

COMMISSIONING, IMPLEMENTATION AND DELIVERY OF AN INTERFACE SECONDARY
FRACTURE PREVENTION SERVICE WITHIN THE NHS: LESSONS LEARNT FROM OXFORD

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Abstract

Fracture Prevention has been identified as key to reducing the burden on the NHS from an ageing population. The need to have a systematic process for identifying, assessing and ensuring treatment adherence is vital. The process for implementing a Fracture Prevention service can be challenging but identifying the components and working closely with local commissioners can provide the evidence and release the resource required. Delivering the service to identify patients at risk and initiate treatment is important as is the use of a database for patient tracking and the need to ensure that patients remain on treatment to ensure maximum fracture prevention benefit, and cost savings are seen.

Background

Fragility fractures are a growing burden for patients, clinicians, the NHS and society and epidemiological studies have highlighted the importance of targeting those presenting with an incident fragility fracture[1]. These patients are at the highest risk of further fracture, and a number of landmark trials have established that the effective use of pharmacological therapies reduce the risk of fracture[2]. Despite this, national audits have consistently demonstrated poor rates of secondary fracture prevention in primary (25% QOF 2012/3) and secondary care (32% RCP Audit 2011)[3]. While dedicated fracture prevention services are currently recommended nationally fall doh[4] and internationally[5] there is little pragmatic evidence for how to implement them within an NHS setting[6].

Aims

To provide a case history of the service model, commissioning, implementation and delivery of an interface secondary fracture prevention service.

Rationale for selected service model

To realise the benefits of secondary prevention, requires effective case-finding, evidence-based assessment with treatment recommendations and then support of medication adherence[7]. Given 12% of individuals will re-fracture within 24 months [8], the potential effectiveness of a service is critically dependent on the success of this pathway, with particular attention to case-finding and adherence. It is estimated that up to 30% of the fractures prevented will be at the femoral neck[9].

Overall strategy

As we were combining both bone health and falls reduction and also to improve patient understanding, we used the title of fracture prevention service (FPS). We aimed to case-find all patients presenting with an acute fragility fracture to the local secondary care hospitals aged 50 years or older. A fragility fracture was identified as an injury sustained from a fall of less than 6 feet. Patients with fractures of the digits, scaphoid, face and skull were excluded. The development of a pathway for case-finding radiographic vertebral fractures was initially postponed.

Locality details

The service is county-wide and covers two acute hospital settings. Hospital A is a major trauma centre and admits 600 hip fractures a year on two inpatient wards. All patients presenting with a fracture to the Emergency Department and not admitted are routinely seen in the new fracture clinic the next day, seven days a week. In addition, patients are followed up in two specific clinics each week. Hospital A uses a commercial electronic patient tracking system for both inpatients and outpatient's trauma patients. In contrast hospital B is a smaller secondary care setting and admits 125 hip fractures a year that are cared for on a single inpatient ward. All patients presenting to the Emergency Department with a fracture are referred to a general fracture clinic and also to site specific clinics such as hand and wrist. It does not have a patient tracking system.

Administration

The large numbers of patients the service was due to see required the use of an electronic database to minimise the time the FPS practitioners spent performing routine administrative tasks. To achieve further efficiencies the database was built to both generate the letter for the GP and patient but allow audit of key service components. The database was initially built using a commercial product used by the Trust to track waiting times but the need for scheduling monitoring would have required a substantial investment in the database so we switched to a Microsoft Access database. Unfortunately this was no longer linked to the hospital patient administrative system and as it was built in-house it had some features that needed improving. We are now on our third database called the Elfin system which was funded jointly by industry and NHS funds and built to meet the needs of an FPS service by an academic partner. Elfin was built on secure open source platform and has no license fees. Its features include comprehensive assessment, repeat fractures can be recorded, can access the patient administrative system and is Electronic Patient Records (EPR) agnostic so can be implemented across other FPS settings.

Resource Requirement

The Department of Health economic model suggests one nurse is needed per 300,000 population. When a patient flow map was calculated based on 4 non-hip fragility fractures per hip fragility fracture, it was soon realised that to deliver inpatient, outpatient and community based patient assessment would require more staff. For a hip fracture rate of 725 patients per year, we estimated a fragility fracture rate of 3000-3600 patients per year depending on the level of case-finding. Taking into account annual leave, mandatory training and the number of nurses needed per hospital per clinic, we estimated 3.0 WTE band 6 nurses, with 1.5 admin and 0.5 band 3 nurse to prepare the clinics. A budget was then drawn up that included staff, DXA scans in 50% of patients, rental of office space from the Trust and the community clinic rooms. The clinical support by the lead consultant was not included as this was provided by the Trust. While overall referrals for osteoporosis would reduce, it was predicted that referrals for complex patients would increase given the more systematic case finding. The trust strongly suggested a 6 month project manager band 7? to facilitate service introduction and a 20% overhead charge which were accepted.

Commissioning

When we approached the PCT we were encouraged to work within the falls and fracture care pathway development team for elderly patients. This initially required attending a series of meetings to give expertise on the key features for a fracture prevention service as summarised by the Geisinger Health Care Model [7]. There was discussion on whether this role could be taken on within the existing community falls service. It was emphasised that this would be an interface model and so local experience of the secondary care trauma services was essential, together with the need for a separate knowledge base but with some overlap coupled with the falls service already being at capacity.

Over 24 months we worked with the PCT and key stake holders (see Figure 1) to first highlight the opportunity and costs, develop the pathway, and agree the FPS and budget

requirements. Given the structure of CQUINS, in terms of penalties for not delivering on targets and no extra resources, we did not select this as a method for resourcing the service. The initial service was funded as a pilot for 3 years.

Case finding

The most challenging aspect of case-finding is the variability in local service models where fracture clinics and wards are often busy clinical areas punctuated by varying periods of waiting. To ensure seamless working with other services the FPS performed two pilot studies to determine the least disruptive and maximally effective pathway.

From this we ascertained:

1. Seeing patients too soon after fracture in the new fracture clinic was not effective as patients were often still sensitised from the fracture and found it difficult to engage with the FPS service. Therefore the follow-up clinics were targeted.
2. Need to use multiple methods for case-finding including reviewing patients in the trauma inpatient and outpatient setting, checking clinical lists the day before, checking trauma letters and using queries on trauma databases where present.
3. Relying on trauma surgeons, fracture clinic or ward nurses to refer patients was deemed a risk as it relies on the on-going high level of awareness and is unlikely to be sustainable with staff turnover.

Assessment

The most challenging aspect is a systematic assessment that is completed in all patients and takes into account the frailest patients are the most likely not to return to separate clinic appointment. Our key lessons were:

1. Use a single questionnaire that captures: fracture risks and co-morbidities that affect treatment choice.
2. Complete as much of the assessment during their trauma visit to minimise disruption for the patients and improve the proportion that complete the assessment.
3. For those under 75 years requiring a DXA, incorporate the bone assessment as part of the DXA scan. Only see those with densitometric osteoporosis in a community setting near where they live.
4. Only request blood tests for those at high enough risk to need treatment and ensure recently performed tests are not repeated.
5. For those to be seen in a community setting, send the request form for outstanding bloods with the appointment letter so they can be performed before the clinic and therefore available at the time of the clinic.
6. For those over 75 years perform blood tests while an inpatient or in the trauma outpatient clinic if able.

Treatment initiation

It is important that the FPS practitioners are fully aware and able to access, including by referral, all NICE approved treatment options so they can individualise treatment based on fracture risk, previous therapies and co-morbidities. This requires on-going education as indications and contra-indications/ cautions for osteoporosis treatments change regularly.

1. The FPS practitioners and patients agree on a management plan that includes the information (National Osteoporosis Society), lifestyle factors, calcium and vitamin D, bone therapy and falls reduction plan.
2. Patients are given written information as a Patient Information Prescription to support the management decision.
3. The management plan is communicated to their GP using a template letter.

Adherence

The FPS can only realise reductions in re-fracture rates if patients adhere to therapy. Current strategies for improving concordance use interventions such as supportive telephone calls[10], nurse clinic appointments and bone biomarkers[11]. . The benefits of current techniques are small and costly if applied systematically across a healthcare system[12]. The advent of parenteral intermittent therapies such as denosumab[13] and zoledronate[14] represent significant therapeutic advantages offering 6 or 12 months of treatment benefit after a single injection/ infusion. Such treatment profiles are not available in the management of most other chronic conditions such as hypertension and diabetes. The challenge is to identify those not responding to therapy for secondary fracture prevention earlier as candidates for parenteral therapy. The service aims to assess concordance at 4 and 12 months (as well as obtaining follow up NHFD data where appropriate) with the following key learning points.

1. Determining adherence to oral therapies requires assessment of both frequency and method of administration.
2. Delegating adherence to primary care is a risk given the published rates of adherence in primary care and the heterogeneity between primary care physicians in their treatment of osteoporosis.
3. Specific methods are needed for those with cognitive impairment
4. Telephone contact is time consuming and postal assessment using a patient or care home manager completed questionnaire has a low return rate.
5. Continuing evolution of a monitoring service is needed to optimise the pathway based on local requirements.

Future work

At the end of three years by sharing this activity data with our commissioners we were able to secure a commissioned service that was part of the Trusts contract with the CCG. To facilitate this we included a 5% portion of the FPS budget that was contingent on meeting the Key Performance Indicators. We were also successful in a small uplift in funding to bring our nurse activity to 3.5 WTE and administrator to 2.0 WTE so we could develop and deliver a pathway for vertebral fractures.

We are now actively focusing on methods to improve concordance. To tackle this requires both improvements in detection of non-adherence and rapid simple methods to switch the patient's pathway.

Summary

An FPS is an important tool in combating the epidemic that is fragility fractures. The key components should include robust case-finding, assessment, treatment initiation, patient education and monitoring. All these combined aim to ensure a reduction in fracture rates are seen.

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