

# Secondary Fracture Prevention: The Fracture Liaison Service Model

## Portsmouth Hospitals NHS Trust

**SUMMARY** The Portsmouth Hospitals NHS Fracture Liaison Service (FLS) at the Queen Alexandra Hospital Portsmouth NHS Trust serves a population of 650,000, and was established in partnership with the National Osteoporosis Society in April 2014. The service has been designed to identify and assess those who have suffered a low trauma or fragility fracture, with a view to preventing further fractures, and reducing the costs of fractures to the NHS. Early indications (from data collected on hip fractures) show that since the service has been in operation, there has been a fall in hip fractures.

### THE CHALLENGE

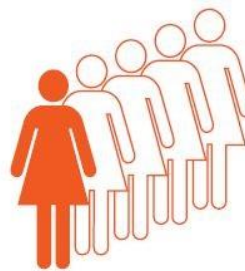
Hip fractures cost the NHS approximately £1.9 billion per annum in hospital costs alone.<sup>1</sup> Half of these occur in people who have previously suffered a fracture.<sup>2</sup> By identifying and treating patients at risk of osteoporosis in a consistent, systematic way after their first fracture, it is estimated that up to 25% of hip fractures could be prevented.<sup>3</sup>

Every year hip fractures alone account for:

Nearly **85,000** unplanned hospital admissions



Approximately **£1.9 billion** in hospital costs alone, excluding the high cost of social care



A fifth of women who have broken a bone break **3** or more before being diagnosed.



**1.8 million** bed days in UK Hospitals

In the seven years prior to the establishment of a Fracture Liaison Service, the Portsmouth Hospitals NHS Trust saw a year on year increase in the number of hip fractures (40-50 extra fractures per year). The 2011 National Hip Fracture Audit found that patients admitted to Portsmouth with fractured hips had the lowest use of bone protection in the South Central region. Similarly a Portsmouth Hospitals Trust audit in 2006 found that 75% of patients over 50 who had sustained a low-trauma fracture were not referred for a DXA scan or offered treatment. Furthermore, a pilot study in Portsmouth Hospitals Trust found that 25% of patients identified as requiring a DXA scan did not receive one.

### THE SOLUTION

#### Fracture Liaison Services - a cost effective model

Secondary fracture prevention lies at the heart of the Fracture Liaison Service (FLS) model. Services, usually based in secondary care, use a dedicated case worker, often a clinical nurse specialist, to case-find and assess fracture patients. Patients presenting with fragility fractures receive fracture risk assessment and treatment for osteoporosis where appropriate. Cost savings to the NHS are anticipated through a decline in subsequent secondary fractures.

Clinical leads at Portsmouth Hospitals NHS Trust used the comprehensive toolkit provided by the National Osteoporosis Society to establish the evidence base and financial case for the commissioning a new Fracture Liaison Service. The service aimed to:

1. Achieve early diagnosis of significant disease,
2. Reduce the need for patients to return to hospital for subsequent, more expensive treatment; and

3. Reduce demand on the Trust's fracture and emergency departments. Calculations indicated a saving over five years of approximately £113,000.

## SERVICE PERFORMANCE AND OUTCOMES

### Case finding

Since April 2014, The Portsmouth FLS has screened 7835 fractures to identify fragility fractures. Of these, 1183 received full DXA scans (to identify their bone mineral density) and 1116 are on treatment plans to reduce their risk of another fracture. The service is now extending its reach by working with the Radiology department to identify incidental findings of vertebral fractures which remain largely un-diagnosed.

While in the early stages of operation, initial data from the National Hip Fracture Database indicates that hip fracture rates in Portsmouth have started falling since the establishment of the Fracture Liaison Service (Figure 1<sup>4</sup>). Early indications are that the services is a cost effective investment for the NHS.

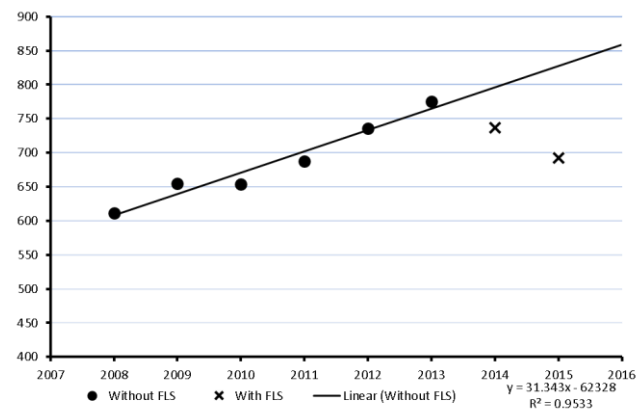


Fig 1. Hip fracture by "NHFD year" before and after the introduction of the FLS

## PATIENT SATISFACTION

FLS specialist nurse practitioners are now in a position to dispense a choice of oral bone protection medication (alendronic acid, calcium and vitamin D), reducing the burden on general practice.

In addition, a follow-up service has been established which aims to improve long term management of patients, integrated across primary and secondary care, and to enhance medication compliance rates. Compliance with medication is reported to be greater than 70% - higher than average for a long term condition.

Furthermore, in conjunction with the local NOS support group, FLS staff provide monthly education for the newly-diagnosed, providing expert information for the patient to manage their condition.

### Case Study

Amanda 56, year old office worker with 3 children, sustained a low trauma fracture of the wrist whilst walking the dog.

Amanda attended the fracture clinic to have her fracture treatment reviewed, where she was also identified by the Fracture Liaison Service (FLS). The Fracture Liaison Nurse (FLN) asked Amanda to complete a bone health questionnaire, advised her of the service and referred her for a DXA scan.

The DXA scan and bone health assessment were reviewed by the FLS and this showed Amanda to be Osteoporotic. Amanda's questionnaire revealed she had had a hysterectomy aged 35 with no hormone replacement and that she took very little exercise and was a moderate smoker since her teenage years.

Amanda was asked to attend the FLS clinic to discuss her results and treatment. Amanda was told that she was osteoporotic. She was given lifestyle advice including information about smoking cessation and a prescription and advice for an oral bisphosphate.

Amanda was also given written information about how to improve your bone health and invited to the monthly patient education meeting for newly diagnosed patients.

Amanda has a contact number for the FLS should she have any concerns and they will follow her up in 4 month and 12 month to ensure she remains clear about her treatment.

Amanda had no idea she was osteoporotic and although this was important news she was relieved it had been identified by the FLS.

## COMMISSIONING IMPLICATIONS

The Portsmouth FLS is an outstanding best practice model for the coordinated identification and treatment of patients with a fragility fracture.

**High quality of service:** The Portsmouth FLS works to the National Osteoporosis Society's national clinical standards to ensure a consistent and high quality service. The service is subject to peer review provided by the NOS on a regular basis, resulting in an improvement in patient pathways.

**Optimal treatment management:** Patients receive effective treatment from nurse specialists approved to dispense appropriate treatments for osteoporosis, with follow-up to enhance compliance rates.

**Cost savings:** Initial data show a fall in hip fractures which indicates that initial calculations of the net benefit of establishing the service will be realised.

## REFERENCES

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<sup>4</sup> Oke A, Young-Min S, Pratt G, Finnegan A, Penketh J, Hamiton L, Poulton S, Beevor C, Clark T, Richards E, Cooper A, Jones T, Allen M, Rodgers-Mansfield B, 2016. Falls in Hip Fracture Incidence over two years after the introduction of a Fracture Liaison Service, 27 (2) *Osteoporos Int.* (Suppl 2): 659-660, Vol. Nov.