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Setting up an osteoporosis fracture liaison service: background and potential outcomes

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A large evidence base now exists for treatment interventions that will reduce fracture risk. However, the key area of practice now is how to get this evidence base into clinical practice. All health-care systems are subject to financial constraints, and therefore it is important that all areas of clinical practice can demonstrate that they are able to deliver care in a cost-effective manner. It has become increasingly recognized within the area of osteoporosis that treatment interventions should be targeted at patients at the highest absolute risk of fracture in order to maximize the cost-effectiveness of the service. One key subgroup of patients who are at higher absolute fracture risk are patients who present with an incident fracture. Although it has long been recognized that this is a key group to be considered for investigation and intervention, it is also clear that any form of structured care for this group has not been developed. This chapter will review the background and practical aspects of running a fracture liaison service. This service addresses the issue of secondary prevention of fracture while also considering both the absolute risk of fracture and the absolute benefit of the intervention. Issues relating to the background evidence base underpinning the service as well as the practical issues relating to the actual running of a service are discussed. Some of the potential service outcomes are also reviewed.

Key words: osteoporosis; bone mineral density; fracture.

Osteoporosis is a common condition affecting nearly 25% of women over the age of 50[1], and has been widely recognized to be a major public health problem.[2] In spite of this, osteoporosis is generally under-recognized, the diagnosis either not being made at all or being made very late in the disease process. The key feature of the natural history of osteoporosis is the increased risk of fracture. There is now an extensive evidence base with respect to interventions, particularly pharmacological interventions, which have been clearly shown to reduce future fracture risks.[3] The biggest single current challenge to osteoporosis services is how to take this treatment evidence base and

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apply it to routine clinical practice. One particular challenge faced by all major health-care systems is how to incorporate new services, such as osteoporosis services, within financially limited budgets. This chapter will review the background to the development of fracture liaison services, describe how such a service might be set up, and review the potential outcomes from such a service. This chapter will also consider how developing a fracture liaison service might be considered a cost-effective model to follow which may prove attractive to those commissioning and funding health services.

DEVELOPING OSTEOPOROSIS SERVICES

Traditionally, osteoporosis services have tended to develop in a piecemeal fashion. These services have tended to be reactive and have relied on referral of patients (either from primary care or from other secondary care specialists) who have been considered to be at 'high risk'. Accurate and reproducible measurement of bone mineral density (BMD) was undoubtedly a major step forward in our ability to assess patients with osteoporosis, and this was further enhanced with the development of the World Health Organization (WHO) osteoporosis definition based on a bone density T-score.[4] This for the first time allowed a 'common currency' to be used to define patients with or at risk of osteoporosis. Whilst BMD is undoubtedly a very important risk factor for fracture it is not the only risk factor, and over the last 10–15 years there has perhaps been an over-reliance on BMD. This has in some circumstances proven to be a potential distraction from a more detailed assessment of an individual's fracture risk. Most countries now have national guidelines for the application of BMD assessment in clinical practice, and most of these are broadly similar. In the UK the Royal College of Physicians guidelines are widely quoted and used (Figure 1).[5] There is little doubt that guidelines such as these are able to identify patients at high risk of fracture. However, the main focus of guidelines such as these is in identifying patients at higher risk of having low BMD (and consequently at a high risk of fracture). This is illustrated by adding some clinical examples to the Royal College of Physicians guidelines (Figure 2). The two examples shown have markedly different absolute fracture risks, largely driven by the age differences, although their relative fracture risks may be broadly similar. This raises the issue of the importance of relative versus absolute fracture risk which is considered in the next section.

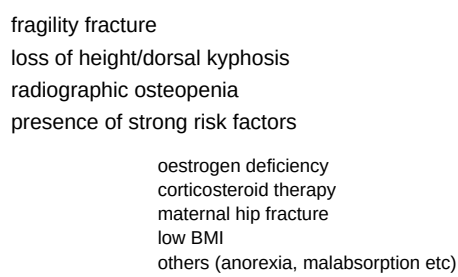

Figure 1. Indications for measurement of bone mineral density (BMD).[5] BMI, body mass index.