

## A retrospective investigation of the oral health records of a cohort of preschool children who received extractions under general anaesthesia including cost analysis of treatment

**Précis:** Over a two-year period, a considerable number of preschool children required dental extractions under general anaesthesia, with economically-disadvantaged children at a greater risk of requiring treatment. Children who underwent extractions under general anaesthesia at an early age demonstrated poor oral health into adolescence as confirmed by a 10-year follow-up. A nationally-structured prevention programme targeting preschool children is necessary in order to lower caries levels and reduce costs.

### Abstract

Internationally, a considerable proportion of children aged five years and younger require extraction of teeth due to dental caries and frequently dental general anaesthesia (DGA) is the treatment of choice.

**Aims:** To investigate the records of a cohort of preschool children (aged five years and younger) referred to the public dental service provided at Cork University Hospital (CUH), Cork, Ireland, for extractions under DGA between the years 2000 and 2002. To determine the characteristics of the sample: disadvantage; the presence of a significant medical history; and, fluoride status. To establish the pattern of appointments and care, before, during and after DGA, and the pattern of dental treatment required up to sixth class (aged 11 to 12 years).

**Methods:** A retrospective review of dental records of a cohort of preschool-aged children referred for DGA in CUH during the years 2000-2002 was completed. Demographic and clinical data were collated and analysed using Statistical Packages for Social Sciences (SPSS). Costs were provided by CUH and the Health Service Executive (HSE). Data on costs relating to preventive programmes were obtained from information presented in the Irish Oral Health Services Guideline Initiative 2009.<sup>1</sup>

**Results:** A total of 347 children were included with a median age of four years and a range of one to five years. Children with a disadvantage were more likely to require extractions under DGA than their counterparts (50%, n=175). In total, 73% (n=253)

of patients had a fluoridated water supply and 91% (n=316) had no adverse medical history. For 88% (n=306), their first dental visit was an emergency appointment. The primary indication for DGA was treatment of dental caries. A recall appointment was provided for 18% (n=63). One-quarter (n=86) required an extraction, antibiotic or referral for a second DGA at their first visit following DGA. In first class, referral for a second DGA or extraction under local anaesthetic (LA) was required for 23% (n=79) of patients. Over 60% (n=211) required either an extraction or a restoration in third class. In excess of 20% (n=69) of patients did not attend the sixth class dental inspection, the final assessment appointment in the public services.

**Conclusions:** A considerable number of preschool children require extractions under DGA due to dental caries. The results of this study indicate that such children progress to adolescence with poor oral health, as evidenced by the need for further restorations, extractions and repeat DGA. The average cost of DGA was €819 per child. This figure has been shown to be as much as eight times the cost of a preventive/oral health promotion programme operating within a similar cohort. An integrated preventive programme targeting preschool-aged children should be considered in attempting to manage the high levels of dental caries within this age group.

**Keywords:** child; dental caries; dental general anaesthesia; healthcare costs; paediatric dental treatment.

Journal of the Irish Dental Association 2017; 63 (1): 38-44



**Dr Úna McAuliffe**  
BDS (NUI) MFDS (RCSEd) MDPH (NUI)

**Prof. Martin Kinirons**  
BDS (NUI) FDSRCS (ENG) FFDRCS (IRL) PhD (QUB)

**Dr Noel Woods**  
PhD MATLHE MA (Economics) BA

**Dr Máiréad Harding**  
BDS (NUI) MFGDP (UK) MPDH PgDipTLHE PhD (NUI)

### Corresponding author:

**Dr Úna McAuliffe** BDS (NUI) MFDS (RCSEd)  
Oral Health and Development Unit,  
Cork University Dental School and Hospital, University College Cork