

An Audit on the Quality of Pre-Operative Intra-Oral Digital Radiographs Taken for Dental Extractions in a General Practice Setting

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Abstract : Background: Pre-operative radiographs facilitate assessment and treatment planning in minor oral surgery. Quality assurance for dental radiography advocates the As Low As Reasonably Achievable (ALARA) principle in collecting accurate diagnostic information. Aims: To audit the quality of digital intraoral periapicals (IOPAs) taken prior to dental extractions in a metropolitan general dental practice setting. Standards: The National Radiological Protection Board (NRPB) guidance outlines three grades of radiograph quality: excellent (Grade 1 > 70% of total exposures), diagnostically acceptable (Grade 2 <20%), and unacceptable (Grade 3 <10%). Methodology: A study of pre-operative radiographs taken prior to dental extractions across 12 private general dental practices in a large metropolitan area by 44 practitioners. A total of 725 extractions were assessed, allowing 258 IOPAs to be reviewed in one audit cycle. Results: First cycle: Of 258 IOPAs: 223(86.4%) scored Grade 1, 27(10.5%) Grade 2, and 8(3.1%) Grade 3. The standard was met. 35 dental extractions were performed without an available pre-operative radiograph. Action Plan & Recommendations: Results were distributed to all staff and a continuous professional development evening organized to outline recommendations to improve image quality. A second audit cycle is proposed at a six-month interval to review the recommendations and appraise results. Conclusion: The overall standard of radiographs met the published guidelines. A significant improvement in the number of procedures undertaken without pre-operative imaging is expected at a six-month interval period. An investigation into undiagnostic imaging and associated adverse patient outcomes is being considered. Maintenance of the standards achieved is predicted in the second audit cycle to ensure consistent high quality imaging.

Keywords : audit, oral radiology, oral surgery, periapical radiographs, quality assurance

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