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<td>□ G-tube feeds/type/tube size/schedule/change date</td>
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<tr>
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<td>□ Ostomy</td>
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<td>□ Current O₂ rate and flow</td>
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<td>□ Advance Care Directives</td>
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<th>Treatment Reports</th>
<th>Follow Up / Treatment Appointments</th>
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<td>□ Appointment Date/Time/Location</td>
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<td>□ Last OT, PT, SLP, SW assessment and progress notes</td>
<td>□ Preparation Required</td>
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