### Inpatient Rehab Hip Fracture Clinical Pathway*

October 2011

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#### Legend:
- Initial beside each tick box
- In-box = met/completed
- In-box = unmet / not completed
- X In-box = not applicable

#### NOTE:
This rehab pathway focuses on only those activities that are particular to the rehabilitation of hip fracture patients and does not include activities that are routinely done for all rehab inpatients.

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**ADMITTED FROM:**

**DATE OF SURGERY:**

**PROCEDURE:**

- THR
- HEMI
- ORIF

**WT. BEARING STATUS:**

- AKI
- WBAT
- PWB: 50%
- NWB:

**DATE OF FRACTURE CLINIC FOLLOW-UP APPOINTMENT:**

**DISCHARGE DESTINATION:**

- Home
- Retirement Home
- Inpatient Geriatric
- CCC
- Convalescent Care
- LTC

Date: __________________________ Arrived on Unit __________________________ hr

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<table>
<thead>
<tr>
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<th>Day 6</th>
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<tbody>
<tr>
<td>1. Orientation : Family and Patient</td>
<td>● Health Care Profession (HCP) provides patient and family with orientation pamphlet. Discuss expectations during rehab stay.</td>
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<td>2. Assessment &amp; Treatment</td>
<td>● Skin assessment including wound – Braden Scale and identification/implementation of preventative strategies</td>
<td>● Fall assessment (as per protocol)</td>
<td>● Pain q4h</td>
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<td></td>
<td>● Assess for behavioural, cognitive and functional status</td>
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<td>3. Screening for delirium, depression and dementia</td>
<td>Screen for delirium by Nursing – Confusion Assessment Method (CAM – See Appendix A). 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.(^1)</td>
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<td></td>
<td>● Screen for dementia using the MiniCog or MMSE (See Appendix B &amp; C)</td>
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<td>● If depression is suspected – member of clinical team to complete Geriatric Depression Scale (GDS) or Cornell Depression Scale for those with dementia.</td>
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<td>● Assessment findings to trigger referral to geriatrician and other community resources/programs (e.g. falls prevention program)</td>
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<td></td>
<td>● Provide educational information on delirium to patient/family (See Appendix D: Understanding Acute Delirium as an example of information that can be provided.)</td>
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<td>4. Tests</td>
<td>● CBC, lytes, creatinine, INR if on warfarin and determine next order date as per rehab unit protocol, BS (if diabetic)</td>
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<td>5. Medication</td>
<td>● Post op pain management (as per protocol)</td>
<td>● Anticoagulant, if on warfarin, a longitudinal anticoagulant record must be maintained (as per protocol)</td>
<td>● Ensure no other co-morbidities that necessitate use of anticoagulants on admission and discharge</td>
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<td></td>
<td>● Antiemetics (low dose, non-drowsy gravol) as required</td>
<td>● Bowel routine (as per protocol)</td>
<td>● Iron supplements (as per protocol)</td>
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<td></td>
<td>● Assess for polypharmacy; admission/discharge medication reconciliation</td>
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* Adapted from the Bone and Joint Health Network’s Inpatient Rehab Hip Fracture Clinical Pathway Rapid Assessment Treatment June 2009 by the GTA Rehab Network in 2011

### Inpatient Rehab

**Hip Fracture Clinical Pathway***

October 2011

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<td>6. Fluid Nutrition Elimination</td>
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<td>• Reconciliation of medication as per pharmacist</td>
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<td>• High fiber diet as tolerated.</td>
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<td>• Monitor dietary intake &amp; output (if required); Dietary consult if warranted</td>
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<td>• Continence program initiated; start retraining bladder program as appropriate based on assessment if necessary</td>
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<td>• Monitor urine output/urinary retention; continue to monitor for discharge of Foley catheter as soon as possible²</td>
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<td>• Monitor Bowel function</td>
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<td><strong>Recommendations:</strong></td>
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<td>1. Patient to be up in chair for meals</td>
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<td>2. Patient to be assisted in transfer to commode for purpose of promoting bowel function</td>
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<td>7. Activity/Mobility</td>
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<td>• Initiate schedule and treatments – PT, OT and Nursing: physical, cognitive and behavioural</td>
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<td>1. Patient to be assessed and given appropriate walking aid</td>
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<td>2. Educate and practice safe transfers</td>
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<td>3. Commence ROM/strengthening exercise program specific for fractured hips</td>
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<td>4. THR or Hemi-arthroplasty review of precautions</td>
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<td>8. Client /Family Perspective</td>
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<td>• Orient patient and family to patient specific care</td>
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<td>• Obtain history of cognitive and functional pre-injury status</td>
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<td>• Ongoing communication with pt/family to review care treatment program and discharge plan</td>
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<td>• Identify and address patient/family concerns</td>
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<td>• Express confidence in activity level and safe precautions</td>
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<td>9. Osteoporosis Strategy</td>
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<td>• Identify previous diagnosis of osteoporosis</td>
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<td>• Assess need for osteoporosis management³ (See Appendix E)</td>
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<td>• Order Bone Mineral Density Testing (if not ordered previously and if possible) or recommend follow-up with Family Physician</td>
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<td>• Vitamin D as per recommendations in the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.³</td>
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<td>• Consider orders for pharmaceutical treatment for osteoporosis.³</td>
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<td>• Begin/continue muscle strengthening, balance and posture exercises for Osteoporosis management - PT</td>
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<td>• Provide Osteoporosis Pt/ Family Education (See Appendix F: Ontario Osteoporosis Strategy for Inpatient Rehabilitation)</td>
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<td>• Review/implement falls prevention strategies</td>
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<td>10. Discharge Planning</td>
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<tr>
<td>• Identify goals</td>
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<td>• For patients who have been identified as at risk for a delayed discharge, schedule the first patient/family team meeting by the second week of admission (in rehab) and within 4-6 weeks of admission for patients in LTLD rehab. (See GTA Rehab Network Discharge Planning Guidelines for Inpatient Rehabilitation <a href="http://www.gtarehabnetwork.ca">http://www.gtarehabnetwork.ca</a>.)</td>
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<td>• Review discharge plans</td>
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**Inpatient Rehab**  
**Hip Fracture Clinical Pathway**  
*October 2011*

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### Activities/Interventions

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<tr>
<td>• Determine discharge criteria</td>
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<td>- Patient is hemodynamically stable and afebrile</td>
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<td>- Patient wound is clean and dry</td>
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<td>- Patient lab work is within normal limits</td>
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<td>- PT/OT/Nursing/SW determine patient is safe to D/C to community setting</td>
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<td>• Consider availability of Family Physician and referral to FP if needed</td>
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**ACTIVITIES IN PREPARATION OF PATIENT DISCHARGE TO HOME/RETIREMENT HOME**

1. **Date achieved status – Medical**
   - Pt temp < 37
   - Off O2
   - VSS
   - Incision intact
   - HB > 80 / asymptomatic.
   - Voiding well
   - Tolerating full diet and diet education provided
   - Demonstrates exercises and precautions
   - Demonstrate self injection if appropriate
   - Self-managing pain
   - Self-managing medications
   - Self-managing all other care needs (e.g. colostomy care, wound care, diabetes management, toileting/continence routine and products)

2. **Date functional goals achieved**
   - Full weight bearing
   - Ambulation distance
   - Walking independent/aid
   - Bed (lying ↔ sit): independent
   - Sit ↔ Standing: independent
   - Stairs independent
   - Dressing independent/aid
   - Toileting requires commode  Y  N
   - Bathing independent_____Assist_____

3. **Activities for discharge**
   - Discharge care conference; Patient/family informed of, understand & agree to Discharge plan

**Medical:**
   - Arrange anticoagulant supervision and INR testing if patient discharged on warfarin. Communicate in-hospital anticoagulant record including doses, INR values and next INR date to supervising MD.
   - Pharmacy notified if patient on Coumadin at Discharge
   - Pt’s meds returned, med reconciliation complete

**Follow-up Appointments:**
   - Surgeon appointment booked
   - Outpatient appointment arranged (if required)
### Inpatient Rehab Hip Fracture Clinical Pathway*

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<tr>
<td><strong>Equipment and Community Services:</strong></td>
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<td>Equipment arranged (mobility/home/assistive devices)</td>
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<td>CCAC referral in place including completion of home safety assessment referral if required</td>
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<td><strong>Patient Information:</strong></td>
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<td>Fractured Hip Home Exercise Program given</td>
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<td>Discharge Package provided (as per protocol)</td>
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<td>Transportation confirmed</td>
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<td>Osteoporosis Strategy</td>
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<td>Osteoporosis Checklist completed</td>
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<tr>
<td>Osteoporosis Form letter to Family Dr. re Osteoporosis follow-up⁴</td>
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<td>Osteoporosis Form letter with referral to CCAC</td>
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<td>Osteoporosis Exercise program given to patient</td>
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<td>Inform BMD test date</td>
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⁴ See Osteoporosis Canada website for Family Physician Information Form, [www.osteoporosis.ca/multimedia/tools.html](http://www.osteoporosis.ca/multimedia/tools.html)
APPENDIX A:
Confusion Assessment Method
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 B: MiniCog Test
Instructions for the Mini-Cog Test

Administration
the Mini-Cog test is a 3-minute instrument to screen for cognitive impairment in older adults in the primary care setting. The Mini-Cog uses a three-item recall test for memory and a simply scored clock-drawing test (CDT). The latter serves as an “informative distractor,” helping to clarify scores when the memory recall score is intermediate. The Mini-Cog was as effective as or better than established screening tests in both an epidemiologic survey in a mainstream sample and a multi-ethnic, multilingual population comprising many individuals of low socioeconomic status and education level. In comparative tests, the Mini-Cog was at least twice as fast as the Mini-Mental State Examination. The Mini-Cog is less affected by subject ethnicity, language, and education, and can detect a variety of different dementias. Moreover, the Mini-Cog detects many people with mild cognitive impairment (cognitive impairment too mild to meet diagnostic criteria for dementia).

Scoring (see figure 1)

1 point for each recalled word

Score clock drawing as Normal (the patient places the correct time and the clock appears grossly normal) or Abnormal

Score

0 Positive for cognitive impairment
1-2 Abnormal CDT then positive for cognitive impairment
1-2 Normal CDT then negative for cognitive impairment
3 Negative screen for dementia (no need to score CDT)
Reference
Instructions
Inside the circle draw the hours of a clock as if a child would draw them
Place the hands of the clock to represent the time “forty five minutes past ten o’clock”

Instrucciones
Dentro del circulo dibuje las horas del reloj como si lo haría un niño.
Ponga las manos del reloj para representar el tiempo “cuarenta y cinco minutos después de las diez”
1. Instruct the patient to listen carefully and repeat the following

APPLE WATCH PENNY
MANZANA RELOJ PESETA

2. Administer the Clock Drawing Test

3. Ask the patient to repeat the three words given previously

_________  _________  __________

Scoring

Number of correct items recalled _______ [if 3 then negative screen. STOP]

If answer is 1-2
Is CDT Abnormal? No Yes

If No, then negative screen
If Yes, then screen positive for cognitive impairment
APPENDIX C:
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></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>
<tr>
<td></td>
<td>30</td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

(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>
</tr>
<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>
</tbody>
</table>

**Sources:**
APPENDIX D:
Understanding Acute Delirium
(Sunnybrook Health Sciences Centre)
“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.

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.

References:
Delirium Screeing & Care Protocols, Sunnybrook Intranet

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

Sunnybrook Health Sciences Centre
2075 Bayview Avenue
Toronto, ON M4N 3M5

t: 416.480.6100
www.sunnybrook.ca

Fully affiliated with the University of Toronto
Causes of delirium may include:

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

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.

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.

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.

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 E: Osteoporosis Risk Factors – 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada

<table>
<thead>
<tr>
<th>Indications for measuring bone mineral density</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada</td>
</tr>
<tr>
<td>CMAJ • NOVEMBER 23, 2010 • 182(17)</td>
</tr>
</tbody>
</table>

<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>• Frailty 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 Frailty 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 fracture</td>
</tr>
<tr>
<td>o Current smoking</td>
<td></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 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)</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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Inpatient Rehab Hip Fracture Clinical Pathway

Legend:

☐ Initial beside each tick box

M In-box = met/completed

☑ In-box = unmet / not completed

☒ In-box = not applicable

APPENDIX F:
Ontario Osteoporosis Strategy for Inpatient Rehabilitation
ONTARIO OSTEOPOROSIS STRATEGY FOR INPATIENT REHABILITATION

Exercises to help you to improve your balance, strength and posture to reduce the risk of future fractures

<table>
<thead>
<tr>
<th>Prescribed for:</th>
<th>Prescribed by:</th>
<th>Date:</th>
</tr>
</thead>
</table>

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

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 side 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.