# Does a daily consultant ward round affect the outcomes of orthopaedic patients?


## ABSTRACT

**Introduction:** In the UK, more than 60 000 patients present with a fractured neck of femur each year. These patients represent a huge financial cost. This study looks at the 30-day readmissions and total length of hospital stay of patients presenting with a fractured neck of femur, as well as length of stay in non-hip fracture trauma patients, following the change to a daily consultant-led ward round.

**Methods:** A total of 200 records of patients with fractured neck of femur were reviewed with data collected retrospectively and prospectively following the introduction of the daily consultant-led ward round. Readmissions were classed as patients who spent a period of time admitted to hospital. Those who only attended an emergency unit were not included. Reasons for readmission and length of readmission were reviewed as were the initial and total length of stay. The authors also evaluated the length of stay in trauma patients (non-hip fracture emergency admissions) for a period of 6 months before and 4 months after the new working model was introduced.

**Results:** With the new working pattern, there was a reduction in the length of stay in those readmitted (13 *vs* 8 days), and the total length of stay of readmitted patients was also considerably lower (23 *vs* 13 days). In non-hip fracture trauma patients, there was a reduction in length of stay (8 *vs* 6 days).

**Conclusions:** This study demonstrates that by adopting a daily orthopaedic consultant-led ward round, it is possible to reduce the length of stay for patients with a fractured neck of femur, both on initial and subsequent hospital admissions, as well reducing the length of stay for non-hip fracture trauma patients.


In the UK, there are in excess of 60 000 patients presenting with a fractured neck of femur each year (Royal College of Physicians, 2016). These patients occupy 1.5 million bed days and cost the NHS £1 billion per year (Royal College of Physicians, 2016). With an increasingly ageing population (Government Office for Science, 2016) and financial pressures on the NHS (Robertson et al, 2017), it is more important than ever to reduce costs in this patient population. One such cost results from readmissions, with a rate reported to be as high as 10% within 30 days among patients with fractured neck of femur (Pollock et al, 2015). This amounts to a cost of approximately £2.2 billion per year for all readmissions (NHS Confederation Foundation Trust Network, 2011).

This study looks at the 30-day readmission rate for a cohort of patients before and after a change in consultant working pattern. In November 2016, the authors' department implemented a consultant-led ward round model, whereby the same orthopaedic surgeon and orthogeriatrician saw every patient on the ward round. It has been demonstrated that a consultant-led ward round can lead to a reduced length of stay, greater number of discharges (Ahmad et al, 2011), and even have cost savings from reducing inappropriate investigation requests and prescribing (Ahmad et al, 2015). This study evaluated the effects of a daily consultant-led ward round upon length of stay in patients with a fractured neck of femur, as well as that of patients admitted with orthopaedic trauma.


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## Methods

At the time of the study, the authors' department had 18 consultants, working across two sites. The consultant model was initially a 1-day on call (8 am–8 am) or the weekend (Friday 8 am–Monday 8 am). There was no requirement for a post-take ward round and consultants could have elective duties scheduled during their on-call day and may be 'off site'. The new consultant model consists of one consultant being on-call for a week (Friday 8 am–Friday 10 am) with a second consultant covering overnight (8 pm–8 am). With the new model, every orthopaedic patient is reviewed daily by the orthopaedic consultant in a combined ward round with an orthogeriatrician, there are no elective or theatre commitments for the duration and there is a requirement to be on site for the duration of the on-call.

Data were collected prospectively following the introduction of the new consultant working model and retrospectively to assess the period before this. The authors looked at 100 records in each cohort using a local neck of femur database, case notes, discharge letters and various software systems to look at theatre lists, admission and discharge details.

The authors reviewed patient demographics, number of readmissions and length of stay, both on initial admission and on subsequent readmission. Readmissions were classed as patients who spent a period of time admitted to hospital – emergency unit attendance alone was not included. Reasons for readmission were assessed and length of readmission reviewed.

Additionally, data from the local governance team on length of stay among patients presenting with trauma (non-

**Table 1. Readmissions in patients with fractured neck of femurs**

| | Before daily consultant-led ward round | After daily consultant-led ward round |
|---|---|---|
| Male (overall) | 30 (30%) | 27 (27%) |
| Female (overall) | 70 (70%) | 73 (73%) |
| Average age (overall) | 83 years | 83 years |
| Average length of stay of initial admission (overall) | 14 days | 13 days |
| Number of readmissions | 20 | 16 |
| Male (readmissions) | 12 (60%) | 2 (12.5%) |
| Female (readmissions) | 8 (40%) | 14 (87.5%) |
| Average age (readmissions) | 85 years | 85 years |
| Average time to readmission | 8 days (1–24 days) | 13 days (1–28 days) |
| Average length of stay on readmission | 13 days (0–57 days) | 8 days (1–35 days) |
| Average length of stay of initial admission (in patients subsequently readmitted) | 23 days | 13 days |

hip fracture emergency orthopaedic admissions) to the department of trauma and orthopaedics were also reviewed.

The mean values are presented.

## Results

In the period preceding the introduction of the daily consultant-led ward round, from 100 admissions there were 20 readmissions within 30 days. Of these readmissions, 15 were for non-orthopaedic reasons, with infection (such as urinary tract and respiratory tract) being the commonest complaint, and five were complications related to orthopaedic surgery including wound infection and failure of rehabilitation. Following the introduction of the daily consultant-led ward round, from 100 admissions there were 17 readmissions (one patient was discounted as they remained in hospital). Of the 16 remaining, 13 were for non-orthopaedic reasons, with infection again the commonest complaint, and three were related to the surgery including peri-prosthetic fracture and wound infection.

Of particular note, those patients readmitted in the pre-daily consultant-led ward round cohort were in hospital for longer, on average, than their post-daily consultant-led ward round peers both during the initial admission and during the readmission (*Table 1*).

An impact on non-hip fracture trauma patients was also noted. For the 6 months before the daily consultant-led ward round was introduced, average length of stay was 8 days ($n$=625). For the 4 months following the introduction of the daily consultant-led ward round, this dropped to 6 days ($n$=451).

## Discussion

Readmission following discharge for a fractured neck of femur is a significant cost burden (Kates et al, 2015). The reasons for readmission vary, from unrelated infections to failure of rehabilitation (Hahnel et al, 2009). This study demonstrates that the introduction of a daily consultant-led ward round results in a reduction in the length of stay of patients readmitted with a hip fracture.

The reduction in length of stay of readmitted patients has been demonstrated in other studies where patients are co-managed by orthogeriatric and orthopaedic consultants (Friedman et al, 2008). While there has always been a shared care model within the authors' department, the introduction of a daily joint consultant-led ward round provides continuity of care and enables potential problems to be identified and addressed in a timely manner. Consultant orthopaedic presence enabled early review of postoperative X-rays, wound reviews and liaison with colleagues from other specialties when required. Patients who were readmitted were assessed from both a medical and surgical standpoint early, enabling any social input to be instigated immediately, resulting in quicker discharges than before the introduction of the daily consultant-led ward round.

The reduced length of stay during the initial admission may also play a part in the reduction in length of stay if the patient is subsequently readmitted. Deconditioning occurs when older people in hospital lose their ability to perform daily activities over time as a result of inactivity in hospital. Longer initial admission may contribute to this deconditioning and thus result in longer stays on readmission.

With a bed day costing £275, according to figures from the authors' trust, any reduction in the length of stay carries a significant cost benefit. This study has demonstrated that by adopting a consultant-led ward round model it is possible to reduce the length of stay in patients who are readmitted. With a reduction of 5 days compared with earlier practice, the potential saving is £1375 per readmitted person and £88 000 annually (assuming the readmission rate is 16 patients in 100 and there are 400 fractured neck of femur admissions annually). When the reduction in bed days for trauma patients is factored in, this adds an additional saving of £710 050 (2 x 1291 x 275) and a total potential saving of £798 050 from changing the model of work.

The study does have some limitations. While readmissions to the authors' hospital can be noted accurately, the authors have no information on those patients who may have been readmitted elsewhere. This study has only looked at a total of 200 patients and it is possible that with larger numbers, some of the findings would no longer hold true. The costs of implementing this change in terms of staffing were not factored into the savings calculations, although the consultant leading the ward round for the week covers the fracture clinic, meaning that any cancelled elective lists can be filled by other consultants who are relieved of the burden of clinic. There have been no immediate additional costs.

## Conclusions

Neck of femur fractures are a significant cost burden that is likely to increase. It is important to develop strategies to minimize the morbidity associated with this. The authors' trust receives approximately 400 patients with neck of femur fractures

annually. This study demonstrates that changing the consultant working pattern to a consultant being on call for a week, with combined orthopaedic and orthogeriatric ward rounds, leads to a reduction in the length of stay of patients readmitted after a fractured neck of femur. This represents a significant saving in cost and may have the potential to improve patient care. **BJHM**

*Contributions: Dr KW Baryeh: data collection, analysis, manuscript preparation; Mr D Elliott: concept design, data analysis; Mr Z Harb: concept design, data analysis; Dr R Lisk: manuscript preparation.*
*Conflict of interest: none.*

Ahmad A, Purewal TS, Sharma D, Weston PJ (2011) The impact of twice-daily consultant ward rounds on the length of stay in two general medical wards. *Clin Med (Northfield IL)* **11**(6): 524–528. https://doi.org/10.7861/clinmedicine.11-6-524

Ahmad A, Weston PJ, Ahmad M, Sharma D, Purewal T (2015) A cost-benefit analysis of twice-daily consultant ward rounds and clinical input on investigation and pharmacy costs in a major teaching hospital in the UK. *BMJ Open* **5**(4): e007367. https://doi.org/10.1136/bmjopen-2014-007367

Friedman SM, Mendelson DA, Kates SL, McCann RM (2008) Geriatric co-management of proximal femur fractures: total quality management and protocol-driven care result in better outcomes for a frail patient population. *J Am Geriatr Soc* **56**(7): 1349–1356. https://doi.org/10.1111/j.1532-5415.2008.01770.x

Government Office for Science (2016) Future of an ageing population. https://www.gov.uk/government/publications/future-of-an-ageing-population (accessed 5 July 2017)

Hahnel J, Burdekin H, Anand S (2009) Re-admissions following hip fracture surgery. *Ann R Coll Surg Engl* **91**(7): 591–595. https://doi.org/10.1308/003588409X432374

Kates SL, Shields E, Behrend C, Noyes KK (2015) Financial implications of hospital readmission after hip fracture. *Geriatr Orthop Surg Rehabil* **6**(3): 140–146. https://doi.org/10.1177/2151458515578265

NHS Confederation Foundation Trust Network (2011) The impact of non-payment for acute readmissions. www.chks.co.uk/userfiles/files/The%20impact%20of%20non-payment%20for%20acute%20readmissions%20FINAL%20FOR%20WEB.pdf (accessed 11 December 2017)

Pollock FH, Bethea A, Samanta D, Modak A, Maurer JP, Chumbe JT (2015) Readmission within 30 days of discharge after hip fracture care. *Orthopedics* **38**(1): e7–e13. https://doi.org/10.3928/01477447-20150105-53

Robertson R, Wenzel L, Thompson J, Charles A (2017) Understanding NHS financial pressures How are they affecting patient care? https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Understanding%20NHS%20financial%20pressures%20-%20full%20report.pdf (accessed 5 July 2017)

Royal College of Physicians (2016) National Hip Fracture Database annual report 2016. http://www.nhfd.co.uk/2016report (accessed 30 August 2017)

## KEY POINTS

- Patients with a fractured neck of femur represent a huge cost burden.
- A daily combined orthopaedic consultant and orthogeriatric consultant ward round reduces length of stay and subsequently cost in these patients.
- Trauma patients who had not had a hip fracture also benefitted from reduced length of stay with the combined daily ward round.