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A Review of Common Errors in Bone Mineral Density Reporting

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Aims: Bone mineral density (BMD) testing is one of the common radiological investigations reported daily across all institutions. The aim of this study is to identify common errors in reporting the BMD, so as to ensure consistency and accuracy in the standard of BMD reporting amongst radiologists.

Methodology: A retrospective review of 2666 BMD tests performed over six-month period between July to December 2017 was performed. Clinical errors in BMD reporting were identified. Of these, errors were further divided into whether they were clinically significant or not. Clinically significant errors were defined as three-fold; errors in transcription of BMD value, incorrect application of the T or Z score in interpretation, and interpretation errors of the BMD value or changes in the BMD value.

Result: A total of 182 reporting errors were identified, of which 112 were clinically significant. This yielded an error rate of 4.3%. The most common errors were in interpretation (n=92). Specifically, errors in interpretation of the significance of interval change of BMD values was the most common (n=35), followed by under-calling the severity of disease (osteoporosis as osteopenia) (n=33). Inaccurate application of the T or Z score represented the smallest proportion of clinically significant errors (n=5).

Conclusion: Human errors in BMD reporting are potentially avoidable and should be reduced. Understanding the different types of errors can assist efforts in preventing them.