on bisphosphonates and 10 patients had there abbreviated mental score was less than 7. Among the remaining 23 patients, 9 patients (40%) were referred for DEXA scan. This improvement is statistically significant ($p = 0.03$, Chi-square test).

**Conclusion:** The re-audit shows that, although there is an improvement in the situation, we are still below the standards of secondary prevention of fragility fractures with 60% of femoral fragility fracture patients not being referred for DEXA scan. A pathway lead by a fracture liaison nurse dedicated to osteoporotic fracture patients should improve the situation. Abbreviated mental score is a useful clinical tool in selecting patients for bisphosphonates.

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**The three part plaster technique—An easy way to manage tibial fractures**

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Closed tibial shaft fracture is a common injury. The anteromedial surface of tibia is subcutaneous and has very tenuous skin cover. The shaft of tibia has poor blood supply because unlike the femur, it has very few muscles surrounding it. Because of these problems, the closed method of managing tibial fractures is preferable to the open method whenever possible. This prevents further injury to the soft tissue envelope and also minimises the risk of infection.

Closed treatment usually involves manipulation of the fracture under anaesthetic followed by the application of an above knee cast with the knee in slight flexion and the ankle in neutral position. The technique of plaster application at the first MUA is critical to the conservative management protocol. This usually needs two assistants, especially so if the patient is strong and muscular. Achieving and maintaining good reduction at the fracture site and simultaneously achieving satisfactory knee and ankle position can be a very daunting task, and one of these is often compromised at the expense of the other.

We present a technique by which the reduction of the fracture and the application of the cast is done in three easy steps.

This technique involves the help of only one unqualified assistant. In our experience this technique has been satisfactory especially for the distal tibial shaft fractures where ankle position is even more difficult to control.

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**Health economics: The cost of treatment of persistent fracture non-unions using bone morphogenetic protein-7 (BMP-7)**

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**Purpose of the study:** This study quantifies the cost of treatment of fracture non-unions using BMP-7. We estimated the costs incurred before and up to the application of BMP-7 and compared that to the cost incurred after its application.

**Materials and methods:** Twenty-nine patients who were treated with BMP-7 were identified and prospectively followed up. The cost of each treatment episode was estimated including hospital stay, theatre time, orthopaedic implants, drug administration, investigations, transport, clinic attendances and physiotherapy treatments. The total cost of all episodes up to the point of receiving BMP-7 was estimated. Similarly the cost following treatment with BMP-7 was analysed.

**Results:** Mean hospital stay before receiving BMP-7 was 26.84 days per fracture. Mean hospital stay after receiving BMP-7 was 7.8 days per fracture. Mean number of procedures performed prior to BMP-7 was 4.16 per fracture and following BMP-7 was 1.2 per fracture. Total cost of treatments prior to BMP-7 was £346,117 (£13,844.68 per fracture). Costs incurred following BMP-7 administration were estimated as £183,460 (£7338.4 per fracture). The cost of BMP-7 was £3122.3 per fracture.

**Discussion:** The average cost of treating persistent fracture non-unions using BMP-7 was £7338 (53.0% of the total costs of previous unsuccessful treatment of non-unions, $p < 0.05$). The average number of procedures was 1.2 per fracture treatment following BMP-7 administration compared to 4.16 prior to BMP-7 ($p < 0.05$). A significant reduction in the use of hospital beds, theatres and other resources was noted following BMP-7 treatment. Treating non-union is costly, but the financial burden could be reduced by early BMP-7 administration when a complicated or persistent non-union is present or anticipated.

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**Effects of cryolesion on spinal trigger points**

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