### Introduction

Colecalciferol is important for bone health because it helps facilitate absorption of calcium, regulates calcium levels in the blood and supports growth and maintenance of the skeleton [1-4].

Colecalciferol deficiency is common in Australia with over 30% of adults having a mild, moderate or even severe deficiency [1, 2]. Low measurement of serum 25-hydroxyvitamin D (25(OH)D) levels can increase the risk of falls and bone fracture in older people [3]. Falls and fractures have a large human and socioeconomic cost [2]. Thus, coleccalciferol supplementation offers a strategy to reduce falls and fractures. Additionally, studies have shown that coleccalciferol supplementation can improve muscle strength and function [2].

Despite availability of evidence based treatments, coleccalciferol initiation rates of osteoporosis post minimal trauma fracture continue to be suboptimal [4]. The International Osteoporosis Foundation (IOF) recommends coleccalciferol supplementation at 800 to 1000 units per day for falls and fracture prevention in adults aged 60 and older [5].

This tertiary hospital audit site does not currently have a reliable process for the initiation of coleccalciferol therapy post minimal trauma fracture and anecdotal reports from clinical pharmacists suggest inconsistent practices for initiation between hospital units. Many patients are referred to their general practitioner for follow up, and some patients receive no instructions.

### Aim

To determine the proportion of patients admitted to a major tertiary teaching hospital in Australia aged 50 years and older with a confirmed neck of femur or vertebral minimal trauma fracture, who are commenced on coleccalciferol supplementation by discharge, and to describe the doses prescribed.

### Methods

A sub-analysis of a retrospective audit of electronic medical files for patients admitted with a minimal trauma fracture of the hip or vertebra between 1st of January 2016 and the 30th June 2016 was conducted. Data was obtained through the use of electronic systems, including scanned medical records using electronic contents manager (ECM), pathology results system via clinical information systems (CIS) and the prescription dispensing system. Data was collected in two sections using a data collection tool: the first section investigated patients who did not meet exclusion criteria; the second section referred to patient parameters such as diagnosis and date of admission.

These patients were screened and excluded if one or more of the following criteria applied: non-minimal trauma fracture; less than 50 years of age during admission; pre-admission osteoporosis prevention therapy; palliative; died during admission.

### Results

Four hundred and seven discharge episodes were identified between the 1st of January 2016 and the 30th of June 2016 including one readmission. Thus a total of 406 patients were screened for a fracture of the hip or vertebrae. Of the patients screened, 64 patients were eligible for inclusion in the analysis (Figure 1).

There was an approximately even division between recruitment of hip fracture patients to vertebral fracture patients with a median age of 80 years (Table 1).

### Conclusion

Whilst over half of patients presenting to this hospital with a minimal trauma fracture were commenced on coleccalciferol therapy, there still remains a proportion of patients who did not have levels taken nor receive coleccalciferol therapy. This represents a missed opportunity for intervention that may place patients at a higher risk of subsequent fracture; therefore effective strategies should be implemented to address this treatment gap in the future.

Patients who had a level taken during admission had a greater likelihood of coleccalciferol initiation. Most prescriptions were consistent with national recommendations and international guidelines. Gender had little to no influence on the probability of coleccalciferol prescription.

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### References


