

# Utility of quality statements for the emergency department (ED) management of patients with hip fractures: Retrospective analysis of administrative data



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## BACKGROUND

- Hip fractures are one of the most serious injuries experienced by older adults.
  - Approximately 30,000 Canadians experience a hip fracture each year
  - Following hip fracture, older adults are more likely to experience loss of independence, institutionalization and even death.
- Because most people who experience a hip fracture present to the ED and spend a large portion of the pre-operative period in this setting, it is important to examine the care received and establish quality statements.
- Quality statements:
  - Explicate what constitutes quality care
  - Provide criteria for monitoring & evaluating current practice
  - Supports efforts to improve healthcare delivery and patient outcomes



## QUALITY STATEMENT DEVELOPMENT

**Step 1** - Evidence synthesis (Umbrella Review) of clinical practice guidelines conducted to appraise quality and synthesize recommendations for the pre-operative period\*.

**Step 2** - 7 Quality Statements *sensitive to nursing intervention in the ED* developed based on synthesized recommendations addressing 5 priority categories:

- Timely Surgery
- Multidisciplinary Approach to Care
- Identify & Treat Correctable Co-Morbidities
- Pain Management (2)
- Measures to Prevent Common Complications (2)

\*Filiatreault S, Hodgins M, Witherspoon R. An umbrella review of clinical practice guidelines for the management of patients with hip fractures and a synthesis of recommendations for the pre-operative period. Journal of Advanced Nursing [Internet]. 2018;74(6):1278–88. Available from: <https://doi.org/10.1111/jan.13550>

## PURPOSE

Examine feasibility of using the developed quality statements to monitor & evaluate care received by patients with hip fractures in the ED.



## METHOD

Retrospective analysis of electronic clinical data from facility identified as ‘Centre of Expertise’ for orthopedic surgery in one Atlantic province for the fiscal year of 2016-2017 in order to:

- Generate frequencies to determine proportion of cases in which quality statements were met individually and as a set
- Conduct multiple logistic regressions to examine if those who were younger (< 80 years), male, assigned a more acute triage score (CTAS 2 or 3), and arrived on a weekday-day shift were more likely to attain the quality statements.

## RESULTS

### Sample Characteristics

Characteristics of **191** patients admitted through the ED with a diagnosis of hip fracture who were 18 years of age or older with CTAS 2 to 5:

- Median age 81 years (range 51 to 101)
- 75% female
- 97% received surgical intervention
- 67% arrived on a weekday
- 53% arrived during evening/night shift
- 58% triaged as ‘Urgent’ (CTAS 3)
- **29%** triaged as ‘Less or Non-Urgent’ (CTAS 4 or 5)

### Time Spent in the ED

- Length of ED stay ranged from less than one hour to **almost 30 hours**
- Half of patients spent over **7.5hrs** & 4 spent over 24hrs

## Quality Statement Attainment

Large variability in percentage of attainment for the quality statements

A patient presenting to the ED with a suspected hip fracture will:	
receive surgery within 48 hours <sup>δ</sup> (n = 185)	74.6%
have a complete set of vital signs within 30 minutes <sup>δ</sup>	<b>88.0%*highest</b>
have a capillary blood glucose within 30 minutes <sup>δ</sup>	2.6%
be assessed for pain within 30 minutes <sup>δ</sup>	52.4%
be assessed for pain 30 minutes after receiving analgesia (n = 142)	4.9%
receive analgesia within 60 minutes <sup>δ</sup>	29.8%
have a cognitive status assessment in the ED	<b>0.5%*lowest</b>
receive care based on a pre-established multidisciplinary clinical pathway or protocol that can be initiated by nurses	N/A
be assessed for pressure injury risk during the ED stay	N/A

Note: <sup>δ</sup> = of arrival to the ED; % = valid percent; N/A = not able to examine due to lack of relevant data fields

### Multiple Logistic Regression Examining Predictors of Attainment

Predictor	Timely Surgery (n = 185)		Initial Pain Assess (N = 191)		Initial Analgesia (N = 191)	
	OR	95% CI	OR	95% CI	OR	95% CI
Age, <80 years	0.86	0.44 to 1.70	1.62	0.89 to 2.94	1.24	0.65 to 2.39
Sex, male	0.74	0.34 to 1.59	0.66	0.33 to 1.33	0.82	0.37 to 1.80
CTAS, 2 or 3	0.85	0.39 to 1.80	2.68	1.38 to 5.20	4.69	1.87 to 11.77
Presentation, weekday/day shift	1.40	0.66 to 2.96	0.78	0.41 to 1.46	0.69	0.33 to 1.43
Chi-Square Model Fit	1.91 (df 4), p = .377		13.94 (df 4), p = .004		16.70 (df 4), p = .001	
Explained Variance	Nagelkerke R <sup>2</sup> = 1.5%		Nagelkerke R <sup>2</sup> = 9.4%		Nagelkerke R <sup>2</sup> = 11.9%	

Note: OR = Odds Ratio; 95% CI = 95% confidence interval of the Odds Ratio; df = degrees of freedom

- Patients triaged as more acute were more likely to have an initial pain assessment in ≤ 30 minutes and to receive analgesia in ≤ 60 minutes

## DISCUSSION

Care received in the ED is an important area of research

Triage assessment & assigning appropriate triage scores is important because it sets the care trajectory in the ED.

CTAS Scores		
	See patient:	
CTAS 1	Resuscitation	Immediate
CTAS 2	Emergent	≤ 15 minutes
CTAS 3	Urgent	≤ 30 minutes
CTAS 4	Less Urgent	≤ 60 minutes
CTAS 5	Non Urgent	≤ 120 minutes

Vague presenting complaints (confusion, weakness and/or pain), age-related changes, as well as incomplete history puts patients with hip fractures as risk for **under-triage\***  
*\*under recognition of injury or underestimation of patient acuity*

‘**Frailty Modifier**’ introduced into Canadian triage system in 2016 in attempt to address the general issue of under-triage. Factors that may apply to patients with hip fractures include:

- Older age (>80yrs)
- Cognitive impairment
- General weakness
- Immobility
- Pain

Traditional focus of ED care - *rapid triage, initial stabilization and disposition of patients* - may not be sufficient to address needs of patients with hip fractures

By broadening the focus of care & enacting the quality statements, ED nurses can play a pivotal role in optimizing short and long-term outcomes

Implementation & evaluation of quality statements would be facilitated by:

- Creation of fixed-format data entry fields in electronic ED record
- Establish mechanisms to aggregate retrieval and examination

Benchmarks could then be established in collaboration with ED nurses

## CONCLUSION

- This study makes a unique contribution because it examined a set of quality statements that are sensitive to nursing intervention.
- It is the first known Canadian study to move beyond targets for timely surgery in an attempt to examine the quality of care patients with hip fracture receive in the ED.
- Establishing feasibility of creating evidence-based quality statements and evaluating their level of attainment in the practice setting is an important first step in improving ED care for this vulnerable population.