



Are DEXA Scans Slipping Through the Cracks After Fragility Fractures?

An Audit to Assess the Proportion of Patients in Primary Care Who Have Received DEXA Scans Following Fragility Fractures

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INTRODUCTION

- Fragility fractures occur as a result of low-energy trauma, such as a fall from standing height or less and can be a sign of underlying osteoporosis.^[1]
- The most common fracture sites are the hip, distal radius and spine.^[2]
- Dual-energy X-ray absorptiometry (DEXA) scans measure bone density.^[2]

National Osteoporosis Guideline Group (NOGG) guideline 3c

“Documentation of the proportion of postmenopausal women, and men age ≥50 years, registered with a general practice: With a prior fragility fracture, who have had a DXA scan with the result recorded.”^[3]

METHODS

Two cycles of data were collected on all patients ≥50 years old who were coded as having had a fragility fracture, hip fracture, distal radius fracture or vertebral fracture (and all related codes) on SystemOne. Hospital letters were reviewed to confirm whether the injury mechanism was indicated as a fragility fracture. The audit then assessed:

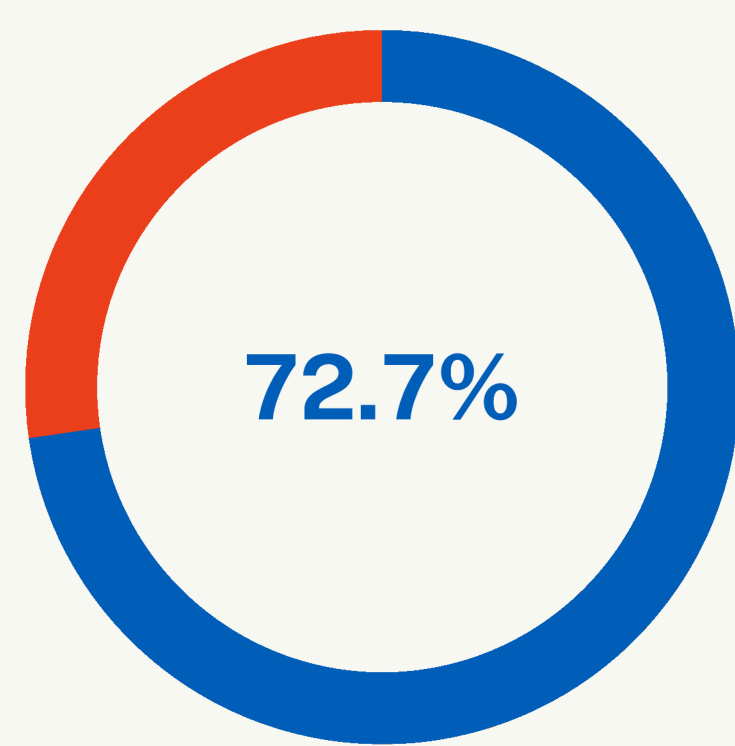
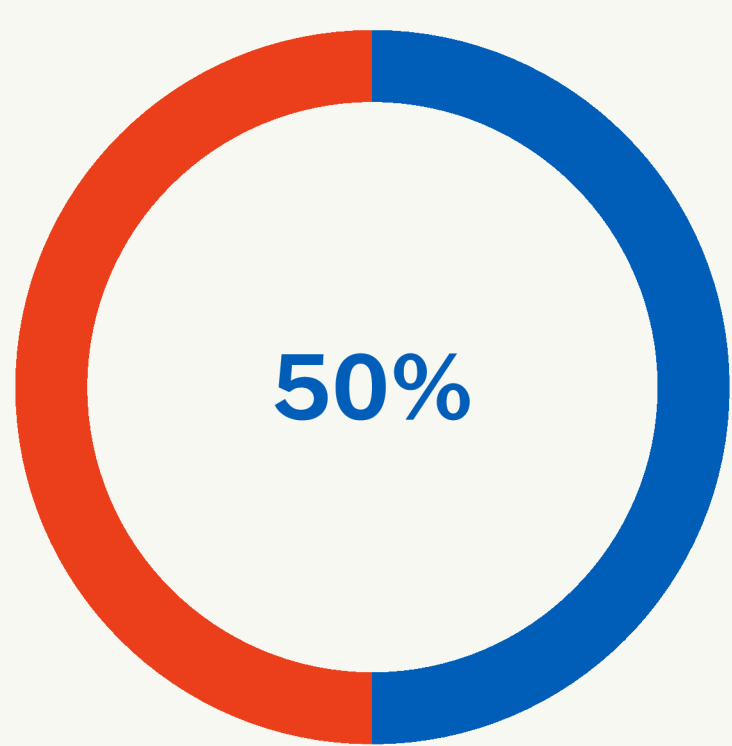
- Was a DEXA scan requested?
- Is the DEXA result recorded?
- Has the patient been coded as having had a fragility fracture?

The 2nd cycle was completed 4 months after the intervention.

RESULTS - FIRST CYCLE

67 patients were identified over a 5-year period (01/03/2019 - 01/03/2024). One patient was excluded due to a high-energy mechanism of injury. Of the remaining 66 patients:

- 50% of all patients had a DEXA scan with the result recorded.
- 11 patients were coded as having a fragility fracture, of which 72.7% had a DEXA scan recorded.



- There was a 60% increase in DEXA scans when coded with fragility fractures, compared to those not coded (p=0.0346).

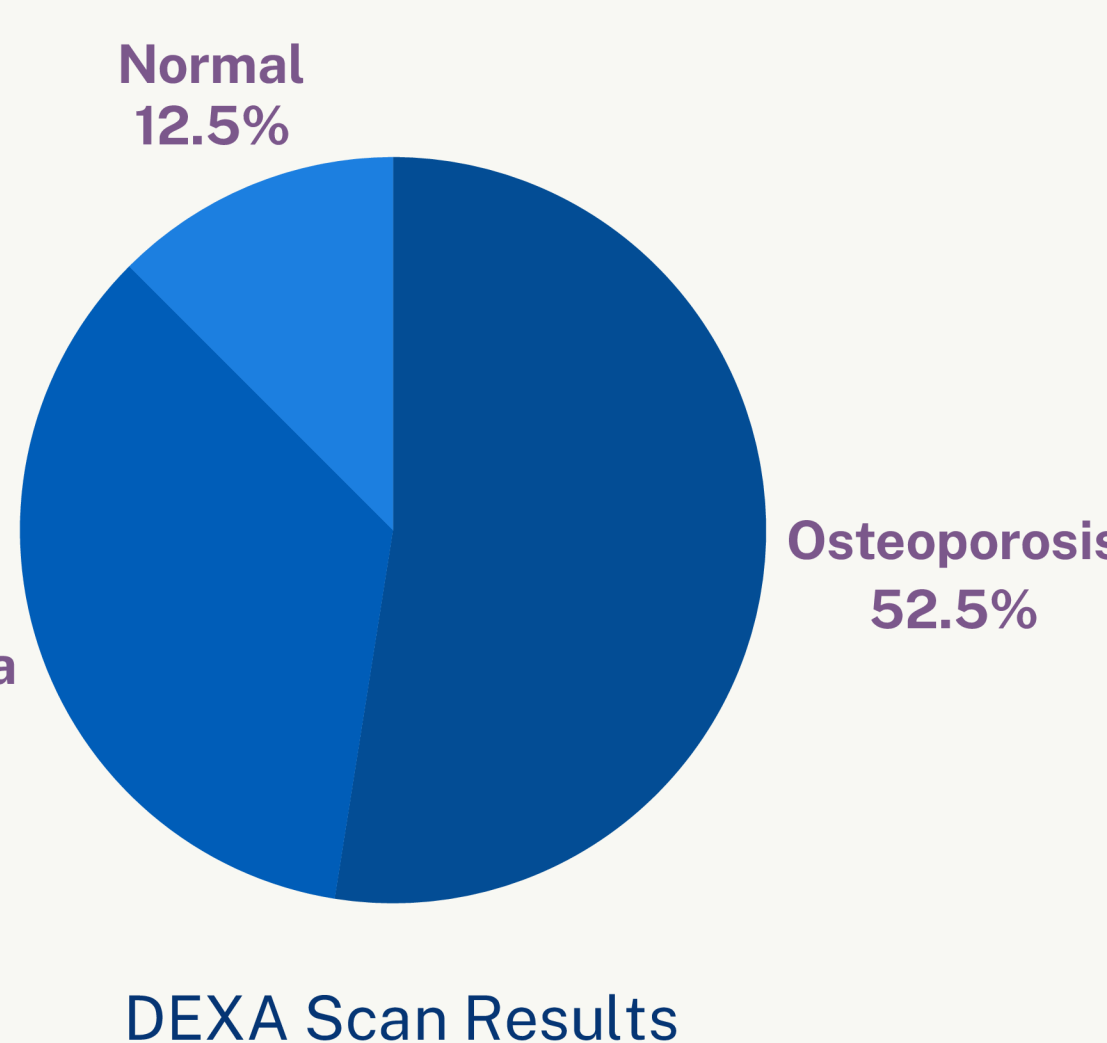
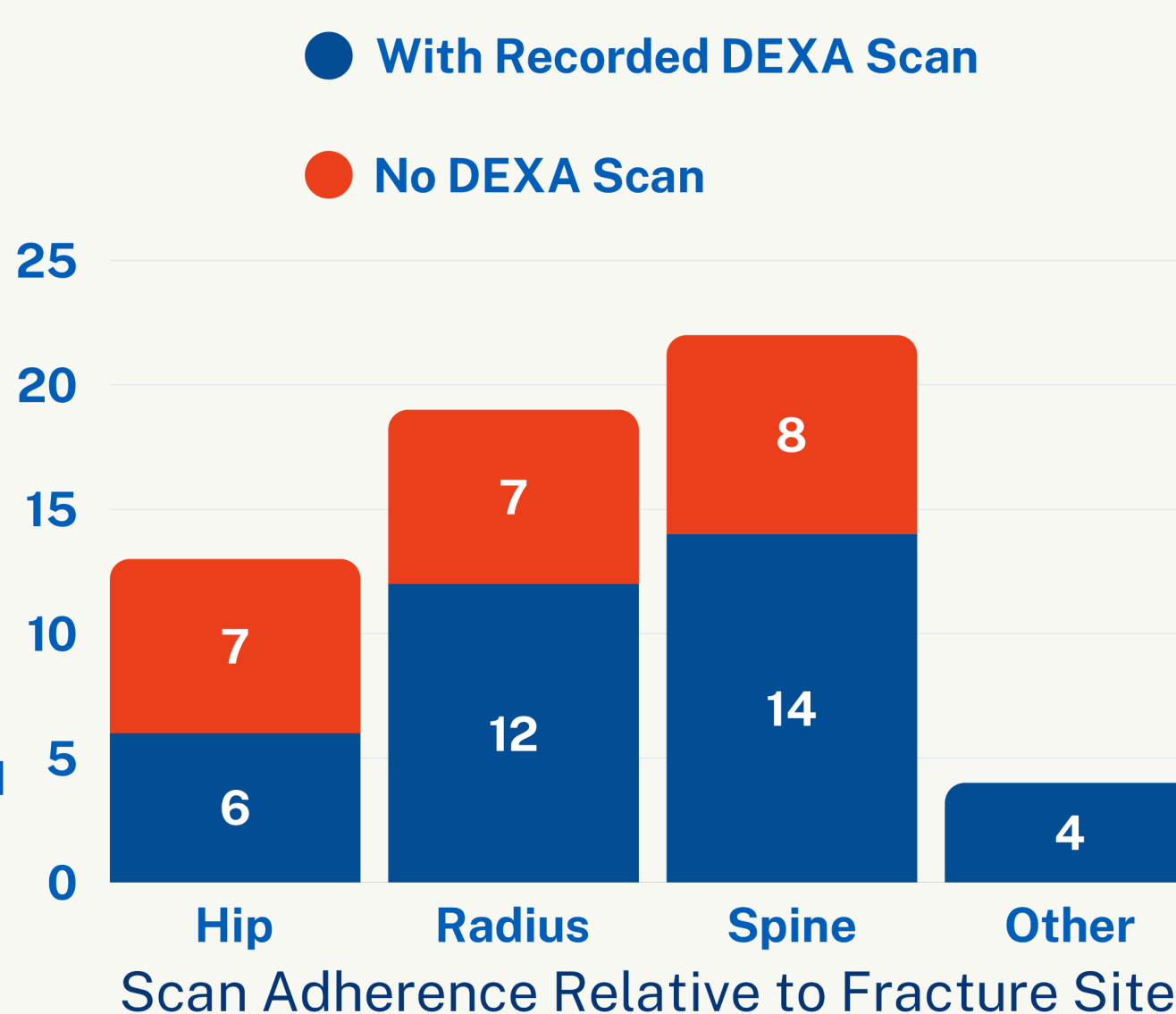
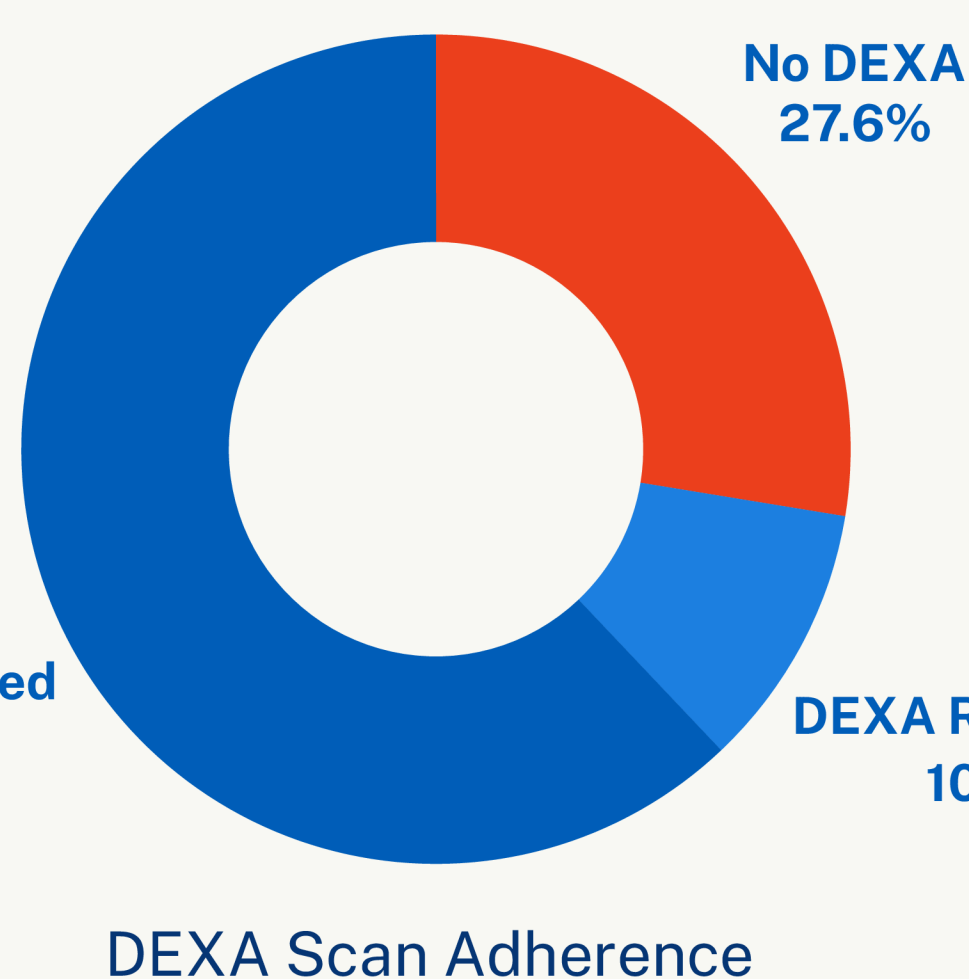
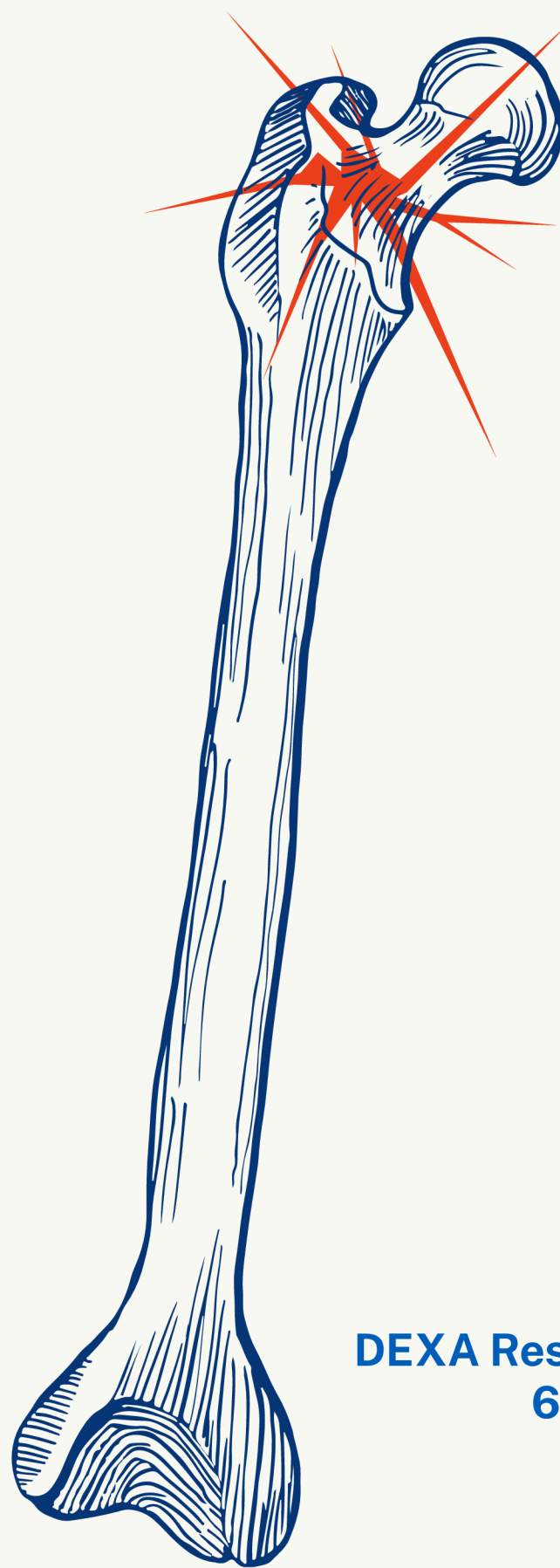
INTERVENTIONS

- Tasks were sent to named GPs to request DEXA scans and to clinical coders to add the fragility fracture code.
- Presentations were given to practice partners and the primary care network.
- Closed the audit loop.

RESULTS - SECOND CYCLE

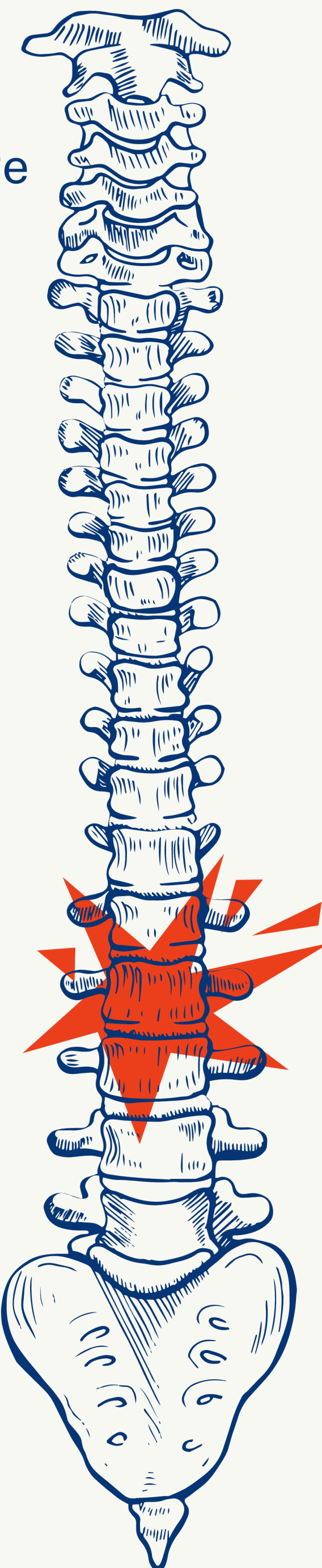
- 100% (n=58, p<0.0001) of patients with a low-energy mechanism of injury were coded as having had fragility fractures.
- 62.1% (n=36, p=0.0944) had DEXA scan results recorded, a further 6 patients had DEXA scans requested (n=42, 72.4%, p=0.0119).

- Average 22.6 (range 1-74) months from first fragility fracture to DEXA scan.
- Refracture rate 29.3% (n=17), no significant difference between those with or without DEXA scans (p=0.1923).
- 63.8% (n=37) were prescribed bisphosphonates at an average 24 (range 0-197) months from first fragility fracture.



DEMOGRAPHICS

- 46 F, 12 M.
- Average age at time of first fragility fracture was 74.5 (range 54-93) years.
- Average BMI of 26.3 (range 19.5-45.8) kg/m².
- Average Index of Multiple Deprivation Score of 6.6 (Range 2-10).



CONCLUSIONS

- Many patients were frail with significant comorbidities, which may have contributed to the low rate of DEXA scan completion.
- DEXA scans may not influence management in some patients, as bone protection can be prescribed without the need for a scan.
- Accurate clinical coding is important, as it is associated with a higher baseline proportion of patients receiving a DEXA scan.
- Whilst the increase in reported scans was not statistically significant by the second cycle, the improvement will likely be statistically significant once patients attend the scans that have been requested but not yet performed.
- This audit highlights the need for improved adherence to guidelines and enhanced clinical coding practices to ensure optimal patient care.
- This audit is being repeated at additional primary care practices in the region, and a parallel audit is underway in the Orthopaedics department of a local Trauma Unit to support a business case for the creation of a Fracture Liaison Service in the region.

REFERENCES

- [1] Fragility fractures: International Osteoporosis Foundation (2024) IOF International Osteoporosis Foundation. Available at: <https://www.osteoporosis.foundation/health-professionals/fragility-fractures> (Accessed: 17 August 2024).
- [2] Osteoporosis - prevention of fragility fractures (2023) NICE. Available at: <https://cks.nice.org.uk/topics/osteoporosis-prevention-of-fragility-fractures/> (Accessed: 19 August 2024).
- [3] Section 12, Guideline 3c: Review criteria for Audit and Quality Improvement (2022) NOGG. Available at: <https://www.nogg.org.uk/full-guideline/section-12-review-criteria-audit-and-quality-improvement> (Accessed: 19 August 2024).