Quality Standards

Hip Fracture

Care for People With Fragility Fractures

Health Quality Ontario

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Summary

This quality standard addresses care for adults aged 50 years and older undergoing surgery for fragility hip fractures. Fragility fractures are fractures caused by low-energy trauma, such as falls from a standing height.

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About Quality Standards

Health Quality Ontario, in collaboration with clinical experts, patients, residents, and caregivers across the province, is developing quality standards for Ontario.

Quality standards are concise sets of statements that will:

- Help patients, residents, families, and caregivers know what to ask for in their care
- Help health care professionals know what care they should be offering, based on evidence and expert consensus
- Help health care organizations measure, assess, and improve their performance in caring for patients

The statements in this quality standard do not override the responsibility of health care professionals to make decisions with patients, after considering each patient's unique circumstances.

How to Use Quality Standards

Quality standards inform clinicians and organizations about what high-quality health care looks like. They are based on the best available evidence.

They also include indicators to help clinicians and organizations assess the quality of care they are delivering, and to identify gaps and areas for improvement. These indicators measure process, structure, and outcomes.

In addition, tools and resources to support clinicians and organizations in their quality improvement efforts accompany each quality standard.

For more information on how to use quality standards, contact:
qualitystandards@hqontario.ca.

About This Quality Standard

Scope of This Quality Standard

This quality standard includes 15 quality statements addressing areas identified by Health Quality Ontario's Hip Fracture Quality Standard Advisory Committee as having high potential for improving the quality of hip fracture care in Ontario.

This quality standard focuses on adults aged 50 years and older undergoing surgery for fragility hip fractures and the care delivered from the point at which they present to the emergency department until three months following surgery. Fragility hip fractures are fractures of the femur caused by low-energy trauma, such as falls from a standing height. This quality standard does not apply to people with hip fractures resulting from high-energy trauma or people with fragility fractures who are not candidates for surgery.

Why This Quality Standard Is Needed

People who experience fragility hip fractures are typically elderly and living with osteoporosis and a variety of other comorbidities. For these frail individuals, a hip fracture can be a catastrophic event that precipitates a steep decline in health and independence.

About 13,000 people living in Ontario experience a hip fracture every year. Roughly 20% of these people will die within a year of their fracture, another 20% who had been independent before their fracture will be admitted to long-term care, and less than half of those who had previously been living independently will be able to walk without aids following the fracture.[1] The health care expenditures associated with hip fracture are substantial, accounting for nearly $500 million of health care spending per year in Ontario.[1]

There is considerable variation in the quality of hip fracture care in Ontario. In the 2014/15 fiscal year, about 20% of patients presenting with hip fracture in Ontario waited longer than the recommended 48 hours for surgery (this ranged from 2% to 45% across hospitals in Ontario). Patient outcomes also varied widely, with risk-adjusted 30-day mortality rates in 2014/15 ranging from 3% to 17% across hospitals (Discharge Abstract Database and National Ambulatory Care Reporting System, April 2016).

Relationship With the *Hip Fracture Quality-Based Procedures Clinical Handbook*

This quality standard is informed by Health Quality Ontario and the Ministry of Health and Long-Term Care's 2013 *Quality-Based Procedures Clinical Handbook for Hip Fracture*, in addition to other guidance sources. This quality standard does not attempt to provide guidance for all the topic areas addressed in the 2013 *Clinical Handbook*; the quality statements in this standard focus on areas that have been prioritized for having the greatest opportunity for improvement in how hip fracture care in Ontario is currently provided.

It should also be noted that this quality standard does not contain guidance related to the hospital funding component of the 2013 *Clinical Handbook*; the scope and statements of this quality standard focus on clinical practice.

Principles Underpinning This Quality Standard

This quality standard is underpinned by the principles of respect and equity.

People with hip fractures receive services that are respectful of their rights and dignity and that promote self-determination.

People with hip fractures are provided services that are respectful of their gender, sexual orientation, socioeconomic status, housing, age, background (including self-identified cultural, ethnic, and religious background), and disability.

A high-quality health system is one that provides good access, experience, and outcomes for all Ontarians no matter where they live, what they have, or who they are.

How We Will Measure Our Success

A limited number of overarching objectives are set for this quality standard; these objectives have been mapped to performance indicators to measure the success of this quality standard as a whole:

- Percentage of patients who undergo surgery for hip fracture who die within 30 days or within 90 days of surgery
- Percentage of patients who undergo surgery for hip fracture who achieve weight-bearing as tolerated within 24 hours of surgery
- Percentage of patients who undergo surgery for hip fracture who return to pre-fracture functional status within 90 days or by 6 months following surgery
- Percentage of patients who undergo surgery for hip fracture who are readmitted to hospital within 30 days or within 90 days of surgery
- Percentage of previously community-dwelling patients who undergo surgery for hip fracture who return to the community

In addition, each quality statement within this quality standard is accompanied by one or more indicators to measure the successful implementation of the statement.

Quality Statements in Brief

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Patients with hip fracture are discharged from inpatient care with a scheduled follow-up appointment with a primary care provider within 2 weeks of returning home and a scheduled follow-up appointment with the orthopaedic service within 12 weeks of their surgery.

1

Emergency Department Management

Patients with suspected hip fracture are diagnosed within 1 hour of arriving at hospital. Preparation for surgery is initiated, and patients are admitted and transferred to a bed in an inpatient ward within 8 hours of arriving at hospital.

Background

To reduce delays to surgery, patients with suspected hip fracture should be rapidly assessed, diagnosed, and prepared for surgery upon arrival at hospital.[1] Once a hip fracture is diagnosed, patients should receive a preoperative assessment, including admission and transfer to an inpatient bed within 8 hours. If a patient is to be transferred to another hospital for surgery, preparations for their transfer should begin after diagnosis.

Source: Advisory committee consensus

What This Quality Statement Means

For Patients

You should be seen by a doctor within 1 hour of arriving at the hospital so you can be diagnosed and receive treatment as quickly as possible. You should be transferred to an inpatient bed within 8 hours of arriving at the hospital.

For Clinicians

If you suspect that a person has a hip fracture, ensure that they are diagnosed, that preparation for surgery is initiated, and that the patient is transferred to an inpatient bed within 8 hours.

For Health Services

Ensure that systems, processes, and resources are in place to assist clinicians with the assessment of people with suspected hip fracture. This includes ensuring access to validated assessment tools, laboratory testing, necessary imaging, and areas for physical examination; providing the time required for a full assessment; and ensuring availability of trained professionals.

Quality Indicators

Process Indicators

Percentage of patients with a suspected hip fracture who have imaging (typically x-ray) and who are seen by a physician within 1 hour of arrival at hospital

- Denominator: total number of adults presenting to hospital with suspected hip fracture
- Numerator: number of people in the denominator who have imaging (x-ray, CT scan, or MRI) and are seen by a physician within 1 hour of arrival at hospital
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Hip fracture diagnosis

Hip fracture diagnosis requires a clinical assessment by a physician, imaging (typically x-ray; rarely computerized tomography [CT] or magnetic resonance imaging [MRI]), and subsequent imaging interpretation to confirm the diagnosis.

Initial preparation for surgery

Further assessments may be needed once the patient is transferred out of the emergency department. Initial preparation for surgery involves the following, which should occur within 8 hours of arrival at hospital:

- Baseline information and history, including pre-fracture functional status, cognitive status, and delirium screen
- Bloodwork
- Consultations as needed
- Electrocardiography (ECG)
- Medication adjustment or discontinuation as needed
- Preparation for transfer if patient is to be transferred to another hospital for surgery

PROCESS INDICATORS CONTINUED

Percentage of patients with a confirmed hip fracture who are transferred to an inpatient bed within 8 hours of arrival at hospital

- Denominator: total number of adults presenting to hospital with a primary diagnosis of fragility hip fracture
- Numerator: number of people in the denominator who are transferred to an inpatient bed within 8 hours of arrival at hospital
- Data source: local data collection

Percentage of hip fracture patients who receive initial preparation for surgery within 8 hours of arrival at hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture
- Numerator: number of people in the denominator who receive bloodwork, consultations (e.g., orthopaedic surgery, anaesthesia), ECG, and medication adjustment or discontinuation as needed within 8 hours of arrival at hospital
- Data source: local data collection

Structural Indicator

Percentage of surgical hospitals that have a protocol, including a standardized order set, to prioritize the admission process for hip fracture patients such that they are admitted and transferred to an inpatient bed within 8 hours

- Data source: Regional and/or provincial data collection method would need to be developed

2

Surgery Within 48 Hours

Patients with hip fracture receive surgery as soon as possible, within 48 hours of their first arrival at any hospital (including any time spent in a nonsurgical hospital).

Background

Hip fracture patients requiring surgery should receive surgical intervention as soon as possible, within a maximum of 48 hours of their first presentation to a hospital, regardless of whether they are subsequently transferred to another hospital for surgery.[1] Increased time to surgery causes prolongation of pain, extended inpatient stay, and is associated with increased morbidity and mortality.[2,3]

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

2

Surgery Within 48 Hours

What This Quality Statement Means

For Patients

You should have surgery on your hip fracture within 48 hours of arriving at the hospital, even if you need to be transferred to a different hospital to have your surgery.

For Clinicians

If you know that your patient has a hip fracture and requires surgery, ensure that they are operated on as soon as possible, and no more than 48 hours after arrival at any hospital.

For Health Services

Ensure that systems, processes, and resources are in place to ensure rapid surgical intervention for people with hip fractures. This includes having protocols, hip fracture pathways, medical directives, and standardized order sets in place to ensure that the 48-hour target is met.

Quality Indicators

Process Indicators

Percentage of patients who underwent hip fracture surgery who had surgery within 48 hours of first arrival at any hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who underwent surgery within 48 hours of first arrival at any hospital
- Data source: Discharge Abstract Database, National Ambulatory Care Reporting System

Median and 90th percentile number of hours patients wait to receive hip fracture surgery following first arrival at any hospital

- Data source: Discharge Abstract Database, National Ambulatory Care Reporting System

3

Multimodal Analgesia

Patients with suspected hip fracture have their pain assessed within 30 minutes of arriving at hospital and managed using a multimodal approach, including consideration of non-opioid systemic analgesics and peripheral nerve blocks.

Background

For patients who have experienced a hip fracture, pain is one of the main physiological and psychological stresses.[2] A patient's pre–hip fracture pain medications should be reviewed (as applicable) to assess the need for continuation or substitution while in hospital.[1]

Opioids are effective at relieving acute pain; however, they are associated with side effects including confusion, vomiting, constipation, sedation, and respiratory depression.[2] It is important to consider the use of multimodal analgesia to reduce dose-dependent opioid-related side effects.[4] Nonnarcotic systemic analgesics, such as acetaminophen and nonsteroidal anti-inflammatory drugs (if not contraindicated), and peripheral nerve blocks, such as a fascia iliaca or femoral nerve block, can improve pain control, reduce postoperative delirium, and reduce overall opioid requirements.[1-4] Peripheral nerve blockade should be performed by medical practitioners with appropriate training, with consideration of the benefits and risks of the procedure, and with an explanation of the procedure to the patient.

BACKGROUND CONTINUED

Choice of Anaesthesia

Patients undergoing hip fracture surgery receive either neuraxial or general anaesthesia. As current evidence suggests that the two modalities are equivalent for most outcomes, the choice of anaesthesia should be made based on patient characteristics and, where possible, in consultation with the patient and family or caregivers. Neuraxial anaesthesia may be contraindicated for patients on anticoagulation medication; surgery should not be delayed if general anaesthesia is an acceptable option.

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

3

Multimodal Analgesia

What This Quality Statement Means

For Patients

Your pain should be assessed and treated promptly upon arriving at the emergency department. Various pain relief treatments should be considered, including non-opioid treatments.

For Clinicians

If you suspect that a person has a hip fracture, ensure that their pain is immediately assessed and managed. If the patient needs opioids, consider augmentation with non-opioid systemic analgesics and/or a peripheral nerve block to reduce the opioid dosage needed to manage the patient's pain.

For Health Services

Ensure that systems, processes, and resources are in place to assist clinicians with the rapid assessment of pain in the emergency department. Ensure that appropriate training and resources are available for clinicians such that all can become competent at inserting and initiating peripheral nerve blocks.

Quality Indicators

Process Indicators

Percentage of patients with suspected hip fracture whose pain is assessed within 30 minutes of arrival at hospital

- Denominator: total number of patients presenting to hospital with suspected hip fracture
- Numerator: number of people in the denominator whose pain is assessed within 30 minutes of arrival at hospital
- Data source: local data collection

Percentage of hip fracture patients with an order for opioids who do not also receive non-opioid systemic analgesia or a nerve block

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture with an order for opioids
- Numerator: number of people in the denominator who do not receive non-opioid systemic analgesia or a nerve block
- Data source: local data collection

4

Surgery for Stable Intertrochanteric Fractures

Patients diagnosed with a stable intertrochanteric fracture are treated surgically with sliding hip screws.

Background

Stable fractures of the upper femur can be repaired with either a sliding hip screw or intramedullary nail.[3] The two implants are similarly effective, but sliding hip screws are less expensive than intramedullary nails[1] and are associated with reduced blood loss during surgery.[3]

Sources: Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

Your surgeon should explain which type of surgery is most appropriate for your type of hip fracture.

For Clinicians

If your patient has a stable intertrochanteric fracture, use a sliding hip screw whenever possible.

For Health Services

Ensure that surgeons have access to all resources necessary to perform appropriately selected procedures.

Quality Indicators

Process Indicator

Percentage of patients diagnosed with a stable intertrochanteric hip fracture who receive sliding hip screws during surgical intervention

- Denominator: total number of adults diagnosed with a stable intertrochanteric hip fracture who undergo surgery
- Numerator: number of people in the denominator who receive sliding hip screws
- Data sources: Discharge Abstract Database, local data collection

5

Surgery for Subtrochanteric or Unstable Intertrochanteric Fractures

Patients diagnosed with a subtrochanteric fracture or unstable intertrochanteric fracture are treated surgically with intramedullary nails.

Background

Lower complication rates are associated with the use of intramedullary nails versus sliding hip screws in the treatment of subtrochanteric and unstable intertrochanteric fractures.[3] When used to treat subtrochanteric fractures, intramedullary nails have been shown to result in fewer cases of fracture fixation failure than sliding hip screws.[2] Further, the use of intramedullary nails in surgery for unstable intertrochanteric fractures has been shown to result in improved mobility and decreased limb shortening when compared to sliding hip screws.[3]

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

Your surgeon should explain which type of surgery is most appropriate for your type of hip fracture.

For Clinicians

If your patient has a subtrochanteric fracture, use intramedullary nails. If your patient was ambulatory before their hip fracture and has an unstable intertrochanteric fracture, use intramedullary nails. If your patient was not ambulatory before their hip fracture and has an unstable intertrochanteric fracture, use a sliding hip screw.

For Health Services

Ensure that surgeons have access to all resources necessary to perform appropriately selected procedures.

Quality Indicators

Process Indicator

Percentage of patients diagnosed with a subtrochanteric or unstable intertrochanteric fracture who are treated with intramedullary nails

- Denominator: total number of adults diagnosed with either a subtrochanteric fracture or an unstable intertrochanteric fracture who undergo surgery
- Numerator: number of people in the denominator who receive intramedullary nails
- Data source: Discharge Abstract Database, local data collection

6

Surgery for Displaced Intracapsular Fractures

Patients diagnosed with a displaced intracapsular hip fracture are treated surgically with arthroplasty.

Background

Most patients with a displaced intracapsular fracture should receive surgical arthroplasty because it is associated with lower reoperation rates, fewer patient reports of pain, and better functional and quality-of-life scores compared with internal fixation.[2] In rare cases in which the clinician feels that the patient may benefit from preservation of the hip joint (e.g., patients who are 60 years of age or younger and very active), reduction and fixation may be considered. Younger patients diagnosed with displaced femoral neck fractures who undergo internal fixation may also benefit from expedited surgery (i.e., within 6 hours) due to the potential risk of avascular necrosis.

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

Your surgeon should explain which type of surgery is most appropriate for your type of hip fracture.

For Clinicians

If your patient has a displaced intracapsular fracture, they should almost always receive arthroplasty (total arthroplasty or hemiarthroplasty). In rare cases of younger and very active patients, you may consider reduction and fixation to preserve the hip joint.

For Health Services

Ensure that surgeons have access to all resources necessary to perform appropriately selected procedures.

Quality Indicators

Process Indicator

Percentage of patients diagnosed with a displaced intracapsular fracture who undergo arthroplasty (total arthroplasty or hemiarthroplasty)

- Denominator: total number of adults diagnosed with a displaced intracapsular fracture who undergo surgery
- Numerator: number of people in the denominator who undergo arthroplasty (total arthroplasty or hemiarthroplasty)
- Data source: Discharge Abstract Database, local data collection

7

Postoperative Blood Transfusions

Patients with hip fracture do not receive blood transfusions if they are asymptomatic and have a postoperative hemoglobin level equal to or higher than 80 g/L.

Background

A restrictive blood transfusion strategy for hip fracture patients, in which medically stable patients with a hemoglobin level equal to or higher than 80 g/L do not receive transfusions, has been found to be safe compared to less restrictive transfusion thresholds.[3]

Source: American Academy of Orthopaedic Surgeons, 2014[3]

7

Postoperative Blood Transfusions

What This Quality Statement Means

For Patients

You should receive a blood transfusion after hip fracture surgery only if your hemoglobin is very low (below 80 g/L).

For Clinicians

Do not routinely perform postoperative blood transfusions for hip fracture patients if they have a hemoglobin level equal to or higher than 80 g/L.

For Health Services

Ensure that protocols, pathways, medical directives, and standardized order sets include reference to restrictive blood transfusion recommendations for postoperative hip fracture patients.

Quality Indicators

Process Indicator

Percentage of patients who undergo hip fracture surgery, have a postoperative hemoglobin level equal to or higher than 80 g/L, and who receive a blood transfusion

- Denominator: total number of adults with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture and have a postoperative hemoglobin level equal to or higher than 80 g/L
- Numerator: number of patients in the denominator who receive a blood transfusion
- Data source: local data collection

8

Weight-Bearing as Tolerated

Patients with hip fracture are mobilized to weight-bearing as tolerated within 24 hours following surgery.

Background

Surgery for hip fracture should be planned to allow patients to achieve weight-bearing as tolerated, without restriction, within 24 hours following surgery. Full weight-bearing enables early mobilization, supports patients' return to their pre-fracture level of mobility, and reduces the risk of adverse events associated with restricted weight-bearing and prolonged immobility. All modern hip fracture implants are designed to facilitate full weight-bearing.

In rare situations where younger patients experience displaced femoral neck fractures and undergo reduction and fixation, a period of 'toe-touch' weight-bearing may be appropriate.

In any situation where a hip fracture patient is discharged from hospital without being capable of full weight-bearing, detailed orders, including the rationale for and duration of the patient's weight-bearing status, should be clearly documented and communicated to the patient's post–acute care providers.

Sources: Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

You should be able to put as much weight as is comfortable on the injured leg within 24 hours of your surgery.

For Clinicians

Plan surgery with the aim of enabling patients to achieve weight-bearing as tolerated within 24 hours of their operation.

For Health Services

Ensure protocols, pathways, medical directives, and standardized order sets are in place to facilitate patients achieving weight-bearing as tolerated within 24 hours following surgery.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Weight-bearing as tolerated

Weight-bearing as tolerated involves putting as much weight as is comfortable for the patient on the leg that is on the same side as the injured hip.

Quality Indicators

Outcome Indicator

Percentage of hip fracture patients who achieve weight-bearing as tolerated within 24 hours following surgery

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who achieve weight-bearing as tolerated within 24 hours following surgery
- Data source: local data collection

9

Daily Mobilization

After surgery, patients with hip fracture are mobilized on a daily basis to increase their functional tolerance.

Background

The goal of postoperative mobilization is to help patients return to their pre-fracture level of functioning as soon as possible. The benefits of early mobilization include decreased length of hospital stay and fewer complications associated with prolonged time spent in bed.[2]

Patients should receive assistance with mobilization at least once each day—more often whenever possible—from members of the health care staff, including nurses.[1] Where safe and appropriate, family members or caregivers should also be encouraged to assist with daily mobilization.

Sources: Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

You should receive help to stand and walk the day after your surgery and every day after that while you're in the hospital.

For Clinicians

Following surgery, ensure patients with hip fracture are mobilized at least once daily by a member of the health care staff. Where possible, family members or caregivers should be encouraged to assist with mobilization, once your health care team deems it safe and appropriate.

For Health Services

Ensure that the appropriate protocols and human resources are in place to help patients with hip fracture mobilize daily after surgery to progressively increase their functional tolerance.

Quality Indicators

Process Indicator

Percentage of hip fracture patients who are mobilized at least once daily postoperatively while in hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who are mobilized daily postoperatively while in hospital
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Mobilization

Mobilization involves progression through a continuum of functional activities with the goal of returning the patient to their pre-fracture level of mobility:

- Sit at bedside
- Transfer to chair with assistance
- Transfer to chair independently
- Walk with assistance

10

Screening for and Managing Delirium

Patients with hip fracture are screened for delirium using a validated tool as part of their initial assessment and then at least once every 12 hours while in hospital, after transitions between settings, and after any change in medical status. Patients receive interventions to prevent delirium and to promote recovery if delirium is present.

Background

Patients who have experienced a hip fracture are at risk for developing delirium.[5] Hip fracture patients with delirium are more likely to have a longer hospital stay, fall, develop pressure sores, and die than those without delirium.[5] If delirium develops, it is important to identify and manage the underlying cause or combination of causes and to attempt to treat the delirium.[6] Interventions to prevent delirium and to promote recovery from delirium include orienting the patient to person, place, and time (involving family, caregivers, and friends when possible); creating an environment that provides context (e.g., with a window or clock) and contains familiar items, such as pictures or personal belongings; ensuring patients are using their glasses or hearing aids as appropriate; speaking to patients in a calm, reassuring voice; and considering alternatives to or the more judicious use of drugs that may either cause or exacerbate delirium.[5,6]

Sources: Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

You should be assessed for delirium (confused thinking and reduced awareness) while you're in the emergency department and twice a day while you're in the hospital, after any move to a new setting, and if there is a change in your medical status.

For Clinicians

Screen your hip fracture patient for delirium during their initial assessment and prior to the administration of pain medication and surgery. Perform subsequent delirium screenings at least once every 12 hours while the patient is in hospital, after transitions between settings, and upon any change in medical status. It is important to attempt to prevent delirium by orienting your patient to person, place, and time (involving family, caregivers, and friends when possible); creating an environment that provides context (e.g., with a window or clock) and contains familiar items, such as pictures or personal belongings; ensuring that patients are using their glasses or hearing aids as appropriate; speaking to patients in a calm, reassuring voice; and considering alternatives to or the more judicious use of drugs associated with delirium.

For Health Services

Ensure that your facility has validated delirium assessment tools and a policy or protocol in place for preventing and managing delirium.

Quality Indicators

Process Indicators

Percentage of hip fracture patients who are assessed for delirium with a validated tool within 8 hours of arrival at hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture
- Numerator: number of people in the denominator who are assessed for delirium with a validated tool within 8 hours of first arrival at any hospital
- Data source: local data collection

Percentage of hip fracture patients who are assessed for delirium with a validated tool after a change in medical status

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who experience a change in medical status
- Numerator: number of people in the denominator who are assessed for delirium with a validated tool every 12 hours
- Data source: local data collection

Percentage of hip fracture patients who are assessed for delirium with a validated tool after transitioning to a new medical setting

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who are transitioned to a new setting
- Numerator: number of people in the denominator who are assessed for delirium with a validated tool every 12 hours
- Data source: local data collection

PROCESS INDICATORS CONTINUED

Percentage of hip fracture patients who are assessed for delirium with a validated tool every 12 hours while in hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture
- Numerator: number of people in the denominator who are assessed for delirium with a validated tool every 12 hours while in hospital
- Data source: local data collection

Structural Indicator

Percentage of hospitals that have a policy or protocol in place to prevent and manage delirium

- Data source: Regional and/or provincial data collection method would need to be developed

11

Postoperative Management

Patients with hip fracture receive postoperative care from an interdisciplinary team in accordance with principles of geriatric care.

Background

Care for hip fracture patients should be guided by an orthopaedic surgeon in collaboration with a clinician familiar with geriatric principles.[7] For example, an orthopaedic surgeon may partner with a geriatrician, clinical nurse specialist, nurse practitioner, hospitalist, or internal medicine practitioner to coordinate care for a hip fracture patient. This care partnership ensures that geriatric considerations regarding surgical and medical decisions are addressed from the time of admission throughout the continuum of care.[2]

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

You should receive care from a team of health care professionals who understand the health needs of older adults.

For Clinicians

Following hip fracture surgery, ensure your patient continues to receive care from a surgical–medical partnership that takes into consideration the unique needs of geriatric patients. While the patient is still in hospital recovering from surgery, encourage appropriate nutritional intake and hydration, closely monitor and address the patient's risk of developing pressure injuries, and ensure proper venous thromboembolism prophylaxis.

For Health Services

Ensure that appropriate human resources are in place such that a medical–surgical partnership is possible for the care of hip fracture patients. Additional resources may include protocols, hip fracture pathways, medical directives, and standardized order sets to facilitate the implementation of principles of geriatric care.

Quality Indicators

Process Indicators

Percentage of hip fracture patients who are managed by both an orthopaedic surgeon and a clinician with geriatric expertise

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who are seen by an orthopaedic surgeon and a clinician with geriatric expertise
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Postoperative care from an interdisciplinary team

Management for hip fracture patients should include, at a minimum, the following clinical interventions and senior-friendly considerations:

- Nutritional intake should be assessed and protein and high-energy supplements provided if required[1,3]
- Risk assessment for pressure injuries should be performed using the Braden Scale or another validated instrument.[8] Precautions should be taken, including proper turning and repositioning, to prevent the development of pressure injuries[1]
- If postoperative catheterization is necessary, an intermittent catheter should be used rather than an indwelling catheter[1]
- Appropriate hydration should be provided to help prevent delirium while carefully balancing the risk of fluid overload; for example, with intravascular or oral fluids[1]
- Venous thromboembolisms should be prevented using medical rather than mechanical strategies (unless medications are contraindicated)[1,3]
- A fall risk assessment should be performed
- A comprehensive medication review and reconciliation should be performed

PROCESS INDICATORS CONTINUED

Percentage of hip fracture patients who receive venous thromboembolism prophylaxis while in hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who receive venous thromboembolism prophylaxis while in hospital
- Data source: local data collection

Percentage of hip fracture patients who receive an indwelling catheter postoperatively

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who receive an indwelling catheter postoperatively
- Data source: local data collection

Structural Indicator

Percentage of hospitals with access to a clinician with geriatric expertise

- Data source: Regional and/or provincial data collection method would need to be developed

12

Patient, Family, and Caregiver Information

Patients with hip fracture and/or their family and caregivers are given information on patient care that is tailored to meet the patient's needs and delivered at appropriate times in the care continuum.

Background

Patients value receiving explanations about their condition and information about their anticipated path to recovery.[2] Early discussion of prognosis, expectations, rehabilitation, and the care pathway may avoid discharge delays, reduce length of hospital stay, and prevent unnecessary readmission to hospital.[2] Patients (and, as appropriate, their family or caregivers) should be provided with timely information throughout the care continuum verbally and in a printed or multimedia format.

Sources: Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

Throughout your care journey, you and your caregivers should be given information about your care. This information should be offered to you in a variety of ways, including verbally, written down, or in a video.

For Clinicians

Provide your patients with information that is tailored to meet their learning needs in a format and at times that are most appropriate for them.

For Health Services

Ensure that appropriate educational resources are available for clinicians to use with their hip fracture patients. These resources should be available in written and multimedia formats.

Quality Indicators

Structural Indicator

Percentage of hospitals that have educational resources available for hip fracture patients related to their care (see list at right)

- Data source: Regional and/or provincial data collection method would need to be developed

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Information on patient care

At a minimum, information on patient care for hip fracture patients and their family and/or caregivers should address the following:

- Diagnosis
- Elements of the care plan
- Types of anaesthesia
- Medications
- Health care professionals involved
- Types of surgery
- Possible complications of surgery
- Postoperative care
- Delirium prevention and management
- Discharge plan
- Rehabilitation programs
- Potential long-term outcomes
- Assistive devices that may be needed following surgery
- Nutrition
- Osteoporosis management
- Effect of surgery on activities and travel
- Fall prevention

13

Rehabilitation

Patients with hip fracture participate in an interdisciplinary rehabilitation program (in an inpatient setting, a community setting, or a combination of both) with the goal of returning to their pre-fracture functional status.

Background

On discharge from the acute care hospital, all hip fracture patients—including patients with cognitive impairment and those residing in long-term care homes—should have the opportunity to participate in an active interdisciplinary rehabilitation program.[1]

Rehabilitation programs have been shown to improve patient outcomes, including but not limited to functional status, leg strength, health status, balance, mobility, instrumental activities of daily living, and social functioning.[3]

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | National Institute for Health and Care Excellence, 2011[2]

What This Quality Statement Means

For Patients

When you leave the hospital, you should be offered a rehabilitation program to help get you back to the activities you were able to do before your fracture.

For Clinicians

Provide a rehabilitation program to your hip fracture patients that includes therapies to improve independence in self-care, balance and gait assessment and training, nutritional supplementation, education on safety and fall prevention, a restorative and/or maintenance exercise program, environmental modifications, osteoporosis management and education, and medication management.

For Health Services

Ensure that systems, processes, and resources are in place to allow all hip fracture patients, regardless of cognitive impairment or setting, to participate in a rehabilitation program following surgery.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Rehabilitation program

An effective hip fracture rehabilitation program includes the following[1]:

- Therapies to improve independence in self-care
- Balance, strengthening, and gait assessment and training
- Nutritional supplementation
- Education on safety and fall prevention
- Environmental modifications
- Osteoporosis management and education
- Medication management
- Pain management education
- Positioning education for comfort and pressure relief
- Transfer training
- Stair training
- An ongoing exercise program following completion of formal rehabilitation

Quality Indicators

Process Indicators

Percentage of hip fracture patients who participate in a postoperative interdisciplinary rehabilitation program

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who participate in a postoperative interdisciplinary rehabilitation program
- Data source: Continuing Care Reporting System, Discharge Abstract Database, Home Care Database, National Rehabilitation Reporting System, local data collection

Median number of days after surgery that hip fracture patients begin a rehabilitation program

- Data source: Continuing Care Reporting System, Discharge Abstract Database, Home Care Database, National Rehabilitation Reporting System, local data collection

14

Osteoporosis Management

While in hospital, patients with hip fracture undergo an osteoporosis assessment from a clinician with osteoporosis expertise and, when appropriate, are offered pharmacologic therapy for osteoporosis.

Background

As people age, the incidence of fragility fractures increases, owing to the higher incidence of osteoporosis in older populations.[9] Treatment for osteoporosis leads to a reduction in re-fractures and mortality and a decreased rate of new fractures.[3] All patients with fragility hip fractures are at high risk for future fractures, and pharmacologic intervention should be offered to all patients while in hospital, subject to contraindications.[10,11] Bone mineral density testing to monitor treatment efficacy should be considered in those who accept osteoporosis treatment.[11]

Sources: American Academy of Orthopaedic Surgeons, 2014[3] | Health Quality Ontario, 2013[1] | Osteoporosis Canada, 20101[1]

What This Quality Statement Means

For Patients

While you are in the hospital, a health care professional should assess you for osteoporosis (which causes bones to become brittle) and offer you the appropriate medication to help your bones be as healthy as possible.

For Clinicians

While your patient is still in hospital recovering from surgery, perform an osteoporosis assessment, and offer an osteoporosis medication (e.g., a bisphosphonate or bisphosphonate derivative, monoclonal antibody, or parathyroid hormone analog) unless they are already on osteoporosis medication or such medications are contraindicated.

For Health Services

Ensure that systems, processes, and resources are in place to allow all postoperative hip fracture patients to access a clinician with osteoporosis expertise who is qualified to perform osteoporosis assessments and prescribe osteoporosis medications.

Quality Indicators

Process Indicators

Percentage of hip fracture patients who receive an osteoporosis assessment from a clinician with osteoporosis expertise

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who receive an osteoporosis assessment from a clinician with osteoporosis expertise
- Data source: local data collection

Note: Patients with a fragility hip fracture who are already on osteoporosis medications or for whom osteoporosis medications are contraindicated are excluded.

Percentage of hip fracture patients who are diagnosed with osteoporosis and started on an osteoporosis medication (e.g., a bisphosphonate or bisphosphonate derivative, monoclonal antibody, or parathyroid hormone analog) while in hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture who are diagnosed with osteoporosis
- Numerator: number of people in the denominator who are started on osteoporosis medications while in hospital
- Data source: local data collection

Note: Patients for whom osteoporosis medications are contraindicated are excluded.

15

Follow-Up Care

Patients with hip fracture are discharged from inpatient care with a scheduled follow-up appointment with a primary care provider within 2 weeks of returning home and a scheduled follow-up appointment with the orthopaedic service within 12 weeks of their surgery.

Background

A follow-up appointment with a primary care provider within 2 weeks of returning home can help ensure that patients are recovering well from their hip fracture and that any other medical conditions (including osteoporosis) are being managed so that patients can successfully returnto their pre-fracture status.

In addition to a primary care follow-up, an appointment with the orthopaedic service should be scheduled within 12 weeks of surgery to allow for an assessment of the outcome of surgery and to facilitate a successful recovery.

Source: Advisory committee consensus

15 Follow-Up Care

What This Quality Statement Means

For Patients

You should have an appointment with a primary care provider within 2 weeks of returning home, plus a follow-up appointment with the hospital's orthopaedic service within 12 weeks of your surgery.

For Clinicians

Contact your patient's primary care provider before the patient is discharged from hospital to schedule an appointment within 2 weeks to coordinate transfer of accountability. At discharge, a summary of the patient's hospital stay should be sent to the primary care provider.

For Health Services

Ensure that systems, processes, and resources are in place to allow all postoperative hip fracture patients to access a follow-up appointment with a primary care provider within 2 weeks of discharge and to access a follow-up appointment with the orthopaedic service within 12 weeks of surgery.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Orthopaedic service

A hospital's orthopaedic service consists of a team of health care professionals involved in orthopaedic care; for example, orthopaedic surgeons, nurse practitioners, and physical therapists. At their follow-up appointment with the hospital's orthopaedic service, hip fracture patients may be seen by any member of the orthopaedic service.

Quality Indicators

Process Indicators

Percentage of hip fracture patients whose primary care provider is contacted before returning home (including primary care providers for long-term care homes) to schedule a follow-up appointment

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator whose primary care provider is contacted before returning home to schedule a follow-up appointment
- Data source: local data collection

PROCESS INDICATORS CONTINUED

Percentage of hip fracture patients whose primary care provider (including primary care providers for long-term care homes) receives a discharge summary prior to or at the primary care follow-up appointment

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator whose primary care providers receive a discharge summary prior to or at the patient's primary care follow-up appointment
- Data source: local data collection

Percentage of hip fracture patients who are seen by a primary care provider within 2 weeks of returning home

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who are seen by a primary care provider within 2 weeks of returning home
- Data source: Discharge Abstract Database, Ontario Health Insurance Program (OHIP) claims database

Percentage of hip fracture patients who are seen by the orthopaedic service within 12 weeks of discharge from hospital

- Denominator: total number of adults admitted to hospital with a primary diagnosis of fragility hip fracture who undergo surgery for hip fracture
- Numerator: number of people in the denominator who are seen by the orthopaedic service within 12 weeks of discharge from hospital
- Data source: Discharge Abstract Database, local data collection, Ontario Health Insurance Program (OHIP) claims database

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About Health Quality Ontario

Health Quality Ontario is the provincial advisor on the quality of health care. We are motivated by a single-minded purpose: Better health for all Ontarians.

Who We Are

We are a scientifically rigorous group with diverse areas of expertise. We strive for complete objectivity, and look at things from a vantage point that allows us to see the forest and the trees. We work in partnership with health care providers and organizations across the system, and engage with patients themselves, to help initiate substantial and sustainable change to the province's complex health system.

What We Do

We define the meaning of quality as it pertains to health care, and provide strategic advice so all the parts of the system can improve. We also analyze virtually all aspects of Ontario's health care. This includes looking at the overall health of Ontarians, how well different areas of the system are working together, and most importantly, patient experience. We then produce comprehensive, objective reports based on data, facts and the voice of patients, caregivers, and those who work each day in the health system. As well, we make recommendations on how to improve care using the best evidence. Finally, we support large scale quality improvements by working with our partners to facilitate ways for health care providers to learn from each other and share innovative approaches.

Why It Matters

We recognize that, as a system, we have much to be proud of, but also that it often falls short of being the best it can be. Plus certain vulnerable segments of the population are not receiving acceptable levels of attention. Our intent at Health Quality Ontario is to continuously improve the quality of health care in this province regardless of who you are or where you live. We are driven by the desire to make the system better, and by the inarguable fact that better has no limit.

Quality Standards

Looking for more information?

Visit our website at **hqontario.ca** and contact us at **qualitystandards@hqontario.ca** if you have any questions or feedback about this guide.

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