

## Snap, send & screen

Validity and reliability of remote dental screening of different dental professionals using a store-and-forward telehealth model

*Br Dent J* 2016; **221**: 411-414; <http://dx.doi.org/10.1038/sj.bdj.2016.733>

Regular dental screening is important for the prevention, diagnosis and early treatment of dental caries. Efficient and effective screening might also optimise the use of limited resources, improve cost-effectiveness and reduce continued oral health disparities. Clinical examination methods have traditionally been used for caries screening. However, there is a growing interest from dental care professionals in using telehealth with digital imaging as a possible alternative; potentially improving early detection, improving patients' referrals and avoiding delays in treatment. The aim of this *BDJ* paper was to compare the validity and reliability of intra-oral photographic assessment in screening for dental caries between different levels of dental practitioners and against a benchmark expert panel assessment.

This retrospective descriptive study included intra-oral photographic records of 126 children taken on a DSLR camera. An expert panel of three dental practitioners reviewed all photographs to formulate a standard screening baseline. Two independent, off-site dental professionals (a hygienist/therapist and an internationally-trained dentist) then evaluated the images using web-based data and an image-viewing app built upon the Remote-i system. Fifteen percent of the intraoral photographs were re-graded at least 4 weeks after the initial scoring. The oral health assessment report were submitted and compared with the benchmark panel assessments.

All intraoral photographs were gradable, however, 5.4% of the individual teeth were scored as 'unrated' by the off-site screeners. The inter-examiner agreement between the benchmark panel and the off-site screeners was high (kappa score: 0.82–0.88). The intra-examiner agreement was similar. Across all the screeners and examination methods, the specificity and sensitivity were also high (96-97% and 81-89% respectively). The authors concluded that screeners appeared to be consistent in the way they identified caries and that photographic assessment by either a

dentist or hygienist/therapist is comparable to a benchmark expert panel assessment.

In the context of a screening program the authors suggested that different members of the dental team, with minimal additional training, have the potential to detect dental caries with equivalent validity and reliability from web-based presented images. This might offer economic benefits and may increase the capacity to care for those who have no access due to distance or social exclusion.

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