Building better bones, a quality improvement project to enhance bone health in the older person's unit

A Sweeney1; A Sowah1; A Arora1; S Rehman1,2; M NiLochlainn1,3;

1. Department of Ageing and Health, Guy's & St Thomas NHS Foundation Trust, London SE1 7EH, United Kingdom; 2. King's College London, St Thomas' Hospital, London, UK; 3. Department of Twin Research and Genetic Epidemiology, King's College London, London SE1 7EH, United Kingdom.

Introduction

Fragility fractures can have a profound impact on older adults' quality of life. Optimising bone health by checking vitamin D level, FRAX score, and actioning outcomes provides a cost-effective strategy for reducing the incidence of these fractures.[1]

Objective

Our aim is to promote awareness and undertaking of bone health assessments in the Older Persons Unit (OPU).

Method

This was a pre-post cross-sectional study. Data was collected from 212 patient records over two separate days, one month apart. Patients admitted to the OPU at St Thomas' Hospital were included and data was obtained from patient records using EPIC.

Three strategies were implemented to improve awareness, accessibility, and time efficiency:

1. Posters with QR codes linking relevant resources and the FRAX tool were placed throughout the OPU.
2. An email campaign targeted both junior and senior staff to raise awareness.
3. A shared Epic 'SmartPhrase' which auto-populated relevant results and provided an easy-to-follow template for documenting FRAX scores and outcomes.

Hi all,

As part of a quality improvement project, we're focusing on improving how we **document and action bone health plans**, particularly the use of **FRAX scores**. Recent data from the OPU has shown that only **8.15% of patients** have a FRAX score documented — a missed opportunity to prevent potentially life-altering fractures.
To help save time and keep things simple

- We've created a smartphrase: **'.frax'** that provides a quick and simple way to document the FRAX score directly in the notes.
- It includes links to the FRAX calculator and relevant guidance.
- Posters with **QR codes** are also available on the wards, allowing you to access the calculator on your phone for further ease of access

Please email if the smartphrase isn't working for you, you may need to be added to the shared list.
Together, we can make a real difference in reducing preventable fractures and improving long-term outcomes for our patients.

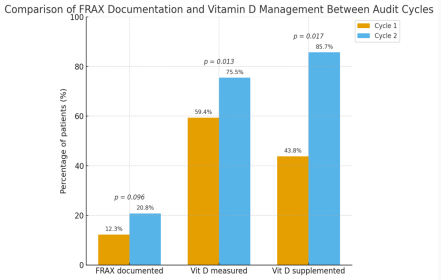
Bone Health Documentation

https://frax.shef.ac.uk/FRAX/tool.aspx?country=1
(Copy & Paste link)

Vitamin D + Calcium Levels In Last 6 months (Y/N)	@LABGI(CCA,VITD25)@ (***)
Frax score: (10-year fracture probability)	Major Osteoporotic: (***) % Hip Fracture (***) %
NOGG interpretation: (low / intermediate / high / very high)	Low ☐ Intermediate ☐ High ☐ Very High ☐
Outcome *(tick box)*	Lifestyle: ☐ BMD: ☐ Treat: ☐ Referral to specialist: ☐ Already on treatment ☐
Vitamin D +/- Calcium Replacement	(***)
Antiresorptive treatment	(***)
Plan / Outcome 1.	

Results

In the initial audit cycle, documentation of FRAX was recorded in 13 out of 106 patients (12.3%), whereas in the subsequent cycle, this increased to 22 out of 106 patients (20.8%). Although there was a trend toward improved FRAX documentation, this did not reach statistical significance (p = 0.096).



In contrast, there was a significant improvement in the assessment and management of vitamin D status between the two audit cycles. Specifically, serum vitamin D levels were measured in 63 of 106 patients (59.4%) during the first cycle, which increased substantially to 80 of 106 patients (75.5%) in the second cycle (p = 0.013). Furthermore, among patients identified with vitamin D insufficiency, defined as serum levels below 25 nmol/L, the proportion receiving appropriate supplementation increased from 7 of 16 patients (43.8%) in the first cycle to 12 of 14 patients (85.7%) in the second cycle, representing a statistically significant improvement (p = 0.017).

Conclusion

There has been a positive shift in how bone health is being addressed in our older patients, with the most notable gains observed in the assessment and treatment of vitamin D deficiency. The proportion of patients undergoing vitamin D testing and receiving appropriate supplementation increased significantly between audit cycles, reflecting heightened awareness and proactive management of bone health. This coupled with the relatively cheap interventions shows promise for both sustainability and scalability.

Although documentation of FRAX scores showed only modest improvement, the overall trend indicates a positive shift in clinical practice. Continued engagement and targeted interventions will be necessary to consolidate these gains and ensure continued improvements in patient care.

References

1. *Turner DA, Fong Soe Khioe R, Shepstone L. Journal of Bone and Mineral Research 2018;33:845-851.*