

## IN BRIEF

- The records of 677 children who regularly attended their GDP were examined.
- 80% of carious primary teeth (restored or not) exfoliated without causing pain.
- Increased levels of restorative care were not associated with fewer episodes of pain.
- The BSPD guidance on the care of carious primary molars may be based on insufficient evidence.
- In the Northwest, GDPs do not follow the BSPD policy document as it applies to the care of carious primary molars

## Does the dental profession know how to care for the primary dentition?

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Across the UK many thousands of young children regularly attend the GDS for routine dental care. Once in the dental surgery the same story is repeated countless times – preventive advice is delivered, reassurance given, caries is treated and the case notes are written up by the dentist. The whole interaction is a largely unremarkable event and is accepted by patient, parent and dentist. The records of all these individual clinical episodes remain within each practice and until a patient returns for further care can expect to lay undisturbed.

For 677 children in the North West born between 1984 and 1985, who regularly attended their dentist and in addition had approximal caries in their primary teeth, the dental records were not allowed to remain unseen, but instead were retrieved and carefully analysed. In total 50 GDPs agreed to participate in the study. The participating GDPs had no idea when they recorded their clinical notes that their clinical care would one day be subject to scrutiny by independent researchers and could not have foreseen that their records would reveal surprising findings. It is most unlikely that they would have predicted that their clinical recordings, when viewed collectively, would raise fundamental questions about restorative treatment for

children with caries in their primary dentition.

The records showed that nearly half of the children, (48%), had experienced at least one episode of pain, and that the more teeth affected by decay, the more likely it was that pain was recorded. Levels of caries experience were also associ-

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ated with an increased likelihood of extraction due to pain or sepsis and the need for antibiotic prescription. Intuitively these findings are not surprising. More disturbing perhaps, was the discovery that increased levels of restorative care in children were not associated with fewer episodes of pain or the need for extraction.<sup>1</sup> The most remarkable finding to emerge from these data is that the majority of primary teeth that experienced caries, filled or unfilled, exfoliated painlessly. Over 80% of primary teeth with

caries were lost in this way, suggesting that whatever is done (or not done) to carious primary teeth, general dental practitioners keep the majority of them pain free.<sup>2</sup>

The data unlocked from these dental notes tell a story of how dental caries in the primary dentition is dealt with by NHS GDPs in the North West of England, but the results are of course open to challenge because they were not collected according to standardised criteria. Nevertheless there is sufficient information available to raise questions about how to approach the treatment of children with carious primary teeth. Inevitably, the study makes one question the approach advocated by the British Society of Paediatric Dentistry<sup>3</sup> and it makes one wonder if these guidelines have much relevance at all to the world of NHS primary dental care.

It would appear that GDPs have learned experientially how to deal with the problem of caries in the primary dentition. In a natural experiment, repeated over the years in dental practices, GDPs have discovered when to, and more importantly when not to, undertake restorative interventions. This approach is largely successful, as 80% of carious primary molars exfoliate painlessly whether or not they are filled. At the same time paediatric dental specialists,

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unhindered by the demands of NHS general dental practice, have advocated the adoption of more wide-ranging restorative interventions to treat the carious primary teeth of young children.

The GDP and the specialist approaches to the clinical care of the carious primary dentition are totally different and this has the potential to create professional tensions. There are two important questions which must be answered when considering the divergence of views, namely:-

- i. Are GDPs open to challenge if they do not follow the approach advocated by the BSPD?
- ii. Is there a sound evidence base for the BSPD guidelines on restorative care of the primary dentition?

The answer to the first question is possibly 'yes', particularly if an expert opinion is offered by a specialist in paediatric dentistry. With regard to the second question, there must be considerable doubt. The stainless steel pre-formed crown is the main clinical intervention suggested by the BSPD guidelines for the restoration of primary molars with extensive caries, yet when one examines the scientific rationale for this advice it would appear to be rather weak.

The BSPD policy document quotes four papers, all of which have simply compared re-treatment rates for preformed stainless steel crowns and amalgam restorations. One paper, undertaken 21 years ago reported that over 10% of stainless steel crowns required further treatment,<sup>4</sup> another reported on a study undertaken by a group based in Germany, where dental service delivery is quite different to that offered by the National Health Service.<sup>5</sup> One reported the results achieved by a sole specialist paediatric dental practitioner who found that the estimated median survival time of class 2 amalgams in primary molars was over 7.5 years, a figure similar to that achieved with stainless steel crowns,<sup>6</sup> and the final paper, published in 1975, stated that it was not possible to conclude that crowns were superior to amalgam, in terms of longevity.<sup>7</sup>

Whilst it is entirely possible that stainless steel crowns are the ideal restoration for primary molars with extensive caries, it is difficult to see how this conclusion can be drawn from the available evidence. More importantly, there have been no studies that have compared the outcomes of stainless steel crowns and amalgam and a non-restorative approach to caries management. More recent evidence of the possible benefits of stainless steel crowns over amalgam has emerged from a systematic review of the results of 10 studies undertaken between 1972 and 2000,<sup>8</sup> but doubts have been cast about

the methodology used in this review.<sup>9</sup> Comparison of the relative success of different approaches is very difficult, as different outcome measures have been used. The studies referenced in the BSPD guidelines have tended to use five-year survival rates of restorations. The relevance of this outcome measure must be called into question when considering temporary structures like primary teeth. Surely the consequences of the disease and/or treatment in terms of pain, impact on

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family life and the psychological effect on the child are more important.

The comprehensive restorative approach for primary teeth has been imported from North America, where it was developed according to the needs of a private healthcare system. This approach is not underpinned by a comprehensive evidence base. NHS GDPs in the North West of England, knowingly or otherwise, have rejected this complex restorative approach to the dental care of young children.

The difference between the GDP and the specialist view may be related to differing professional expectations. On the one hand GDPs are driven by the wish to provide appropriate, continuing and most importantly, holistic care for the children that they treat. The aim is to provide a level of dental care that will take a child through the primary and mixed dentition phase. Along the way, a sensible balance has to be struck between decisions to intervene restoratively and the desire to ensure the child is free from pain and discomfort, simultaneously avoiding dentally-related fear and anxiety due to traumatic episodes of treatment. This approach accepts that it is appropriate for some children to have unrestored carious primary teeth, because they are temporary structures, and overall, the child may benefit from less rather than more restorative care, particularly if the child is anxious about

dental treatment. This approach puts the child before the tooth.

Most specialist paediatric dentists, on the other hand, do not have a long term continuing care responsibility, as their role is to deliver episodes of care to children referred by GDPs. This secondary care role understandably has the effect of elevating the status of the 'immediate' dental problem, with its assiduous treatment being paramount. The dental profession, and each clinical specialty within it, has its own aesthetic. Dentists admire perfectly executed restorative work and untreated caries can offend this aesthetic sensibility. Within this paradigm, non-intervention is seen by many paediatric specialists as complacency, or at worst, neglect. However, if we are to ensure that the primary dentition is cared for appropriately, then this ingrained aesthetic, borne of years of training, needs to be set aside and in its place there should be developed a coherent policy for the care of the primary dentition that is based on sound scientifically derived principles.

Since the publication of research work that has raised questions about the dental care of the primary dentition,<sup>1,2,10</sup> the response from GDPs has been muted. Perhaps the results do not come as a surprise to them. A modest number of anecdotal reports from GDPs both supporting and questioning the findings have appeared in the letters to the Editor of the *British Dental Journal*.<sup>11</sup> Perhaps the most astonishing response has come from the Consultants in Paediatric Dentistry Group which concludes that when prevention fails in young children, effective treatment interventions should be available including the facility to "refer young children with caries to spe-

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cialist centres".<sup>12</sup> It is difficult to understand this approach, unless we accept the view that caries in the primary dentition is somehow 'special' and its management is beyond the scope of the general dental practitioner. From a pragmatic viewpoint the prospect of delivering the specialist restorative approach, as set out in the BSPD policy document, to the five million

children aged under 12 years who are currently registered in the GDS is alarming. Quite apart from the questions of the cost of such a service, and the workforce needed to deliver it, there is something vaguely disquieting about an approach which has a questionable evidence base and which has been rejected by the majority of the dental profession.

Ultimately what matters are the best interests of children. Do we actually know the best way to care for children with decay in the primary dentition? If we do not then we should ask ourselves which approach is more reasonable, the less interventive approach practiced by the majority of GDPs or referral that will allow the delivery of 'ideal' specialist paediatric dental treatment despite growing concerns over the appropriateness, logistics and costs of such an approach?

Paediatric dental care is at a crossroads – ethical practice and clinical gov-

ernance demand that treatment is only provided if it produces a benefit. We are now in a world where 'expert opinion' is no longer regarded as an adequate platform upon which to base clinical and policy decisions. Increasingly, the profession needs to develop a credible evidence base for the work clinicians undertake, irrespective of whether they are generalists or specialists. A debate on the care of the carious primary dentition has begun and with it an opportunity has been presented for the dental profession collectively to begin to put the care of the primary dentition on a sound scientific footing.

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