



Improving osteoporosis assessment in the fracture clinic

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ABSTRACT

INTRODUCTION The aim of this study was to compare the effectiveness of different ways of referring patients to an osteoporosis assessment service at an orthopaedic fracture clinic of a hospital in the UK.

PATIENTS AND METHODS Three methods of identifying and referring to an osteoporosis assessment service were evaluated.

RESULTS Relying on doctors for such a referral gave a catchment rate of only 1.6%. Involving patients themselves, asking them to self-refer, increased the catchment rate to 63% ($P < 0.0001$). Having a specialist osteoporosis and fracture liaison nurse present in clinic and reviewing the notes of patients checking in, to see if they match criteria for osteoporosis assessment, further increased catchment to 77% ($P = 0.036$).

CONCLUSIONS Simply having an osteoporosis assessment service and strict criteria to identify which patients should be referred to such a service will not necessarily increase catchment rate for osteoporosis patients. A nurse physically present in the clinic provided the best result, and supports the need of investing in an osteoporosis and fracture liaison nurse.

KEYWORDS

Osteoporosis – Fracture clinic – Assessment

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Osteoporosis is a major cause of fractures. Patients sustaining one osteoporosis related fracture have an increased risk of further fractures of both the axial and appendicular skeleton. Prophylactic treatment in such patients significantly reduces the risk of re-fracturing.^{1–4}

Patients presenting to hospitals in the UK with a fracture are usually only seen by the orthopaedic team without any input from medical physicians. Assessment for osteoporosis should, in principle, be an integral part of any orthopaedic fracture service. Previous studies have shown that the rate of appropriate investigation and management of patients with osteoporosis in the orthopaedic department is very low and that the majority of individuals who sustain fragility fractures are not receiving adequate osteoporosis management.^{5–8} Several hospital trusts in the UK have put in place osteoporosis assessment services, often run by a specialist nurse, aiming at further investigating (with DEXA scan) and, where necessary, commencing osteoporosis treatment for patients presenting with fractures. However, a major challenge is identifying those patients who might benefit and referring them to such the osteoporosis assessment service.

The aim of this study was to compare the effectiveness of different ways of referring patients to an osteoporosis assessment service for patients presenting with possible

osteoporosis-related fractures at the orthopaedic fracture clinic of a hospital in the UK.

Patients and Methods

At Hope Hospital, Salford, UK, an osteoporosis and fracture liaison specialist nurse provides an osteoporosis assessment and triage service which involves risk assessment, referral for a DEXA scan and, where necessary, commencement of treatment in collaboration with the medical team and the patient's general practitioner. According to our protocol, any patient over the age of 50 years presenting to the fracture clinic with a fracture should be referred to this osteoporosis assessment service. It is worth noting that, in our hospital, many patients presenting to the fracture clinic may not have a fracture but are elective follow-up patients. We looked at three different ways in which patients presenting to our fracture clinic who were older than 50 years and had a fracture could be identified and referred to this osteoporosis assessment service. Each arm of the study was applied for 1 week, after a trial period.

Arm 1

Doctors attending fracture clinics were asked to refer to the

Table 1 Proportion of patients meeting referral criteria (older than 50 years and presenting with a fracture) sent to the osteoporosis assessment service

Trial arm 1	Trial arm 2	Trial arm 3
doctors referring	patients self-referring + doctors referring	osteoporosis and fracture liaison nurse present in clinic.
1/59 (1.6%)	28/44 (63%) ^a	39/51 (77%) ^b

^a $P = < 0.0001$, trial arm 2 versus 1; ^b $P = 0.036$, trial arm 3 versus 2.

osteoporosis and fracture liaison nurse any patient over the age of 50 years presenting to the clinic with a fracture using a pre-designed proforma. Doctors attending fracture clinics were given group and one-to-one tutorials as to the criteria and method for referral.

Arm 2

In addition to doctors referring, all patients checking into the fracture clinic were given a leaflet explaining what osteoporosis is and why it might affect them if they had sustained a fracture. They were asked to self-register for osteoporosis assessment if they were older than 50 years and attending the clinic because of a fracture, using a pre-designed proforma.

Arm 3

The osteoporosis and fracture liaison specialist nurse was present in clinic and assessed the medical records of each patient checking in, to see if the patient was older than 50 years and had a fracture. If this was the case, the patient was, at the same clinic visit, asked to undergo osteoporosis assessment, which the osteoporosis nurse herself went on to perform.

After completion of the three arms of the study, review of the clinic letters identified the number of patients that should have been referred to the osteoporosis assessment service. Statistical analysis was performed using binomial test, with SPSS (v.16.0; SPSS Inc.) software. The significance level was established at a P -value of less than 0.05%.

Results

As shown in Table 1, relying on doctors to refer patients to the osteoporosis assessment service produced a very low catchment rate of only 1.6%. Involving patients themselves increased this significantly to 63% ($P < 0.0001$). Having the osteoporosis nurse physically present in clinic going through each patient's records further increased catchment to 77% ($P = 0.036$).

Discussion

Our results accord with previous studies reporting that relying on doctors to identify at-risk patients gives a very poor yield. It was interesting to show that involving patients themselves significantly increased catchment. However, having a person (in our case an osteoporosis and fracture liaison specialist nurse) dedicated to examining each patient's notes upon arrival to the clinic gave the highest catchment rate. The osteoporosis assessment consultation was provided by the same specialist nurse, which meant that it could be performed on the same day rather than relying on telephone or mail contact at a later date. It was of note that, despite the osteoporosis and fracture liaison nurse being present in clinic, we achieved only 77% rather than 100% catchment rate. This was mainly due to the workload that the specialist nurse had to face, with many patients checking in at the same time, or patients checking in while the osteoporosis nurse was consulting with a patient. Increasing the resources and having a second person to act as osteoporosis nurse assistant could potentially further increase catchment.

Previous studies have reported on automatic referral of patients attending fracture clinics using standardised referral letters.⁹ Nevertheless, in a setting such as ours where many patients presenting to the fracture clinic may not have a fracture, a system of identifying patients meeting the referral criteria is still necessary and resource-consuming. We also feel that a one-stop visit where osteoporosis management is done alongside fracture management may increase patients' compliance to osteoporosis interventions.

Conclusions

This study suggests that simply having an osteoporosis assessment service and strict criteria to identify which patients should be referred to such a service will not necessarily increase catchment rate for osteoporosis patients. Our study has confirmed that relying on doctors to refer such patients to the osteoporosis assessment service gives a

poor yield. Involving the patients themselves increases catchment rate. Nevertheless, having an osteoporosis nurse physically present in the clinic provided the highest yield, and supports the need of investing in an osteoporosis and fracture liaison nurse.¹⁰ Our study emphasises that individual needs for each hospital must be examined, and any osteoporosis protocol must be geared to those needs.

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