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## The Use of Localisation Markers in Plain Radiography Foreign Body Detection

G McGeough<sup>1</sup>, D Jackson<sup>2</sup> & R Pearson<sup>3</sup>

1. ST1 Clinical Radiology, Ninewells Hospital, Tayside
2. FY2 Resident Doctor, Murray Royal Hospital, Tayside
3. Consultant Radiologist, Perth Royal Infirmary, Tayside



### INTRODUCTION

Plain radiography is a valuable diagnostic tool in the detection of soft tissue foreign bodies. However, features of soft tissue penetration and residual foreign body material may be subtle so rely on a carefully trained eye for detection.

Localisation markers (LMs) in plain radiography describe radiopaque fiducials which act as a visual aid for radiologists to primarily identify any subtle signs of soft tissue injury, but also add weight to the clinical relevance of non-specific findings which may lack clinical consequence if not directly considered in relation to the foreign body investigation.

### AIM

The primary aim of this audit was to optimise patient care through a multi-disciplinary project in the clinical radiology diagnostic service by assessment of compliance with use of LMs in plain radiography foreign body detection.

Additionally, this review aimed to identify any variation in use of LMs across multiple hospital sites in NHS Tayside in order to identify departments which may benefit from targeted intervention to improve consistency of use of LMs in foreign body detection.

### RESULTS

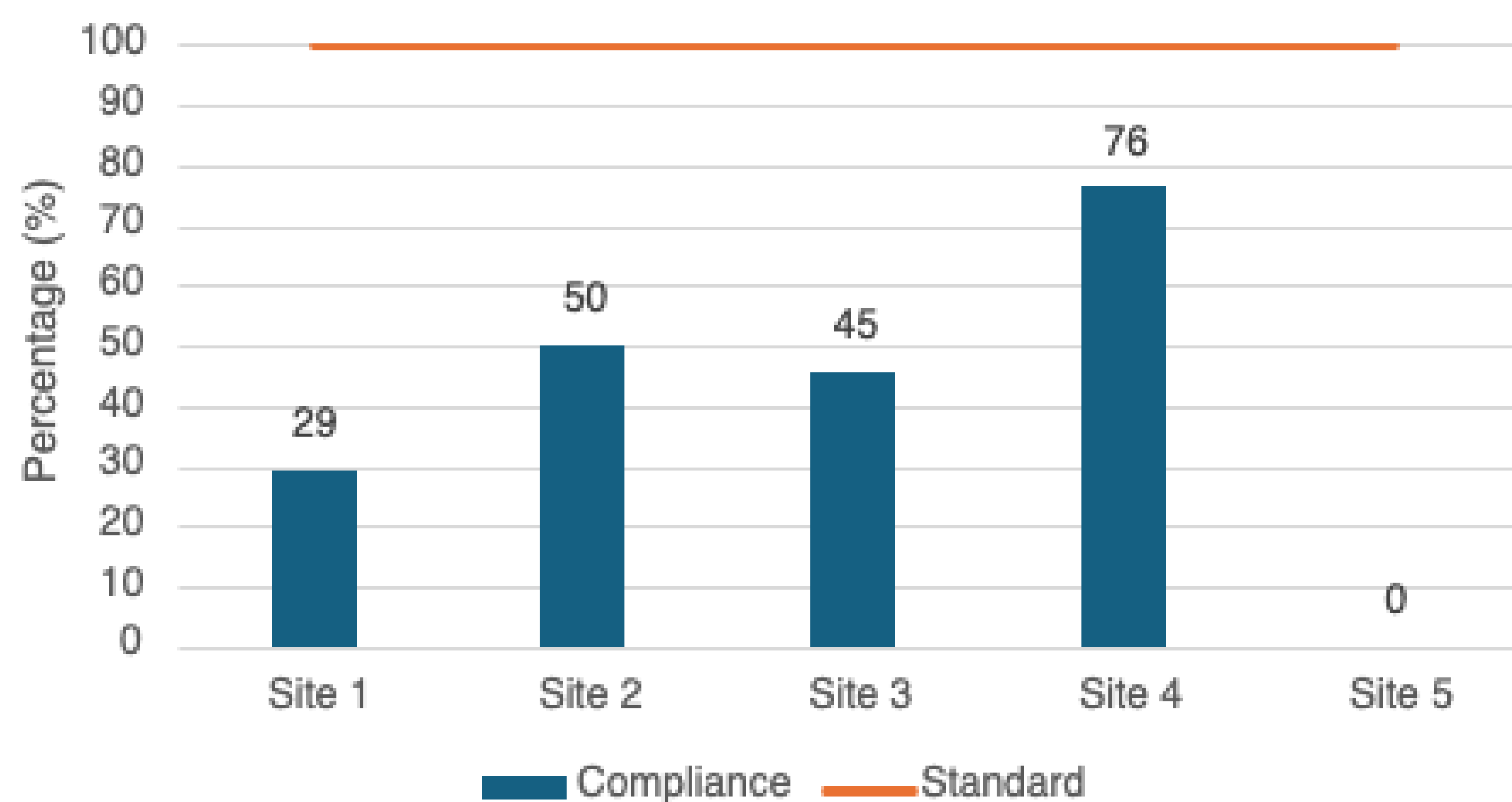
#### DATA COLLECTION

100 most recent studies at time of data collection requested for foreign body detection

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Modalities other than plain radiography (eg ultrasound and computed tomography) excluded (n = 6)

94 plain radiography studies included in review after application of exclusion criteria

#### Compliance with LM across Tayside

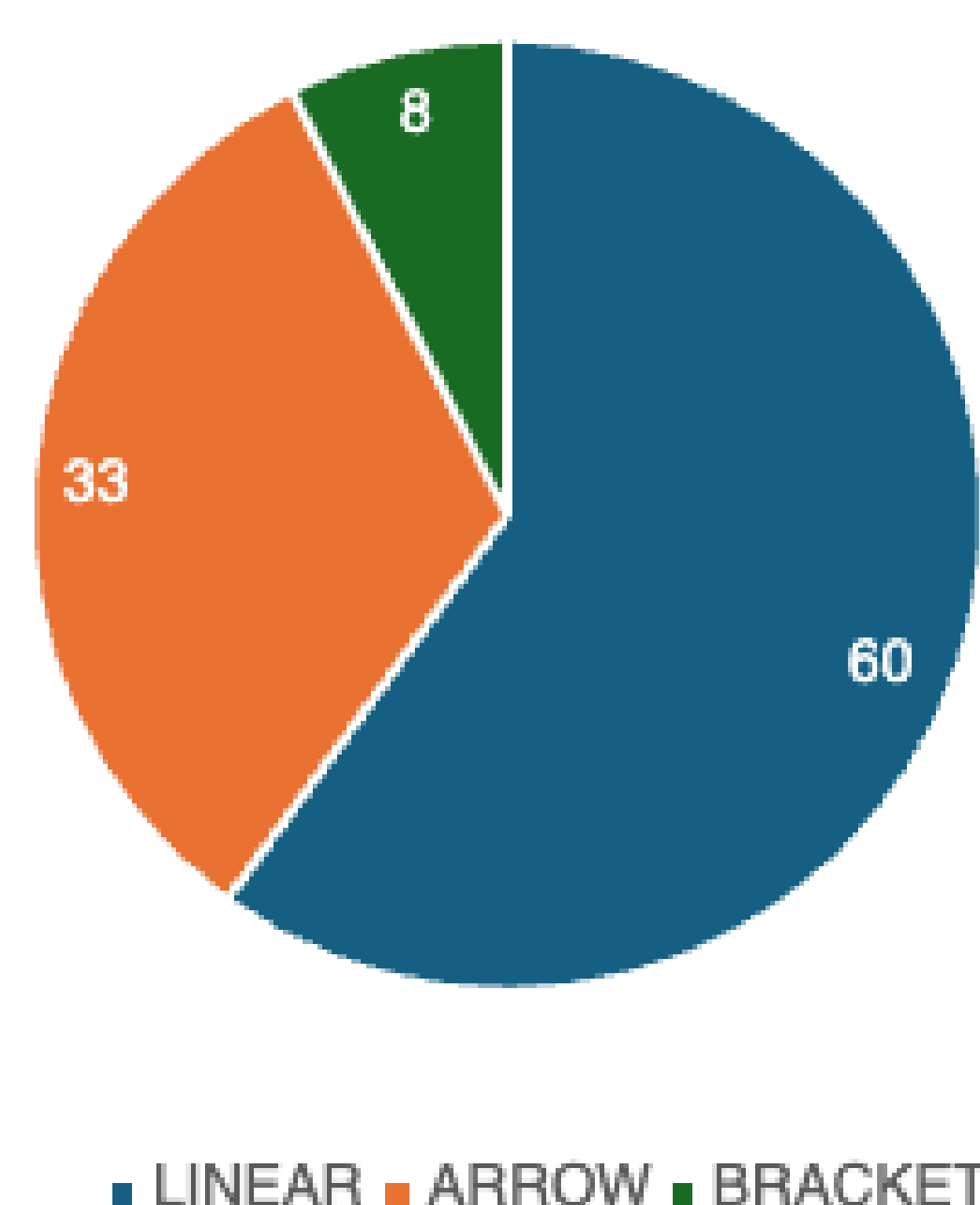


- **Average compliance** with use of LMs in plain film foreign body detection across all NHS Tayside sites = **40%**
- Significantly below the standard which allows **room for improvement** in practice within plain radiography foreign body detection
- Interestingly, the **identification rate of foreign bodies** in this cohort of requests was **less than 20%**

### METHOD

A standard was set of 100% compliance for use of LMs in plain radiography for foreign body detection. A systematic search of CRIS (Computerised Radiology Information System) was undertaken to identify the most recent 100 imaging requests at time of data collection which referenced key words "foreign body" and "foreign bodies" in the referral. All secondary care sites across NHS Tayside were included. All requests for imaging modality other than plain radiography were subsequently excluded. The results were then audited against the standard to assess if the standard was being met and whether there was inter-hospital variation in use of LMs.

#### TYPE OF LM USED



### CONCLUSION

LMs are valuable to the radiologist in the identification of subtle indicators of soft tissue penetration and sites of residual foreign bodies, but also pivotal in assessment of the clinical significance of these radiographic findings. While this review demonstrates that the standard has not been achieved for use of LMs in plain film foreign body detection, the results present an opportunity to improve patient care and clinical outcomes. The investigators intend on presenting the audit findings to relevant multi-disciplinary groups to identify barriers to compliance, promote the merit of use of fiducials and ultimately improve clinical practice and quality of patient care.

### REFERENCES

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### CONTACT INFORMATION

gillian.mcgeough3@nhs.scot