

Procedure:  HF SIDE:  RIGHT  LEFT DISCHARGE DESTINATION:  INPATIENT REHAB  HOME  LTC

Date: _____	<b>Preoperative</b> (Emergency or Inpatient)	TARGET DISCHARGE DATE _____
See also Appendix A: Bone & Joint Health Network's Quick Reference Guide <i>Improving Time to Surgery-Emergency Room, Preoperative and Immediate Postoperative Clinical Practice Guidelines for Hip Fracture Patient Management</i>		

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>1. Assessment</b>	<p>Preoperative assessment completed</p> <p>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)<sup>1</sup></p> <p>Skin assessment completed including use of foot booties as per protocol</p> <p>Falls risk assessment completed (See Appendix B: St. Michael's Falls Risk Assessment Profile)</p> <p>Bowel assessment completed</p> <p>Pain assessment completed</p> <p>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</p> <p>Treatments implemented as per protocols</p>
<b>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</b>	<p>Document Baseline Functioning &amp; Mental Status – hx of previous delirium, dementia and/or depression</p> <p>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.<sup>2</sup> (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)</p> <p>Consider referral for geriatric/internal medicine consultation</p> <p>Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, pain management</p>
<b>3. Tests</b>	<p>Blood work (as per protocol, if existing delirium or high risk of delirium include B12, TSH, CBC, GBCL, Liver profile)</p> <p>X-ray of index joint (as per protocol)</p> <p>Chest x-ray (as per protocol)</p> <p>ECG (age &gt;45 or as per protocol)</p> <p>Urine sample (as per protocol if there is an existing delirium or high risk of delirium)</p>
<b>4. Medication</b>	<p>Obtain medication profile</p> <p>Pain assessment and management by Acute Pain Service (as per protocol)</p> <p>Education: post op pain management (as per protocol) ___pt ___ family</p> <p>Education: post op DVT prophylaxis (as per protocol)</p> <p>Education: antibiotic prophylaxis (as per protocol)</p> <p>Reconciliation of medications as per pharmacist</p> <p>(See Appendix E: Sunnybrook Health Sciences Centre Admission Orders for Hip Fracture)</p>
<b>5. Osteoporosis Strategy</b>	<p>Consider implementation of Osteoporosis Strategy<sup>3</sup></p>

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

<sup>1</sup> 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.

<sup>2</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>3</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsmann, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website: [www.osteoporosis.ca/multimedia/tools.html](http://www.osteoporosis.ca/multimedia/tools.html)

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>6. Fluid Nutrition Elimination</b>	<p>Canadian Anesthesiologists' Society guidelines for fasting are:</p> <ul style="list-style-type: none"> <li>≥2 hours – clear fluids</li> <li>≥6 hours – light meals (i.e. toast, non-human milk)</li> <li>≥8 hours – heavy meals (i.e. meat, fried or fatty foods)</li> </ul> <p>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.<sup>4</sup></p> <p>Consider feeding protocol for patients "on call"<sup>5</sup> (See Appendix G: Mount Sinai Pre-printed diet guidelines order set)</p> <p>Breakfast – clear fluids, high protein drink</p> <p>NPO status</p> <p>IV when NPO as per protocol</p>
<b>7. Activity / Mobility</b>	<p>Bedrest – reposition q2h</p> <p>Ed: Post op PT protocols</p>
<b>8. Client / Family Perspective</b>	<p>Education: Overall clinical pathway</p> <p>Provide education materials – Information for Hip Fracture Patients (See Appendix H)</p> <p>Education: Hip Precautions<sup>6</sup></p> <p>Education: Discharge destination home/inpt rehab/LTC</p> <p>Concerns / questions addressed</p>
<b>9. Discharge Planning</b>	<p>Consult clinical team/Social work re: discharge planning</p> <p>Establish discharge plan and goals</p>

for the Osteoporosis and Fragility Fracture Management Order Set and additional information. Each hospital to determine its own standing orders. Also see Appendix F for risk factors.

<sup>4</sup> Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>5</sup> 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.

Maltby, J. Roger, Sutherland, A.D., Sale, J.P. and Shagger, E.A. Pre-operative oral fluids: is a five hour fast justified prior to elective surgery? *Anesthesia and Analgesia*, 1986, 65(11), 1112-1116.

Miller, M., H.Y. Wishart, and W.S. Nimmo. Gastric Contents at Induction of Anaesthesia: Is a 4-hour fast necessary? *British Journal of Anaesthesia*, 1983. 55(12), 1185-1187.

Smith, A.F., Vallance, H., and Slater, R.M. Shorter preoperative fluid fasts reduce postoperative emesis. *British Medical Journal*, 1997 May 17; 314 (7092): 1486.

<sup>6</sup> See "Total Hip Replacement Patient Education Seminar" for information on total hip replacement, preparation for surgery, recovery, hip precautions and managing at home. The pdf document can be downloaded from Hip Fracture, Patient Education section of the Bone & Joint Health Network's website at <http://www.boneandjointhealthnetwork.ca/home.php>

Date: _____ Arrived on unit _____ hr	Day of Surgery - PACU    Day - 0
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	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>1. Assessment</b>	Assessment of VS, level of consciousness / airway, SaO <sub>2</sub> , CSM/Pedal Pulses, Dressings Skin assessment and intervention as per hospital protocols
<b>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</b>	Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids 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. <sup>7</sup>
<b>3. Tests</b>	Blood work: CBC (if requested) X-ray: AP hip (as per protocol)
<b>4. Treatments</b>	O <sub>2</sub> to keep SaO <sub>2</sub> ≥ 96% <sup>8 9</sup> (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders) Blood transfusion if required Apply off-loading heel boot to operated side, monitor skin integrity and alternate heel boot q2.
<b>5. Medication</b>	Post op pain management (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)
<b>6. Fluid Nutrition Elimination</b>	NPO (sips of water) IV fluids as per protocol Monitor urine output If OR cancelled, resume previous diet
<b>7. Activity / Mobility</b>	Deep Breathing Review THR precautions (Is abduction pillow indicated?)
<b>8. Client / Family Perspective</b>	Family informed of patients status
<b>9. Discharge Planning</b>	Patient transferred to unit when stable

<sup>7</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>8</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>9</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

Date: _____ Arrived on unit _____ hr	<b>Day of Surgery – Inpatient Unit</b>	<b>Day - 0</b>
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	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>1. Assessment</b>	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) <sup>10</sup> VS / LOC q4h if stable CSM q8h SaO <sub>2</sub> q4h Dressings assess q4h Pain assessment q4h and prn Assessment of wound (if applicable) <div style="margin-left: 200px;">             } Or more frequently as needed.           </div>
<b>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</b>	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. <sup>11</sup> (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
<b>3. Treatments</b>	Titrate O <sub>2</sub> to keep SaO <sub>2</sub> ≥96% <sup>12 13</sup> (unless otherwise medically indicated) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders )
<b>4. Medication</b>	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 <sup>14</sup>
<b>5. Fluid Nutrition Elimination</b>	DAT – high fibre as tolerated IV fluids as per protocol reduce to TKVO/saline lock when drinking well Foley catheter as per protocol <sup>15</sup> : <ol style="list-style-type: none"> <li>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.</li> <li>2. Ensure that the least invasive method is being used to meet your patient’s needs. Intermittent catheterization is less invasive than indwelling catheters.</li> <li>3. If you are concerned that your patient does not meet the Criteria for Insertion of Indwelling Catheters, (Appendix K) call MD for clarification</li> </ol> Monitor urine output Start bowel routine: See Appendix L: Bowel Management Protocol (Sunnybrook Health Sciences Centre)

<sup>10</sup> Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.

<sup>11</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>12</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>13</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

<sup>14</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website: [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.

<sup>15</sup> Adapted from Toronto East General Hospital’s Nursing Policy and Procedure Manual. See also:  
 Wong, E.S. & Hooton, T.M. (2005) *Guidelines for Prevention of Catheter-Associated Urinary Tract Infections*. Centre for Disease Control and Prevention. Atlanta Georgia, USA.  
 APIC (2008) *Guide to the Elimination of Catheter-Associated Urinary Tract Infection (CAUTIs): Developing and applying Facility-Based Prevention Interventions in Acute and Long-Term Care Settings*. Association for Professionals in Infection Control and Epidemiology. Washington DC.

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>6. Activity / Mobility</b>	<p>Activity as tolerated</p> <p>Patient to be mobilized as soon as medically stable (i.e. within 12 -24 hours of surgery):<sup>16</sup></p> <ul style="list-style-type: none"> <li>• Mobility can start with sitting/dangling in very frail patients but should progress to standing within 24 hours of surgery</li> <li>• Ambulation status to be posted at bedside</li> <li>• Weight-bearing status should be 'as tolerated'; if not, discuss with surgeon regarding ambulation prognosis</li> <li>• Daily PT and OT (including weekends) to be provided</li> </ul> <p>Observe THR precautions for hemiarthroplasty</p> <p>Deep breathing: 10 deep breaths /hr, cough if secretions</p> <p>Reposition Q2 while in bed</p>
<b>7. Client / Family Perspective</b>	Provide emotional support
<b>8. Discharge Planning</b>	<p>Consult clinical team/Social work re: discharge planning</p> <p>Establish discharge plan and goals</p>

Lo, E., Nicolle, L., Classen, D. Et al. (2008). Strategies to Prevent Catheter-Associated Urinary Tract Infection in Acute Care Hospitals. Supplement Article: SHEA/IDSA Practice Recommendation. *Infection Control and Hospital Epidemiology*: 29 (1). Pg. s41 – s50.

<sup>16</sup> Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

Date: _____ Arrived on unit _____ hr	<b>Post-op Day 1</b>
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	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>1. Assessment</b>	<p>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.<sup>17</sup> VS q4 CSM q4 SaO<sub>2</sub> q4 until pt off O<sub>2</sub>. D/C O<sub>2</sub> if ≥ 96%.<sup>18 19</sup> (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.)<sup>20</sup> 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)<sup>21</sup></p>
<b>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</b>	<p>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.<sup>22</sup> (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.<sup>23</sup></p>
<b>3. Tests</b>	CBC, lytes, BUN, creatinine, BS (if diabetic)
<b>4. Treatments</b>	<p>Titrate O<sub>2</sub> to keep SaO<sub>2</sub> ≥ 96%,<sup>24 25</sup> D/C if SaO<sub>2</sub> ≥ 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</p>

<sup>17</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>18</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>19</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

<sup>20</sup> Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>21</sup> Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.

<sup>22</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>23</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>24</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>25</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>5. Medication</b>	<p>Post op pain management (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</p> <p>DVT prophylaxis</p> <p>Antiemetics (as per protocol) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</p> <p>If tolerating diet, Vitamin D as per recommendations from the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.<sup>26</sup></p>
<b>6. Osteoporosis Strategy</b>	<p>Consider implementation of Osteoporosis Strategy<sup>26</sup></p> <p>Components of osteoporosis assessment to include:<sup>27</sup></p> <ul style="list-style-type: none"> <li>• Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael's Falls Risk Assessment Profile)</li> <li>• Provide nutritional counselling</li> <li>• Address vitamin D insufficiency</li> <li>• Consider pharmacological treatment in previously untreated patients</li> <li>• Continue pharmacologic treatment in previously treated patients</li> <li>• Do not delay treatment initiation in order to obtain Bone Mineral Density results</li> </ul> <p>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>)</p>
<b>7. Fluid Nutrition Elimination</b>	<p>Continue high fiber diet as tolerated</p> <p>Monitor dietary intake &amp; output q shift (bowel sounds and bowel movement)</p> <p>IV fluids as per protocol, D/C when drinking well</p> <p>Foley catheter as per protocol<sup>28</sup>:</p> <ol style="list-style-type: none"> <li>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.</li> <li>2. Ensure that the least invasive method is being used to meet your patient's needs. Intermittent catheterization is less invasive than indwelling catheters.</li> <li>3. If you are concerned that your patient does not meet the Criteria for Insertion of Indwelling Catheters, (Appendix K) call MD for clarification</li> </ol> <p>Monitor urine output / urinary retention</p> <p>Bowel routine (as per protocol) (See Appendix L: Bowel Management Protocol (Sunnybrook Health Sciences Centre))</p>

<sup>26</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website: [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.

<sup>27</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>28</sup> Adapted from Toronto East General Hospital's Nursing Policy and Procedure Manual. See also: Wong, E.S. & Hooton, T.M. (2005) Guidelines for Prevention of Catheter-Associated Urinary Tract Infections. Centre for Disease Control and Prevention. Atlanta Georgia, USA.

APIC (2008) Guide to the Elimination of Catheter-Associated Urinary Tract Infection (CAUTIs): Developing and applying Facility-Based Prevention Interventions in Acute and Long-Term Care Settings. Association for Professionals in Infection Control and Epidemiology. Washington DC.  
 Lo, E., Nicolle, L., Classen, D. Et al. (2008). Strategies to Prevent Catheter-Associated Urinary Tract Infection in Acute Care Hospitals. Supplement Article: SHEA/IDSA Practice Recommendation. *Infection Control and Hospital Epidemiology*: 29 (1). Pg. s41 – s50.

<i>Interventions and care pathway to be supported by physician orders.</i>	
<b>8. Activity / Mobility</b>	<p>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.<sup>29</sup></p> <p><u>As per PT recommendations:</u>  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 &amp; coughing  Education: Hip Precautions  Active / assisted bed exercises  THR begin AAROM exercises  Teach safe transfer techniques</p> <p>Gait training begin assisted walking if stable  Weight Bearing as tolerated: (unless otherwise stated by MD)  <input type="checkbox"/> TWB      <input type="checkbox"/> WBAT      <input type="checkbox"/> PWB: 50%      <input type="checkbox"/> NWB</p>
<b>9. Client / Family Perspective</b>	<p>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)</p>
<b>10. Discharge Planning</b>	<p>Consult clinical team/Social work re: discharge planning  Establish discharge plan and goals</p>

<sup>29</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011

Date: _____ Arrived on unit _____ hr	<b>Post-op Day 2-3</b>
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<i>Interventions and care pathway to be supported by physician orders.</i>	
<b>1. Assessment</b>	<p>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.<sup>30</sup></p> <p>VS q shift if stable CSM q shift if stable SaO<sub>2</sub> q shift if stable until pt off O<sub>2</sub>. D/C O<sub>2</sub> if &gt;96%.<sup>31 32</sup> (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders) } Or as frequently as needed</p> <p>Incision check q shift 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.)<sup>33</sup> 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)<sup>34</sup></p>
<b>2. Prevention &amp; Screening for Delirium, Dementia &amp; Depression</b>	<p>Consider delirium prevention strategies – orientation protocols, fluid enhancement, availability of vision/hearing aids, mobility enhancement, non-pharmacological sleep enhancement.</p> <p>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.<sup>35</sup> (See Appendix C: Sunnybrook Health Sciences Centre Delirium Algorithm and Behaviour Safety Risk Algorithm. See Appendix D: Toronto East General Hospital Delirium Order Set)</p> <p>Assessment for delirium – CAM (See Appendix J) If distressed, consider pharmacological management only if necessary Screen for Dementia – MMSE baseline (See Appendix N) 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.<sup>36</sup></p>
<b>3. Tests</b>	<p>CBC, lytes, creatinine, PT/INR if taking warfarin post-op, BS (if diabetic) on post op Day 3 Daily INR only for patients on warfarin</p>
<b>4. Treatments</b>	<p>Titrate O<sub>2</sub> to keep SaO<sub>2</sub> ≥ 96%.<sup>37 38 39</sup> D/C is SaO<sub>2</sub> ≥ 96% on room air (take into consideration patient's pre-existing levels) (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders ) Change wound dressings (as per protocol) Inform MD of INR results for Warfarin order (if applicable) Blood transfusion (as per protocol) – if needed</p>

<sup>30</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>31</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>32</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

<sup>33</sup> Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>34</sup> Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.

<sup>35</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>36</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>37</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>38</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

<sup>39</sup> 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.

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>5. Medication</b>	<p>Post op pain management - oral analgesics (as per protocol)  DVT prophylaxis  Antiemetics as required  (See Appendix I: Sunnybrook Health Sciences Centre Post-op Orders)</p> <p>If tolerating diet, Vitamin D as per recommendations from the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.<sup>40</sup></p>
<b>6. Osteoporosis Strategy</b>	<p>Consider implementation of Osteoporosis Strategy<sup>41</sup>  Components of osteoporosis assessment to include:<sup>42</sup></p> <ul style="list-style-type: none"> <li>• Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael's Falls Risk Assessment Profile)</li> <li>• Provide nutritional counselling</li> <li>• Address vitamin D insufficiency</li> <li>• Consider pharmacological treatment in previously untreated patients</li> <li>• Continue pharmacologic treatment in previously treated patients</li> <li>• Do not delay treatment initiation in order to obtain Bone Mineral Density results</li> </ul> <p>Provide Osteoporosis Pt/ Family Education – "Exercises to improve balance, strength and posture" (See Appendix O)</p>
<b>7. Fluid Nutrition Elimination</b>	<p>DAT – high fibre as tolerated  Monitor dietary intake &amp; 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))</p>
<b>8. Activity / Mobility</b>	<p>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.<sup>43</sup>  Patient to be assisted in transfer to commode for purpose of promoting bowel function  Encourage deep breathing &amp; 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</p> <p>OT intervention – assessment of ADLs &amp; review of home equipment needs if plan for discharge home  Gait training assisted walking in AM and PM</p>
<b>9. Client / Family Perspective</b>	Identify and address patient / family concerns
<b>10. Discharge Planning</b>	<p>Confirm discharge plan for all  Refer to Inpt Rehab – Day 2 post-op</p>

<sup>40</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website: [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.

<sup>41</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website: [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. Also see Appendix F for risk factors.

<sup>42</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>43</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

Date: _____ Arrived on unit _____ hr	Post-op Day 4
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	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>1. Assessment</b>	<p>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.<sup>44</sup>          VS q shift if stable          CSM q          SaO<sub>2</sub> q until pt off O<sub>2</sub>. D/C O<sub>2</sub> if ≥96%.<sup>45 46 47</sup>          (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.)<sup>48</sup>          Consults from clinical services are to be available to consider co-morbidities and other clinical issues (e.g. internal medicine, Acute Pain Service, Thrombo-embolis Service, Geriatrician, Occupational Therapy)<sup>49</sup></p>
<b>2. Prevention &amp; Screening Delirium, Dementia &amp; Depression</b>	<p>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.<sup>50</sup> (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          Screen for Dementia – MMSE baseline (See Appendix N)          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.<sup>51</sup></p>
<b>3. Tests</b>	INR if taking warfarin
<b>4. Treatments</b>	Change wound dressings (as per protocol) Inform MD of INR results for Warfarin order (if applicable)
<b>5. Medication</b>	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. <sup>52</sup>

<sup>44</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>45</sup> Robertson, Benjamin D. Roberson, Timothy J. Postoperative delirium after hip fracture. *Journal of Bone and Joint Surgery*, 2006; 88:2006-2068

<sup>46</sup> Björkelund, K.B. Hommel, A. Thorngren, K.-G. Gustafson, L. Larsson, S. Lundberg, D. Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study. *Acta Anaesthesiologica Scandinavica*. 2010; 54: 678–688.

<sup>47</sup> 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.

<sup>48</sup> Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>49</sup> Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.

<sup>50</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>51</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>52</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website:

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>6. Osteoporosis Strategy</b>	<p>Consider implementation of Osteoporosis Strategy<sup>53</sup>            Components of osteoporosis assessment to include:<sup>54</sup></p> <ul style="list-style-type: none"> <li>• Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael's Falls Risk Assessment Profile)</li> <li>• Provide nutritional counselling</li> <li>• Address vitamin D insufficiency</li> <li>• Consider pharmacological treatment in previously untreated patients</li> <li>• Continue pharmacologic treatment in previously treated patients</li> <li>• Do not delay treatment initiation in order to obtain Bone Mineral Density results</li> </ul> <p>See Appendix O: Exercises to improve balance, strength and posture</p>
<b>7. Fluid Nutrition Elimination</b>	<p>High fiber DAT as tolerated            Monitor dietary intake &amp; output q shift (bowel sounds)</p> <p>IV fluids as per protocol. D/C when drinking well</p> <p>Monitor urine output / urinary retention            Bowel routine (as per protocol) (See Appendix L: Bowel Management Protocol (Sunnybrook Health Sciences Centre))</p>
<b>8. Activity / Mobility</b>	<p>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.<sup>55</sup></p> <p>Patient to be assisted in transfer to commode for purpose of promoting bowel function            Encourage deep breathing &amp; 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</p> <p>PT treatments bid (as per protocol)            OT intervention (as per protocol)            Encourage independence in self care</p> <p>Gait training assisted walking in AM and PM</p> <p>Initiate stair climbing exercise with supervision if going home</p>
<b>9. Client / Family Perspective</b>	Identify and address patient / family concerns
<b>10. Discharge Planning</b>	<p>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</p> <p>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.</p>

[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.

<sup>53</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website:

[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. Also see Appendix F for risk factors.

<sup>54</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>55</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011

Date: _____ Arrived on unit _____ hr	<b>Post-op Day 5 Target Discharge to Inpt Rehab/Home</b>
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	<i>Interventions and care pathway to be supported by physician orders.</i>			
<b>1. Assessment</b>	<p>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.<sup>56</sup></p> <table style="border: none; margin-left: 20px;"> <tr> <td style="border: none;">           VS q4            CSM q4            Incision check            Pain q4h         </td> <td style="border: none; font-size: 3em; vertical-align: middle; padding: 0 10px;">}</td> <td style="border: none; vertical-align: middle;">Or as frequently as needed</td> </tr> </table> <p>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.)<sup>57</sup>            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)<sup>58</sup></p>	VS q4 CSM q4 Incision check Pain q4h	}	Or as frequently as needed
VS q4 CSM q4 Incision check Pain q4h	}	Or as frequently as needed		
<b>2. Prevention &amp; Screening for Delirium, Dementia, &amp; Depression</b>	<p>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.<sup>59</sup> (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.<sup>60</sup></p>			
<b>3. Tests</b>	<p>CBC, lytes, BUN/creatinine, BS (if diabetic)            INR if patient on warfarin and not discharged or transferred</p>			
<b>4. Treatments</b>	<p>Change wound dressings (as per protocol)            Inform MD of INR results for Warfarin order (if applicable)</p>			
<b>5. Medication</b>	<p>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.<sup>61</sup></p>			

<sup>56</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>57</sup> Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>58</sup> Recommend development of criteria to determine the types of consults that are to be made available and under what circumstances they should be requested.

<sup>59</sup> Inouye, S.K. and Charpentier, P.A. (1996). Precipitating factors for delirium in hospitalized elderly persons: A predictive model and interrelationship with baseline vulnerability. *Journal of the American Medical Association*, 275, 852-857.

<sup>60</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

<sup>61</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodson, A., Jamal, S. A., Kaiser, S. M., Kverin, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website:

[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. Also see Appendix F for risk factors.

	<i>Interventions and care pathway to be supported by physician orders.</i>
<b>6. Osteoporosis Strategy</b>	<p>Consider implementation of Osteoporosis Strategy<sup>62</sup>  Components of osteoporosis assessment to include:<sup>63</sup></p> <ul style="list-style-type: none"> <li>• Counselling on fall prevention and lifestyle modification to reduce fall risks (See Appendix B: St Michael's Falls Risk Assessment Profile)</li> <li>• Provide nutritional counselling</li> <li>• Address vitamin D insufficiency</li> <li>• Consider pharmacological treatment in previously untreated patients</li> <li>• Continue pharmacologic treatment in previously treated patients</li> <li>• Do not delay treatment initiation in order to obtain Bone Mineral Density results</li> </ul> <p>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, <a href="http://www.osteoporosis.ca/multimedia/tools.html">www.osteoporosis.ca/multimedia/tools.html</a>)</p>
<b>7. Fluid Nutrition Elimination</b>	<p>High fiber diet as tolerated  Monitor dietary intake &amp; 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</p>
<b>8. Activity / Mobility</b>	<p>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</p>
<b>9. Client / Family Perspective</b>	<p>Express confidence in activity level and safe precautions</p>
<b>10. Discharge Planning</b>	<p>Discharge Inpt Rehab or Home today</p>

<sup>62</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsman, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. *CMAJ* • November 23, 2010 • 182(17). See also the Osteoporosis Canada website: [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. Also see Appendix F for risk factors.

<sup>63</sup> See Bone and Joint Decade Canada. National Hip Fracture Toolkit. June 30, 2011.

**APPENDIX A:**

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

**APPENDIX B:  
Falls Risk Assessment  
(St. Michael's)**

**APPENDIX C:**

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

**APPENDIX D:  
Delirium Order Set  
(Toronto East General Hospital)**

**APPENDIX E:  
Admission Orders for Hip Fracture  
(Sunnybrook Health Sciences Centre)**

## APPENDIX F: Osteoporosis Risk Factors – 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada<sup>64</sup>

<b>Indications for measuring bone mineral density</b> <b>From 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada</b> CMAJ • NOVEMBER 23, 2010 • 182(17)	
<i>Older adults (age ≥ 50 yr)</i>	<i>Younger adults (age &lt;50 yr)</i>
<ul style="list-style-type: none"> <li>• Age ≥ 65 years (both women and men)</li> <li>• Clinical risk factors for fracture (menopausal women, men age 50-64 yr):                             <ul style="list-style-type: none"> <li>○ Fragility fracture after age 40 yr</li> <li>○ Prolonged use of glucocorticoids*</li> <li>○ Use of other high-risk medications**</li> <li>○ Parental hip fracture</li> <li>○ Vertebral fracture or osteopenia identified on radiography</li> <li>○ Current smoking</li> <li>○ High alcohol intake</li> <li>○ Low body weight (&lt;60 kg) or major weight loss (&gt;10% of body weight at age 25 yr)</li> <li>○ Rheumatoid arthritis</li> <li>○ Other disorders strongly associated with osteoporosis such as primary hyperparathyroidism, type 1 diabetes, osteogenesis imperfecta, uncontrolled hyperthyroidism, hypogonadism or premature menopause (&lt; 45 years), Cushing’s disease, chronic malnutrition or malabsorption, chronic liver disease, COPD and chronic inflammatory conditions (e.g., inflammatory bowel disease)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Fragility fracture</li> <li>• Prolonged use of glucocorticoids*</li> <li>• Use of other high-risk medications**</li> <li>• Hypogonadism or premature menopause (age &lt;45 yr)</li> <li>• Malabsorption syndrome</li> <li>• Primary hyperparathyroidism</li> <li>• Other disorders strongly associated with rapid bone loss and/or fracture</li> </ul>

\*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>

<sup>64</sup> See Papaioannou, A., Morin, S., Cheung, A.M., Atkinson, S., Brown, J.P., Feldman, S., Hanley, D.A., Hodsmann, A., Jamal, S. A., Kaiser, S. M., Kvern, B., Siminoski, K., Leslie, W.D.: Scientific Advisory Council of Osteoporosis Canada. 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada. CMAJ • November 23, 2010 • 182(17).

**APPENDIX G:  
Hip Fracture Admission Order Set with Pre-printed Diet Guidelines  
(Mount Sinai Hospital)**

**APPENDIX H:  
Hip Fracture Pamphlet  
(Sunnybrook Health Sciences Centre)**

**APPENDIX I:  
Post Operative Orders for Patients with Hip Fracture  
(Sunnybrook Health Sciences Centre)**

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

**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:**

- Wong, E.S. & Hooton, T.M. (2005) Guidelines for Prevention of Catheter-associated Urinary Tract Infections. Centre for Disease Control and Prevention. Atlanta Georgia, USA
- APIC (2008) Guide to the Elimination of Catheter-Associated Urinary Tract Infection (CAUTIs): Developing and applying Facility-Based Prevention Interventions in Acute and Long-Term Care Settings. Association for Professionals in Infection Control and Epidemiology. Washington DC.
- Lo, E., Nicolle, L., Classen, D. Et al. (2008). Strategies to Prevent Catheter-associated urinary Tract Infection in Acute Care Hospitals. Supplement Article: SHEA/IDSA Practice Recommendation. *Infection Control and Hospital Epidemiology*: 29 (1). Pg. s41 – s50.

**APPENDIX L:**

**Bowel Management Protocol  
(Sunnybrook Health Sciences Centre)**

**APPENDIX M:  
Understanding Acute Delirium  
(Sunnybrook Health Sciences Centre)**

**APPENDIX N:  
Mini-Mental State Exam (MMSE)**

**APPENDIX O:  
Exercises to improve balance, strength and posture  
(Ontario Osteoporosis Strategy)**

**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.**

Relevant Investigations	Status Reports
<input type="checkbox"/> Labwork <input type="checkbox"/> CT scan report <input type="checkbox"/> MRI Scan report <input type="checkbox"/> ECG <input type="checkbox"/> INR (5 day coumadin dose history) <input type="checkbox"/> Videopharyngeal Swallowing report <input type="checkbox"/> Chest X-ray report <input type="checkbox"/> Other (specify)	<input type="checkbox"/> Patient care plan <input type="checkbox"/> Current voiding status <input type="checkbox"/> Current diet orders <input type="checkbox"/> Current medication administration record (MAR) <input type="checkbox"/> IV Therapy <input type="checkbox"/> Current Infection Control Status <input type="checkbox"/> Current wound management <input type="checkbox"/> G-tube feeds/type/tube size/schedule/change date <input type="checkbox"/> Ostomy <input type="checkbox"/> Current O <sub>2</sub> rate and flow <input type="checkbox"/> Advance Care Directives
Treatment Reports	Follow Up / Treatment Appointments
<input type="checkbox"/> Consultation notes <input type="checkbox"/> Medical discharge summary <input type="checkbox"/> Last OT, PT, SLP, SW assessment and progress notes	<input type="checkbox"/> Type of Appointment <input type="checkbox"/> Appointment Date/Time/Location <input type="checkbox"/> Preparation Required