



# Guidelines for Check X-rays Post Fractured Neck of Femur Surgery

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## BACKGROUND

- 70-75000 cases of fractured neck of femur annually in the UK
- 600 annual cases at SGH - 8<sup>th</sup> nationally
- £2 billion yearly cost to NHS
- Complex patients with multiple co-morbidities
- Clear national guidelines aimed at expediting treatment and early discharge
- NICE consultation announced 10/11 with emphasis on timing of surgery and mobilisation strategies
- Early mobilisation essential
- Delays due to:
  - Peri operative complications
  - Post operative pain
  - **Lack of clarity in post-operative instructions**
  - **Delay in obtaining and reviewing post-operative check X-rays**

## POLICY AT SGH

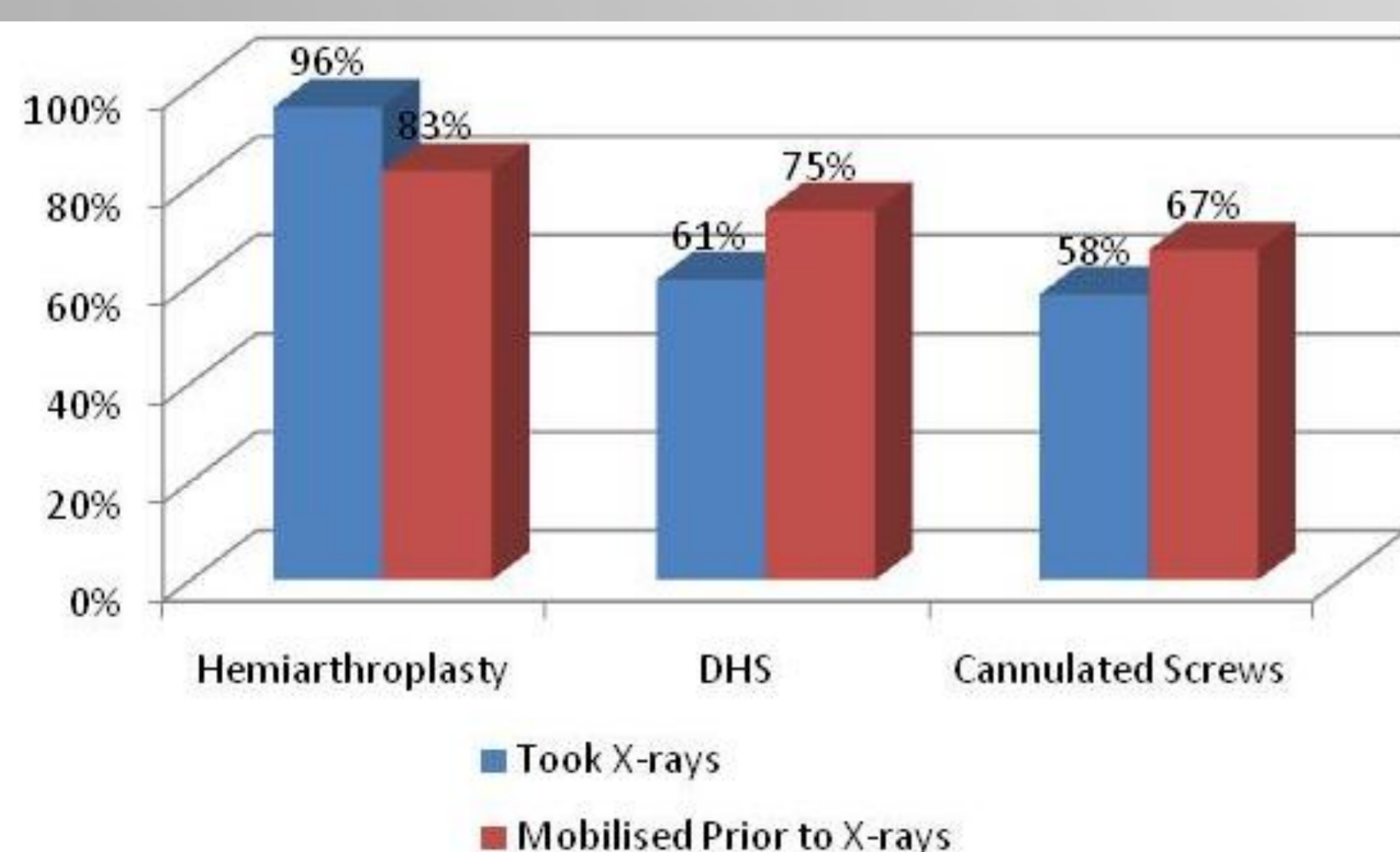
Agreed in 1998  
Surgeon to specify when happy for pt to mobilise PRIOR to check x-ray  
Routine check x-ray to be done on DAY 5 as poor images obtained when done earlier due to pt immobility  
If surgeon not happy for pt to mobilise it has to be specified and then check x-ray will continue to be DAY 1

## IS POLICY KNOWN?

Questionnaire sent to senior ward sisters  
6 replied  
None of them were aware of the policy  
2 answered X-rays needed to be done within 1-2days, 1 within 3 days and 3 within 5 days  
All replied patients could mobilise prior to X-rays but this had to be documented

## THE EVIDENCE

Chakravarthy et al. International Journal of Clinical Practice 2007  
Retrospective case note review of all pts undergoing NOF fracture surgery 2002-2004 at Selly Oak Hospital  
Total of 1265 cases  
Five acute implant related complications  
Only one decision to revise based on check X-rays. All pts undergoing revision were clinically symptomatic  
Postal proforma sent to 450 randomly selected UK T&O consultants on whether check X-rays were taken and if patients were allowed to mobilise  
300 responses



## THEIR RECOMMENDATIONS

- Following DHS/cannulated screws check X-rays to be done only when clinically indicated
- Following hemiarthroplasty check X-rays to be done only if there are operative concerns or post operative complications

## PROBLEM

Lack of clarity and consistency in performing check X-rays and instructions for mobilising post fractured neck of femur surgery can lead to delays  
Staff not aware of previous policy  
Current practice audited to identify areas for improvement

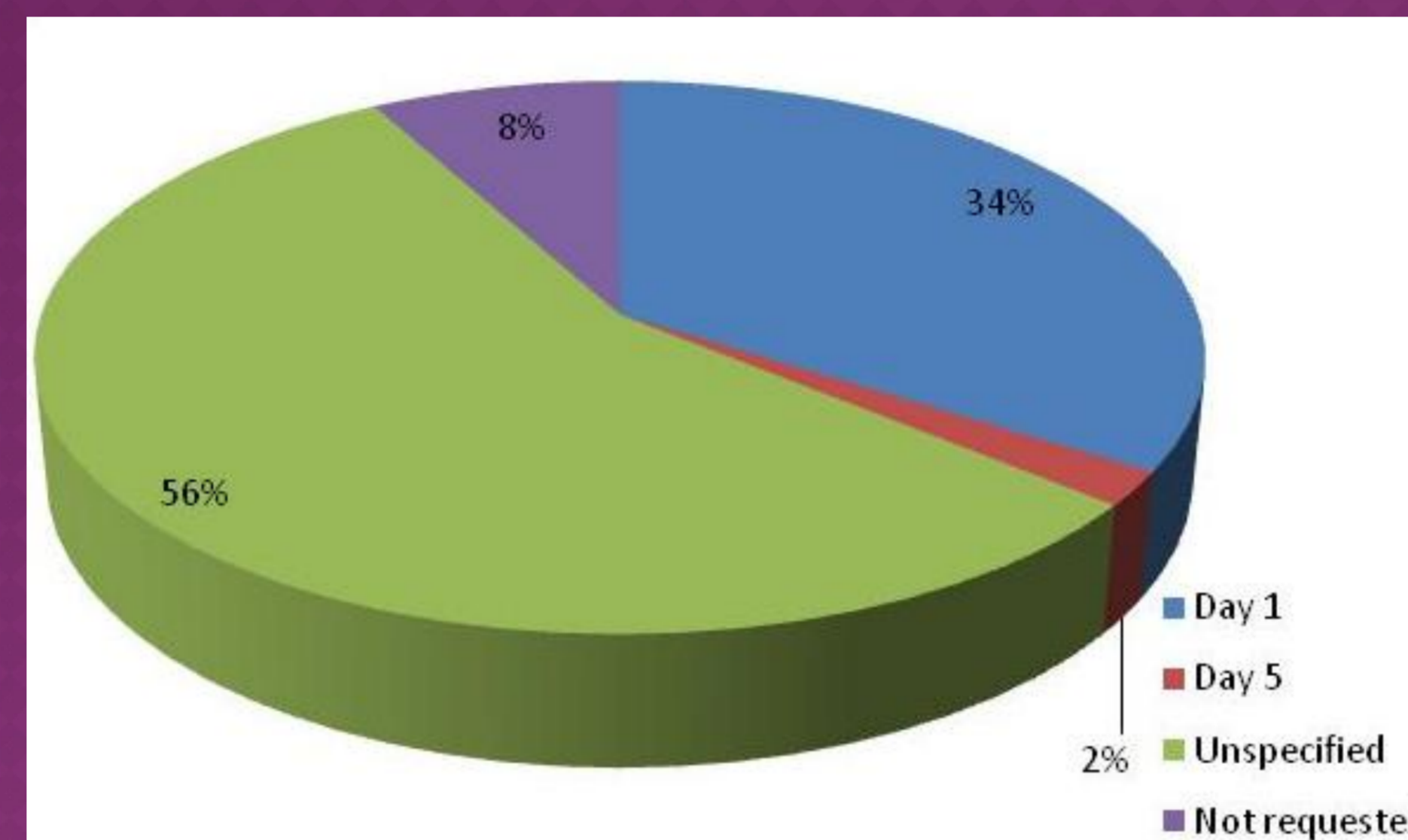
## STANDARDS

- 100% of patients should have a post-operative X-ray following hip hemiarthroplasty, this should occur on day five post-operatively
- 100% of patients should have a X-ray conducted on day one post-operatively if there are intra-operative concerns
- 100% of patients should be mobilised on day one post-operatively unless stated otherwise in the notes or clinical condition precludes mobilisation

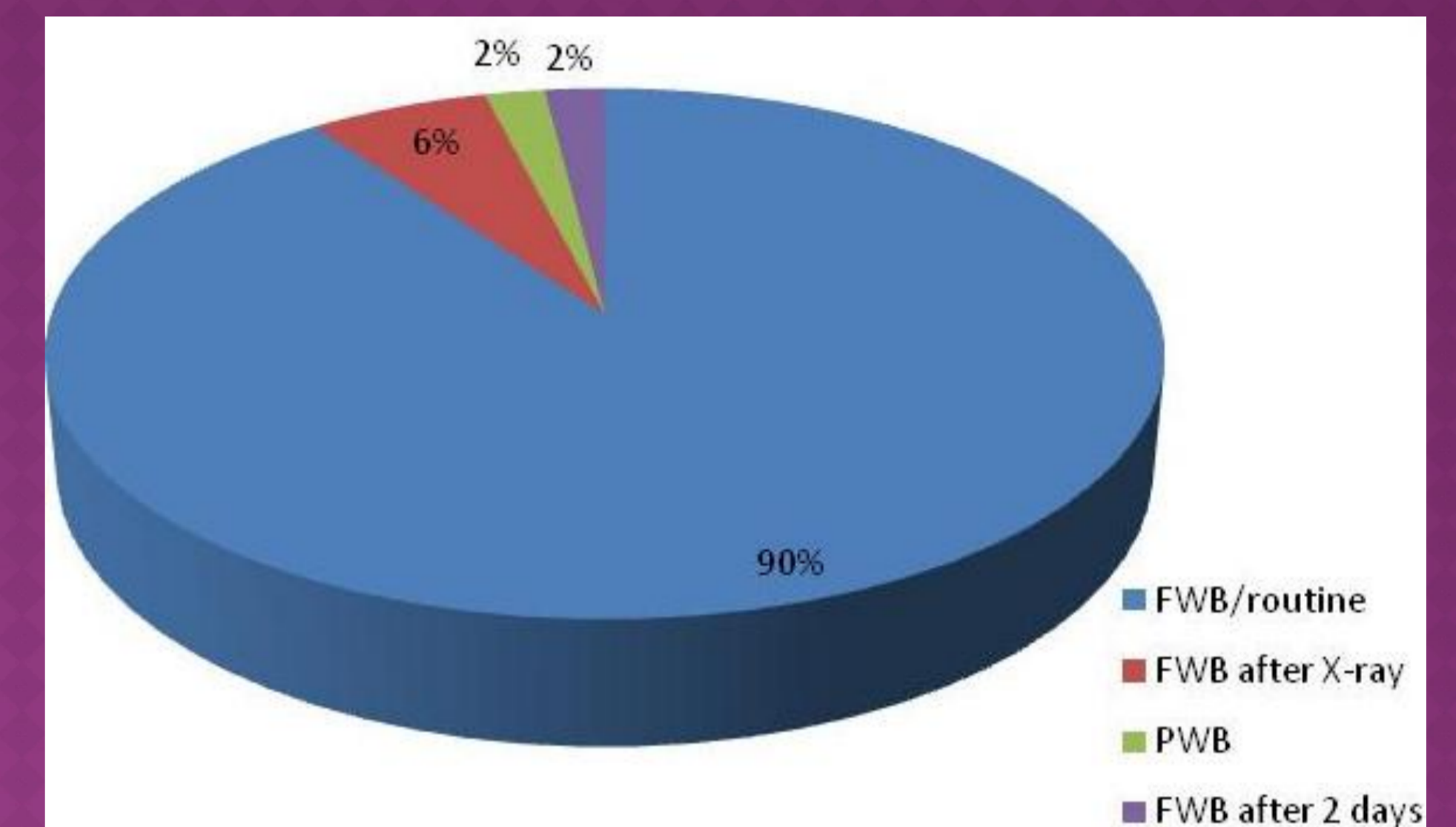
## RESULTS

Mean time to check X-ray 1.68 days (range 1-8), 52% done day 1 and 28% day 2  
3 patients (6%) did not have check X-ray  
No abnormality picked up on any X-ray  
2 patients went on to develop deep infections, 1 dislocated and 4 died

X-ray requesting



Instructions for mobilising



Only 1 documented intra-operative concern

## CONCLUSIONS

- Policy not known or followed
- Surgeons not specifying patients can mobilise without X-rays consistently
- X-rays not picking up abnormalities

## INTERVENTION

- Audit presented at local audit meeting with proposed new guidelines encompassing all fractured neck of femur surgery
- Recommended to continue to do check X-rays despite evidence for quality control/baseline X-ray/training
- Agreed guidelines distributed to wards and included on junior doctors and SpRs induction
- Guideline introduced 3/8/10
- Re-audit planned after 6 months with smaller audit at 2 months to check progress

## CLOSING THE LOOP

### Interim Audit at Two Months

Standards as before but conforming to new guidelines  
30 patients undergoing any type of fractured neck of femur surgery sampled and results analysed as before

- 17 hemiarthroplasties 27/29 patients had appropriately
  - 7 DHS
  - 2 cannulated screws
  - 2 long IM nails
  - 3 short IM nails
  - 1 THR (excluded as not in protocol)
- Mean time to check X-ray 3.8 days (range 1-9)  
1 patient asked not to mobilise before X-ray due to concerns  
No implant related complications, 3 died

## AGREED GUIDELINE

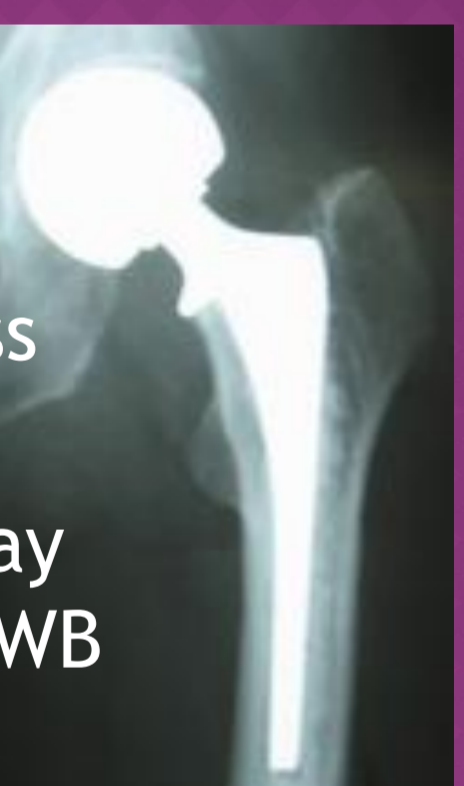
### Hemiarthroplasties

Check X-rays after DAY 3

Mobilise FWB from day 1 without a check X-ray unless otherwise stated by the operating surgeon

Intra-operative concerns clearly documented and X-ray then DAY 1, or as soon as possible, and pt to remain NWB till reviewed

Check bloods DAY 1



### DHS/Short IM nail/Cannulated Screws

Check X-rays will NOT be routinely performed unless otherwise stated by the operating surgeon

Pts to mobilise as per the operating surgeon's specific instructions

Check bloods DAY 1



### Long IM nail

Check X-rays after DAY 3

Pts to mobilise as per the operating surgeon's specific instructions

Check bloods will be done DAY 1



	Initial Audit	Interim Audit
X-ray request for DI	34%	3.4%
X-ray request unspecified/per protocol	58%	55.2%
X-ray not requested	8%	41.4%
FWB as able/routine	90%	79.3%
Not to WB till X-ray	6%	3.5%
PWB/TWB	2%	13.3%
FWB after 2 days	2%	0%
Compliance with protocol	6%	79.3%