

Letters to the editor

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Dental radiography

Retracted Article: Quality assessment grading of radiographs

Sir, since 2001 and the publication of *Guidance notes for dental practitioners on the safe use of x-ray equipment* by the National Radiological Protection Board (NRPB), the recommended method for assessing quality of radiographic imaging has been via a three-grade NRPB system: Grade 1 – ‘Excellent’, Grade 2 – ‘Diagnostically Acceptable’ and Grade 3 – ‘Unacceptable’. This guidance was withdrawn in October 2020 and replaced with an updated second edition which is free to view and download from the College of General Dentistry (CGDent) website.¹

The chief aim of dental radiography is to produce an image of adequate quality for diagnostic purposes while minimising patient dose as far as reasonably possible.² Measuring the quality of radiographs compared with NRPB guidelines is a common clinical audit performed across primary and secondary care and is a useful tool to help improve personal practice or check if the required standard is being met.² Public Health England (PHE) previously recommend certain targets – eg >70% Grade 1 and <10% Grade 3.²

A move away from traditional film-based imaging towards digital imaging systems has removed the need for chemical processing, a major source of reduced image quality.² As such, CGDent and PHE now recommend a two-point grading scale, where images are recorded as either ‘diagnostically acceptable’ (‘A’) or ‘not acceptable’ (‘NA’) (see Table 1).²

An important point to note is the allowance for differentiation between digital and film imaging in the recommended targets when performing clinical audit. The new guidance details clearly defined elements of image quality analysis, quality assurance audits and image quality rating, of which all practitioners should be aware going forwards.

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References

1. College of General Dentistry. *Guidance Notes for Dental Practitioners on the Safe Use of X-ray Equipment*. 2nd ed. 2020. Available at: <https://cgdent.uk/safe-use-of-x-ray-equipment/> (accessed January 2023).
2. Horner K, Eaton K A (eds). 9.2 Ideas for audit – developing local guidelines. In *Selection Criteria for Dental Radiography*. 3rd ed. London: Faculty of General Dental Practice (UK), 2018. Available at: <https://cgdent.uk/wp-content/uploads/2021/08/FGDP-SCDR-ALL-Web.pdf> (accessed January 2023).

<https://doi.org/10.1038/s41415-023-5441-5>

Antimicrobial resistance

Phenoxymethylpenicillin

Sir, the recent *British Dental Journal* Upfront article¹ highlighted the importance of a whole team approach to combatting antimicrobial resistance, with a range of excellent resources to refer to.

With regards to the SDCEP publication² that was referred to, this was updated in June 2021 and stated:

In October 2020, the Scottish Antimicrobial Prescribing Group (SAPG) and its dental sub-group published a statement on the management of acute dento-alveolar infections. The SAPG statement reiterates that antibiotic therapy is only appropriate if immediate drainage is not achieved via local measures or where there is evidence of spreading infection or systemic involvement. When an antibiotic is unavoidable, Phenoxymethylpenicillin is now recommended as the preferred first line antibiotic. This is due to its narrower spectrum of activity, which is less likely to drive antimicrobial resistance.

In a recent audit across our four dental education facilities, we noted that dentists are often prescribing Amoxicillin as first line ahead of Phenoxymethylpenicillin for dentoalveolar infections. As stated in the SDCEP document, dental abscesses are usually infected with viridans *Streptococcus spp.* or gram-negative organisms, so utilising Phenoxymethylpenicillin as first line antibiotic reduces the risk of antibiotic resistance by narrowing the spectrum.

As we were unable to extract any local NHS dental prescribing data to see whether this pattern was specific to our clinics, we looked at antibiotic items dispensed by Cornish community pharmacies against dental prescriptions (data from NHS Cornwall and Isles of Scilly prescribing and medicines optimisation ICB). We found that the pattern of prescribing for dentistry across

Table 1 Subjective image quality ratings of dental radiographs and CBCT images²

Quality rating	Basis	Target	
		Digital imaging	Film imaging
Diagnostically acceptable (‘A’)	No errors or minimal errors in either patient preparation, exposure, positioning, image (receptor) processing or image reconstruction and of sufficient image quality to answer the clinical question	Not less than 95%	Not less than 90%
Diagnostically not acceptable (‘NA’)	Errors in either patient preparation, exposure, positioning, image (receptor) processing or image reconstruction which render the image diagnostically unacceptable	Not greater than 5%	Not greater than 10%