Oral Bisphosphonate Administration on a Hip Fracture Unit: Knowledge, Practice & Patient Experience Audit

C. Byrne (Physician Associate) · Dr Z. Brown · Dr A. Monro

Gloucestershire Royal Hospital · Two-arm audit: anonymous MDT survey + patient interview arm

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BACKGROUND

Alendronic acid (70mg weekly) is first-line treatment for osteoporosis[1] — a near-universal co-morbidity in hip fracture patients.[2] Correct administration requires: fasting, ~200ml plain water, ≥30 min upright, no concomitant medications. Oral bioavailability is <5% at baseline — any deviation reduces absorption and increases GI side effect risk.[3]

Over 50% of patients discontinue bisphosphonates within 12 months; only 44% follow all dosing instructions.[5] Every 1% drop in compliance increases hip fracture risk by 0.4%.[5]

AIM

To evaluate MDT knowledge of correct bisphosphonate administration, assess current ward practice, and explore patient recall of how their medication was given — comparing findings against ROS Quality Standards[4] and NOGG 2024[1] recommendations.

METHODS

ARM 1 — Staff Survey (n=40)
18 nurses · 8 doctors · 9 HCAs · 3 pharmacists · 2 PAs. Anonymous, role-neutral, 4 sections: role; knowledge; practice & barriers; confidence & training.

ARM 2 — Patient Interviews (n=42)
Cognitively intact · CFS 2–5 · interviewed same day or ≤48hrs post-dose. Asked: timing, fluid, co-administration, positioning.

Current practice: *Bone health nurses and ward round orthogeriatrician counsel on admission day. Bone health nurses follow up 3 months post-discharge.*

STAFF RESULTS

- **~50%** identified fasted AM timing (all roles)
- **94%** nurses correct on plain water requirement
- **Training gap** No HCAs had received prior training. Self-reported confidence was lowest among HCAs, with disparity seen across all roles.

PATIENT RESULTS

- **28%** recalled correct early-morning administration
- **33%** lay down and slept right after their dose
- **0** had other medications co-administered at the same time ✓
- **Fluid** Amount of fluid given was unclear — none could confirm a full glass of plain water

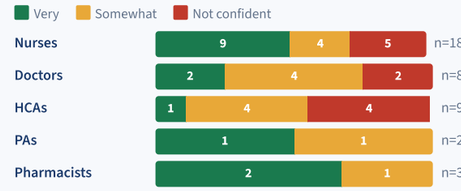
Cognitively intact. CFS 2–5.
Counselled.
By dose day —
forgotten.

33% lay down & slept
right after their alendronic acid.

KNOWLEDGE BY ROLE (% CORRECT)

Question	Nurses	Drs	HCAs	PAs	Pharm
Identify bisphosphonate	50%	50%	11%	50%	67%
Fasted AM timing	50%	38%	67%	50%	33%
Plain water only	94%	100%	33%	100%	100%
Upright ≥30 min	100%	100%	67%	100%	100%

SELF-RATED CONFIDENCE



DISCUSSION

Admission-day counselling is insufficient to ensure patient recall of correct administration requirements — even in cognitively intact, fit to mildly frail patients. One-third lay down and slept immediately after their alendronic acid: a direct patient safety concern. Compounding factors unique to hip fracture patients — including pain, delirium, fatigue, and difficulty achieving an upright posture — create barriers that current protocols do not adequately address.

A knowledge and confidence gap exists across all staff groups. Barriers reported include time pressures, workload, and lack of training. Whilst HCAs do not administer bisphosphonates, they can play a key role in supporting post-administration tasks — particularly upright positioning — making their training an important and addressable priority.

RECOMMENDATIONS

1. **Reinforce education at point of administration**
   Brief nurse-led check at medication round
2. **Bone health information leaflet**
   A ward-specific alendronic acid patient information leaflet has been developed for use at the bedside
3. **Competency-based training — all roles**
   Priority: HCAs and band 5 nurses
4. **Positioning protocol & consider IV alternative**
   Electric bed guidance for frail patients. Where oral compliance cannot be assured, consider IV zoledronate
5. **Document administration conditions**
   Flag suboptimal conditions in drug chart
6. **Re-audit in 12 months**
   Repeat both arms post-implementation
7. **Further audit: second inpatient dose**
   Does recall improve with a second dose?

REFERENCES

Full references available in abstract — scan QR code above.

[1] NOGG 2024 [2] Lim et al. *J Orthop Surg Res.* 2025 [3] Chalhoub et al. *StatPearls* 2023 [4] ROS Quality Standards, theros.org.uk [5] Cramer et al. *Osteoporos Int.* 2007

Scan to access the full abstract, supplementary questionnaire & patient information leaflet
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