

Standards Matter: Do the Scottish Standards of Care For Hip Fracture Patients improve outcome?

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Background

Over 6000 hip fractures in Scotland each year

Scottish Standards of Care for Hip Fracture Patients (SSCHFP)

- ✓ Developed by Scottish Hip Fracture Audit & Advisory Group in 2012/2013
- ✓ Nationally agreed evidence based care standards for hip fracture management
- ✓ Concomitant national level prospective audit of hip fracture care quality (Scottish Hip Fracture Audit)



Scottish Standards of Care for Hip Fracture Patients

1. Time in ED <2 hours
2. Patients should have all of the 'Big Six' interventions carried out in the ED: analgesia; SEWS (Scottish Early Warning Score) chart; pressure areas assessment; Intravenous (IV)/oral fluids as appropriate; bloods taken; cognition screening
3. Admission assessments completed with 24 hours, including: pressure areas assessment; falls risk assessment; nutrition, food and fluids assessment; full cognitive assessment
4. Patients medically fit for an operation should proceed to theatre within 48 hours of admission
5. Patients scheduled for an afternoon theatre slot should not be fasted for solids/non-clear liquids for longer than 10 hours
6. Patients should not have clear oral fluids withheld for more than four hours
7. Routine pre-operative catheterisation should be avoided
8. All frail patients should have a Comprehensive Geriatric Assessment (CGA) completed within two days of admission.
9. Patients should have post-operative mobilization (or assessment for potential mobilization) by end of first post-op day
10. Post-operative Occupational Therapist (OT) assessment should be performed by the end of the third post-operative day
11. Discharge planning should be commenced within 48 hours from admission
12. All professionals in the care pathway should have a continuous process of improvement that includes recording patient-reported outcome measures (PROM) and feedback regarding patient or carer experience

Introduction

Scottish Standards of Care for Hip Fracture Patients (SSCHFP):

Collection of management goals to ensure a consistently high standard of care to patients admitted with hip fracture to any Scottish hospital

- Standard 1 **Fast-track**: <2 hours in ED
- Standard 2 **Big Six ED Bundle**: analgesia, vital sign scoring, oral/IV fluids, bloods, cognition screen, pressure area assessment
- Standard 3 **Inpatient Assessments**: falls assessment, nutrition assessment, cognition assessment, pressure area assessment
- Standard 4 **Operative Management**: surgery within 48 hours, no prolonged fasting, no routine catheterisation
- Standard 5 **Postoperative Management**: Comprehensive Geriatric Assessment, early PT & OT, early discharge planning
- Standard 6 **Outcome Measures & Satisfaction**: continuous improvement, review, patient- & carer-reported outcome measures

Objective

To determine if adherence to the Scottish Standards of Care for Hip Fracture Patients (SSCHFP) is associated with improved patient outcome

Method

- Scottish National Hip Fracture Audit
- 21 Scottish hospitals
- Patients aged over 50 years, admitted with hip fracture between the January and September 2014
- **Prospective Cohort**
- **All hip fracture patients** age >50 admitted to any of the 21 operating orthopaedic units in mainland Scotland
- Recurring 'one week in every four' audit pattern **January to September 2014**
- Patients assessed as either **meeting** or **not meeting** each individual care standard
- Outcome measures:
 - Length of stay in acute orthopaedics (LOS)
 - 30-day mortality
 - 120-day mortality
 - Discharge destination

Method

- **Univariate** regression analysis
- **Multivariate logistic regression** model (including potential confounders and all care variables)
- In order to:
 - Assess correlation between outcome and **each Standard in turn**
 - Assess correlation between outcome and **cumulative performance** with respect to the Standards

All data used were **odds ratios (95% Confidence Intervals)**. Significance set at **$p \leq 0.05$**

Results

- 1,162 patients in analysis
- 80-84 years age group was most frequent (21.8%)
- 72.9% female

- **30 day mortality**
 - ✓ Geriatric input within 48 hours [0.35 (0.14 to 0.88); p=0.03]
 - ✓ Physio review by end of first post-op day [0.52 (0.27 to 1.01); p=0.05]
 - ✓ OT review by end of third post-op day [0.41 (0.17 to 0.98); p=0.05]

- **120 day mortality**
 - ✓ Geriatric input within 48 hours [0.54 (0.31 to 0.95); p=0.03]
 - ✓ OT review by end of third post-op day [0.51 (0.29 to 0.90); p=0.02]

- **Short length of acute orthopaedic stay** (LOS < median)
 - ✓ Inpatient assessments complete within 24 hours [1.45 (1.06 to 1.98); p=0.02]
 - ✓ Absence of catheterisation [1.42 (1.04 to 1.95); p=0.03]

- **Unfavourable discharge destination** (more 'dependent' than home or sheltered accommodation)
 - ✓ Discharge planning within 48 hours [1.67 (1.03 to 2.720; p=0.04]
 - ✓ Physio review by end of first post-op day [0.64 (0.42 to 0.98); p=0.04]
 - ✓ Absence of catheterization [0.69 (0.47 to 1.00); p=0.05]
 - ✓ OT review by end of third post-op day [0.56 (0.38 to 0.82); p=0.003]

Results

- **Cumulative performance**
 - Low Care Variable Score ($\leq 4/12$ care standards achieved): n = 324
 - High Care Variable Score ($\geq 5/12$ care standards achieved): n = 426
- Patients with a **Low Care Variable Score** according to the Scottish Standards of Care had:
 - **Lower chance of a short length of stay** in acute orthopaedic care
 - *OR 0.58, 95% CI 0.42 to 0.78, $p < 0.0001$*
 - **Less favourable discharge destination**
 - *OR 1.63, 95% CI 1.12 to 2.36, $p < 0.01$*
 - **Increased mortality at 30 & 120 days**
 - *OR 3.58, 95% CI 1.75 to 7.32, $p < 0.0001$ and OR 2.01, 95% CI 1.28 to 3.12, $p = 0.003$*

Conclusions

1. Cumulative attainment of the Scottish Standards of Care is associated with **better patient outcomes**
 - *Lower mortality; Shorter length of stay; Better discharge destination*
2. Importance of a **multidisciplinary approach** to hip fracture
 - *Early Physiotherapy, Occupational Therapy, and specialist Geriatric input are associated with better outcomes*
3. A **benchmark** by which all hip fracture care is judged
 - *Incentives to clinicians, service providers, healthcare organisations*

It is unlikely to be ethical to test these care standards in a RCT setting, therefore our study provides **best practice evidence**

These findings are **generalisable across populations**, thus have a **global relevance** to reducing the health burden of hip fracture

The authors declare that the research for and communication of this independent body of work does not constitute any financial or other conflict of interest

The **Scottish Standards of Care for Hip Fracture Patients:**

- Clinically beneficial
- Globally-relevant
- A benchmark for care

Thank you