Home is where our journey begins – getting more patients home after a hip fracture with an orthopaedic supportive discharge team

Authors: Radcliffe Lisk,[A] Michal Krasuski,[B] Hazel Watters,[C] Cathy Parsons[D] and Keefai Yeong[E]

ABSTRACT

Hip fracture (neck of femur fracture (NOF)) patients spend a significant amount of time in hospitals, recuperating after the acute event and undergoing rehabilitation. This model of care increases the risk of institutionalisation and may lead to hospital-related harm. An orthopaedic supportive discharge team was set up using a £90,000 grant from the Ashford and St Peter's NHS Foundation Trust's Innovation Fund and care was improved using plan-do-study-act cycles. The team was operational from the 1 March 2014 with the capacity to support eight patients. Engagement meetings were held with patients, GPs and community partners. To reduce risk of readmission, patients were given fast track access to fracture and geriatric clinics. The team's capacity increased to 12 patients through efficiency and introduction of cross-specialty working. The addition of a nurse and therapy assistant – coupled with further improvement in processes – increased capacity still further to 20 patients. In 2 years, 459 patients (211 NOFs) were referred to orthopaedic supportive discharge. Home-to-home discharges improved from 53.9% to 66.3% and length of stay reduced from 21.5 to 14.03 days, enabling a rehabilitation ward to be closed with significant cost savings for NOF patients. 99.6% of patients using orthopaedic supportive discharge provided positive feedback. Orthopaedic supportive discharge should be part of NOF services as it is cost effective, increases home-to-home discharges and reduces length of stay.

KEYWORDS: Hip fracture, home, NOF, orthopaedic supportive discharge

Introduction

Patients with hip fracture (neck of femur fracture (NOF)) spend a significant amount of time in hospital recuperating after the acute event and undergoing rehabilitation. This model of care consumes a lot of resources, increases the risk of institutionalisation and may lead to hospital-related harm.

There is evidence to suggest that an orthopaedic supportive discharge (OSD) achieves outcomes that are at least as good as or better[1] and more cost effective[2] than those achieved in an inpatient setting. National Institute for Health and Care Excellence (NICE) guidelines[3] for NOF care say to 'consider early supportive discharge as part of the Hip Fracture Programme, provided the Hip Fracture Programme multidisciplinary team remains involved'.

In the 2014 National Hip Fracture Database (NHFD) annual report,[4] 48% of hospitals reported having an early supported discharge programme. However, the 2016 facilities survey[5] suggested that Hip Fracture Programme teams still have a very limited role in monitoring or influencing their patients' post-discharge care, with only 5.6% having community team representation at clinical governance meetings.

Methodology

The Ashford and St Peter's NHS Foundation Trust's OSD team was set up using a £90,000 start-up fund from the trust's Innovation Fund. The initial team structure was a band 7 physiotherapist, band 6 nurse, band 6 occupational therapist and two band 3 rehabilitation assistants. The team was initially designed and costed to support NOF patients, but we found that the team could support a significant number of patients with other fractures or trauma and elective patients. The team took elective patients to increase capacity and to broaden their remit within orthopaedics. As they got more efficient and the service grew, it was a natural progression – other similar services also take elective patients.

The OSD team is unique in that it is part of our Hip Fracture Programme and the team plays an active role in clinical governance meetings and improving the pathway for our hip fracture patients.

The initial project team used the Institute of Healthcare Improvement's (IHI) Model for Improvement as a framework to guide the stages of the project. Below is a brief description

Authors: [A]lead consultant orthogeriatrician, Ashford and St Peter's NHS Foundation Trust, Chertsey, UK; [B]team leader, orthopaedic supportive discharge, Ashford and St Peter's NHS Foundation Trust, Chertsey, UK; [C]trauma coordinator, Ashford and St Peter's NHS Foundation Trust, Chertsey, UK; [D]director of musculoskeletal services, Ashford and St Peter's NHS Foundation Trust, Chertsey, UK; [E]consultant orthogeriatrician, Ashford and St Peter's NHS Foundation Trust, Chertsey, UK

of significant plan-do-study-act (PDSA) cycles that the team worked through:

- three test patients taken out by ward physiotherapist
- the team was operational from the 1 March 2014 with the capacity to support a maximum of eight patients
- engagement meetings with patients, GPs and community partners
- standardised multidisciplinary team patient assessment forms and template for discharge summaries created
- to reduce risk of readmission, patients were given fast track access to fracture and geriatric clinics
- capacity increased to 12 patients through efficiency and introduction of cross-specialty working
- addition of a nurse and therapy assistant – coupled with further improvement in processes, capacity increased to 20 patients
- learned from incidents and amended protocols accordingly.

As part of the development process, the team had various meetings to liaise with and engage the North-West Surrey Clinical Commissioning Group, Virgin Care (Community Providers) and social services to ensure that the final design provided a workable and resourced integrated pathway.

The current team structure is:

- band 7 physiotherapist, team leader
- one full-time band 6 nurse
- two part-time band 6 nurses
- band 6 occupational therapist
- two band 4 therapy technicians
- band 2 therapy assistant.

Criteria for patient eligibility follows the NICE guidelines[3] – ie the patient is medically stable, has the mental capacity to participate in rehabilitation, transfers independently or with assistance if supported by a family member and social support is in place.

OSD can provide up to 14 visits with all team members. Patients are visited at home 24 hours post hospital discharge. They usually receive a single visit once a day for the first 3–5 days from the nurse, occupational therapist or physiotherapist. Follow-up visits are completed by a therapy assistant, in most of the cases every other day including weekends.

The OSD team is physically based on the orthogeriatric ward, which ensures that the patient is reviewed promptly. The benefit for the patient is they get to know the members of the team who will be providing their care within their home setting; this promotes trust and improves communication between the patient, relatives and the ward multidisciplinary team. Medical input and clinical leadership is provided by two consultant orthogeriatricians within the hospital.

Outcome

In total, 459 patients were taken home by the team over a period of 2 years. Of these, 211 (45.9%) were NOF patients (Table 1). The other three highest groups were elective total hip replacement (34 patients), total knee replacement (20 patients) and ankle fractures (15 patients).

The NOF patients were taken home on average 8.74 days post-surgery and stayed 11.31 days on average with the OSD team.

Home-to-home within 30 days

The number of home-to-home cases for NOF has steadily improved from 53.9% (March 2013–February 2014) to 66.3% (March 2015–February 2016). The national average is 50.5%.[5]

Length of stay and readmissions

Our pre-intervention length of stay for NOF patients was 21.5 days (March 2013–Feb 2014), compared with a national average of 19.8 days.[4] A total of 105 NOF patients were discharged with the OSD team in the first year (March 2014–February 2015) and 106 NOF patients the second year (March 2015–February 2016). The length of stay for our NOF patients was reduced to 18.2 days in the first year then to 14.03 days in the second year. Readmissions remained similar (7.89% pre-intervention; 7.57% first year and 8.72% second year).

NOF patients sent to rehabilitation bed

The successful outcomes show a reduction in the percentage of patients sent to a rehabilitation ward in our trust from 44.2% (March 2013–February 2014) to 23.6% (March 2014–February 2015) and then to 8.6% (March 2015–February 2016). From July 2015, we closed 22 of our trust's rehabilitation beds with at least 10 beds occupied by orthopaedics.

Set-up and ongoing costs

The set-up cost was £83,517 for the first 6 months; this was to employ a band 7 physiotherapist, band 6 occupational therapist,

Table 1. Summary of results

	Mar 13–Feb 14	Mar 14–Feb 15	Mar 15–Feb 16		Mar 13–Feb 14	Mar 14–Feb 15	Mar 15–Feb 16
NOF patients, n	393	423	395	LOS, days	21.5	18.2	14.03
NOF patients discharged with OSD, n		105	106	Patients sent to rehab	44.2%	23.6%	8.60%
Non-NOFs discharged with OSD, n		77	171	(part of trust)			
NOF bed days	8,456	7,699	5,542	Readmissions	7.89%	7.57%	8.72%
OSD costs		£175,211	£209,955	Home-to-home (30 days)	53.9%	61.2%	66.3%
Cost savings		£208,662	£601,474	Mortality	4.83%	4.96%	5.10%

LOS = length of stay; NOF = neck of femur fracture; OSD = orthopaedic supportive discharge

band 6 nurse and two band 3 therapy assistants. £175,211 was spent in the first year for the OSD service.

In the second year, the ongoing costs for staffing was £199,065 (physiotherapist band 7 £52,049, nurse band 6 £44,356, part-time nurses £14,099, occupational therapist band 6 £41,423, therapy technicians £47,138) and non-pay expenditure was £10,890 – which included printing costs, phone rental and calls, travel and subsistence, course fees and computers. Most of the non-pay (£9,111) was due to travel and subsistence.

Cost effectiveness

There were 423 NOFs presenting to our trust from March 2014 to February 2015; with a bed day costing £275 and a 3.3 reduction in bed days, the possible savings were £383,873 (423×275×3.3). With the OSD costs of £175,211 during this period, there was an overall saving of £208,662 (March 2014–February 2015).

There were 395 hip fractures presenting to our trust for the period March 2015 to February 2016; with a 7.47 reduction in bed days, the possible savings were £811,429 (395×275×7.47). As the OSD cost £209,955 during this period, there was an overall saving of £601,474 (March 2015–February 2016).

Therefore, the overall 2-year cost saving was £810,136.

Patient feedback

Of the 263 patients who responded to the friends and family questionnaire, 99.6% provided positive feedback (extremely likely/likely to recommend the service). The feedback from one patient was:

I wish every hospital in the land could take up this scheme.

Conclusion and next steps

Other hospitals may wish to support similar pilots as ours has shown excellent patient experience, improvement in the number of home-to-home cases within 30 days and reductions in length of stay.

NICE[3] recommend that NOF patients meet the four criteria below for early supportive discharge services:

1 are medically stable
2 have the mental ability to participate in continued rehabilitation
3 are able to transfer and mobilise short distances
4 have not yet achieved their full rehabilitation potential, as discussed with the patient, carer and family.

These measures should be the backbone for all supportive discharge teams and they should be working closely with the Hip Fracture Programme team led by an orthogeriatrician. This will help this initiative to be replicated by other organisations.

The project continued beyond the initial 6 months because of the excellent patient outcomes and credible evidence of financial benefits. The closure of rehabilitation beds has enabled the long-term funding of the service.

More non-NOFs were taken home by the OSD team in the second year, which helped to release bed capacity for the NOFs to be managed effectively on the orthogeriatric ward with a reduced length of stay.

The next step is to prevent delays while awaiting external agencies by providing package of care (POC). The OSD team has started trialling providing POC alongside nursing and therapy care. The team has so far provided POC for seven NOF patients; three had once a day POC and four had twice a day POC.

The key lessons learnt were:

- engagement and buy in of community providers and social services are important for the success of this service
- GPs should be made aware of this service very early to ensure accountability. These patients once discharged to the OSD are under the care of the GP but because they know that the OSD team are part of the Hip Fracture Programme, they readily get the information they require (patient's recent history, diagnoses, function and psychosocial issues).

Top tips

- Ensure a realistic aim is set at the outset.
- Collect data on outcomes and complications from day 1 to help drive improvement.
- Start small and build the team up over time. This will be less of a financial risk for your trust.
- Set up easy access to medical advice or clinics from secondary care to provide a resource and a reference point for the team.
- Ensure other stakeholders, eg GP and community providers, are involved in the planning of the service.
- Seek patient feedback to help improve the service. ■

Conflicts of interest

The authors have no conflicts of interest to declare.

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Address for correspondence: Dr Radcliffe Lisk, Orthogeriatrics, Ashford and St Peter's NHS Foundation Trust, Guildford Street, Chertsey KT16 0PZ, UK.
Email: radcliffe.lisk@asph.nhs.uk