An audit to review functional outcomes and complications of Dynamic Hip Screw fixation and Intramedullary Nail for neck of femur fractures at Royal Blackburn Hospital.

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Introduction

- Neck of femur fractures (NoFF) are most common (>70,000 cases annually in UK)
- Rising incidence due to ageing, longer life expectancy, and osteoporosis
- Socioeconomic burden (£2 billion/year - surgery, rehab, long-term care)
- Patient impact: Loss of independence, institutionalisation, 1-year mortality >30%
- Dynamic Hip Screws (DHS) and Intramedullary Nails (IMN) are mainstay treatment.
- Royal Blackburn Hospital (RBH) has diverse cohorts with comorbidities (osteoporosis and cardiovascular disease)
- High prevalence of NOFF

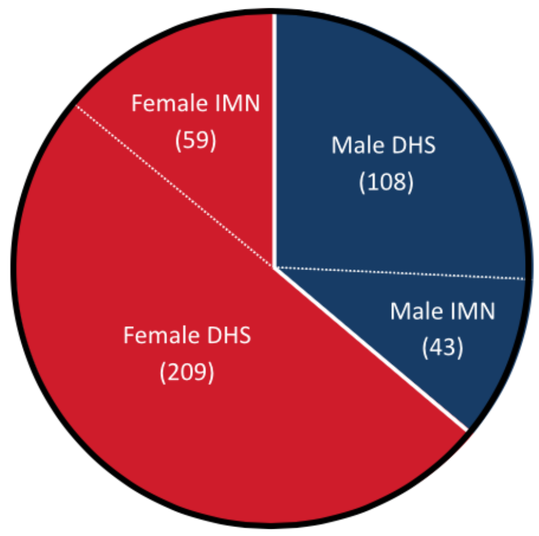
Aims

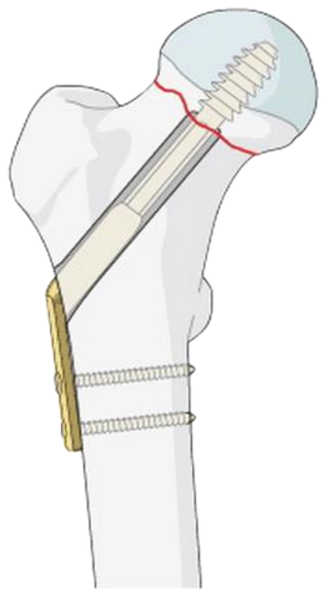
This audit evaluated surgical outcomes and adherence of DHS and IMN surgeries performed at RBH to National Institute for Health and Care Excellence and National Hip Fracture Database guidelines during 2023–2024.

Methodology

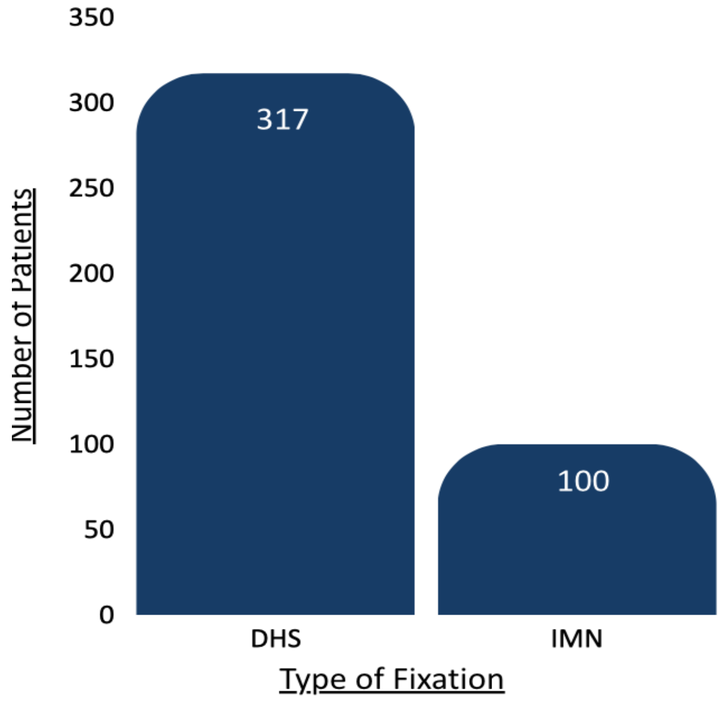
- A retrospective cohort study
- 417 patients aged ≥ 18 years old with NOFF with DHS or IM nail fixation for NoFF at RBH from January 1st, 2023, to December 30th, 2024.
- Data was extracted from electronic patient records
  - ESR/Cerner for electronic medical records
  - PACS for imaging data
- Statistical analysis performed using the Chi-squared test in SPSS.
- p-value <0.05 is considered statistically significant.

DHS & IMN Demographics





Type of Fixation



Discussion

- **Failure Rate:** IMN had a lower failure rate as IMN provides more mechanical stability
- **Gender Differences:** Men had lower fracture rates but higher risk of complications due to the higher-energy trauma and bone geometry.
- **Infection & Mortality Rate:** Low rates suggest good perioperative prophylaxis and theatre sterility. Thus, comorbidities, operative time, perioperative and wound care influence infection & mortality rates more.
- **Blood Transfusion:** IMN have longer operative times and require reaming of canal and inserting a larger implant , which leads to greater blood loss.

Recommendations & Limitations

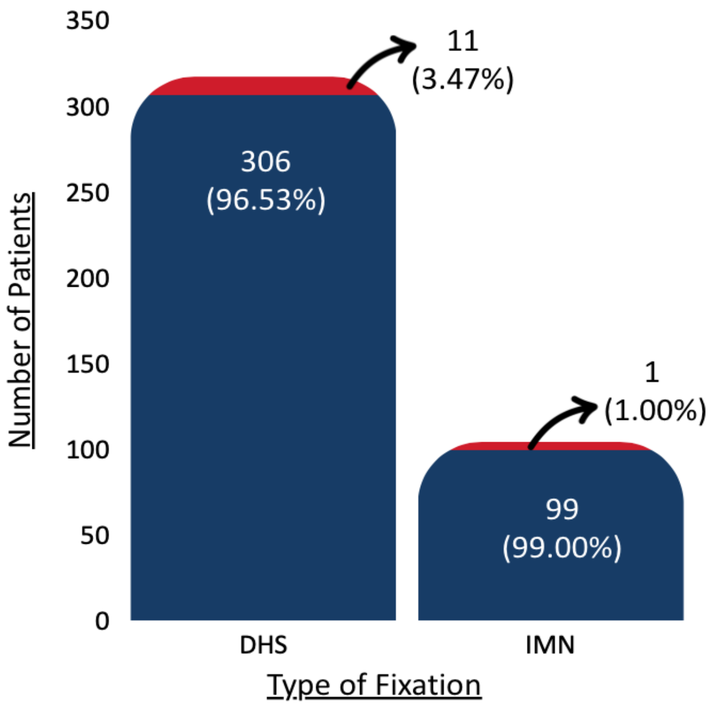
- **Strengths:** large sample size and two-year duration, which enhanced reliability of data. Benchmarked against national standards provided real-world comparative data.
- **Limitations:** single-centre design introduces bias and limits generalisability to wider populations. Functional outcomes and longer-term mortality not assessed.

Conclusion

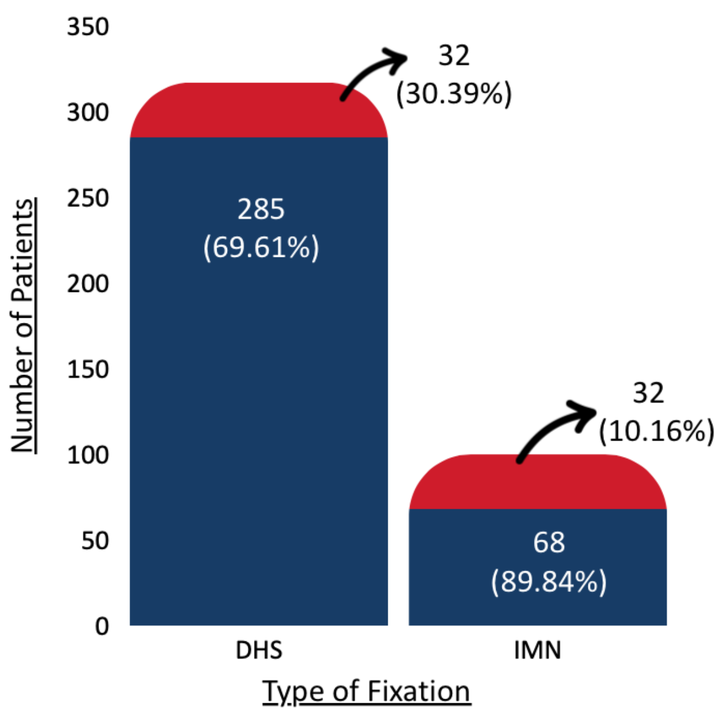
- DHS for stable fractures, offering low transfusion risk and reliable outcomes.
- IMN for unstable fractures, reducing fixation failure but increasing transfusion requirements.
- Consultant supervision is critical in IMN procedures and should be prioritised.
- Mortality outcomes are driven by patient comorbidities more than implant choice, highlighting use of multidisciplinary perioperative care.

Results

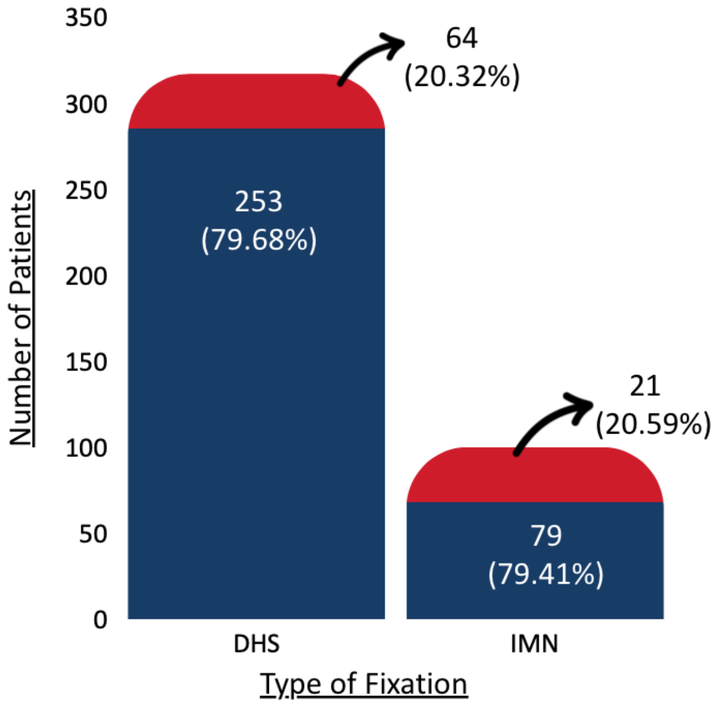
Failure Rates



Blood Transfusion Rates



Mortality Rate



Reference

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(4) Chirodian, N., Arch, B., & Parker, M. J. (2005). Sliding hip screw fixation of trochanteric hip fractures: Outcome of 1024 procedures. Injury, 36(6), 793–800.