

Delivering effective oral health messages to parents: smear, supervise, and spit

Deborah Hall, Senior Lecturer and Health Visiting Lead, Teesside University.

Laura Hall, Undergraduate Dental Student, University of Leeds.

Introduction

Within the United Kingdom, poor oral health in our children has become a major public health issue; currently, almost 25% of five year olds in England suffer with tooth decay (Local Government Association, 2014; Public Health England (PHE),2016). Although children's oral health has improved over the past couple of decades, there are now much higher numbers of children being admitted to hospital for extraction of teeth due to caries under general anaesthetic (Moles and Ashley, 2009, cited in Olley *et al.*, 2011; PHE, 2014a). In the ten years to 2006, statistics indicate a 66% rise, which then also exposes children to the added associated risks, in terms of both morbidity and mortality (Olley *et al.*, 2011). The World Health Organization (WHO, 2003) considers that oral health examination is key to the detection of diseases, including microbial infections, immune disorders, injuries, and oral cancer. Tooth decay is the most common oral disease affecting children (PHE, 2014a), and it is also the most common reason for admission to hospital for children aged 5 to 9 years (Faculty of Dental Surgery, 2015). Additionally, PHE (2014a) state that dental treatment is a significant cost, with the NHS in England spending £3.4 billion per year on dental care.

Despite these stark statistics, oral diseases are largely preventable, and they can often be avoided by sustained changes in behaviour (Health Development Agency, 2001; PHE, 2014a). Of course, in order to achieve these changes in behaviour, there is also a requirement for parents and children to receive simple and consistent messages, and to be motivated to act upon these messages. Further, these improvements also need to be continued as part of a routine daily activity for life. Potentially, then, the promotion of good oral health in early childhood will also help to ensure that the risk of decay in permanent adult teeth is also reduced (Faculty of Dental Surgery, 2015).

Health care professionals

Dental Practice

The National Institute of Health and Care Excellence (NICE, 2014) acknowledge that there are many reasons why some people do not engage positively with health care services, and this includes a low uptake of registration and attendance with a dentist. For some parents, there can be a mistrust of services being offered for themselves and their children. For others, there exists a lack of awareness that young children should be registered with a dentist, and at least from their first tooth erupting (NICE, 2014). *Dental Recall* (2004) and the Faculty of Dental Surgery (2015), for example, suggest that young children should be reviewed at least annually; this is recognised as an ideal opportunity to deliver and reinforce preventive advice and to raise awareness of the importance of good life-long oral health. Of course, within this environment, there is also the opportunity for parents and children to learn how to effectively and efficiently brush their teeth with members of the dental team.

A dental system focused on prevention could save the NHS eight times the cost of curative treatments (Sharon *et al.*, 2005, cited in Olley *et al.*, 2011). In contrast to this message, the Faculty of Dental Surgery (2015) highlight that more than 30% of children in England between 2012 and 2014 did not see a dentist, thereby missing the opportunity for valuable health care support within the dental team.

Health visitors

For families in UK, health visitors provide oral health improvement opportunities within universal service provision (*Health Child Programme*, 2009; PHE, 2014a). It is also recognised that the foundations of oral health care begins at home, and often before other health care professionals become involved with children and their parents (*Health Visitor Implementation Plan*, 2011; Tillen, 2013). Further, PHE (2014a) supports training for health visitors related about how best to advise parents of young children about starting to brush when the first teeth erupt. It is vital, therefore, that health visitors are enabled to deliver oral health information, support and advice established within the most current evidence-base (Nursing and Midwifery Council (NMC), 2004; NMC, 2015; Tillen, 2013).

Developing an early foundation for health with families is advocated more generally, too, and is seem to impact positively on health inequalities (*Fairer Society, Healthy Lives*, 2010; NMC, 2004). As health visiting services begin to transfer within the commissioning environment, these 'difficult to measure' public health services, nevertheless, remain integral to local programmes. Importantly, oral health improvement is embedded within such contracting decisions (Local Government Association, 2014; PHE, 2014a).

Working together

Integration and collaboration is viewed as a vital element of health care provision (*A High Quality Workforce*, 2008). Across a number of health, education and social care services, the establishment of closer relationships has been achieved in recent decades (*Designed to Smile*, 2016; *Families in the Foundation Years*, 2011; DH, 2007). However, there still remain opportunities within the realm of oral health where relationship building between services could enhance improvements in future oral health for children and their families (Sheiham, 2000; Tillen, 2013).

Oral health advice – toothpaste and tooth brushing

Toothpaste

In recent years, there has been a proliferation of oral health advice particularly targeted towards parents of babies and young children (British Dental Health Foundation, 2015; Faculty of Dental Surgery, 2015; Local Government Association, 2014; PHE, 2014a; PHE, 2014b). However, advice is rarely wholly consistent and parents could be forgiven in becoming confused by the main messages. As an example, the optimum concentration of fluoride in toothpaste is suggested to be 1,350-1,500 parts per million fluoride – ppmF (iHV, 2015; NHS Choices, 2013; PHE, 2014b), and this is often referred to as family toothpaste. However, a toothpaste fluoride level of at least 1000ppm is also espoused within these guidance materials. To further add to the lack of clarity for parents, differences between fluoride levels is mentioned in relation to the age of the child, with three years of age being

a usual benchmark for the use of higher levels of fluoride (iHV, 2015; NHS Choices, 2013; PHE, 2014b).

Also, the amount of toothpaste recommended for use by children differs between these two age groups. For younger toddlers and children, a smear is recommended, while a pea sized amount is recommended for those children aged three and older (*Healthy Child programme*, 2009; iHV, 2014; iHV, 2015; NHS Choices, 2013; PHE, 2014b). Additional guidance, which is also regarding fluoride levels, talks about making use of toothpaste with higher levels as important in controlling caries incidence (PHE, 2014a). Paradoxically, too, lower levels of fluoride in toothpaste are also espoused where the child has no evidence of tooth decay (NHS Choices, 2013). As a message, then, the recommended fluoride amount and concentration, is not fully available as a simple, easily recalled, communication for parents. [See diagram, below](#)

Spitting out of toothpaste, and not swallowing toothpaste or rinsing with water also appear as dominant messages within oral health guidance materials (iHV, 2014; iHV, 2015; British Dental Health Foundation, 2015; iHV, 2015; NHS Choices, 2013; PHE, 2014b). Within the oral health guidance, these messages express the importance of fluoride remaining in the mouth for longer and therefore acting as a means of preventing, controlling and arresting caries (British Dental Health Foundation, 2015; Carter, 2014; PHE, 2014b).

Tooth brushing

The act of tooth brushing differs from the use of toothpaste, as the action of tooth brushing is stated to reduce the inflammatory response of the gingivae by physically removing plaque formation (PHE, 2014b). Tooth brushing is predominantly recommended from when a child's first primary tooth erupts (British Dental Health Foundation, 2015; NHS Choices, 2013; PHE, 2014b). Generally, all of the guidance recommends a twice daily tooth brushing routine (British Dental Health Foundation, 2015; Local Government Association, 2014; PHE, 2014a; PHE, 2014b; NHS Choices, 2013). Each of these bodies also recommend bedtime tooth brushing and at least once more each day as part of a child's oral health routine. Further, a two minute tooth brushing routine appears as a consistent message within this literature. PHE (2014b) also suggest the use of a small headed medium textured toothbrush.

In considering tooth brushing further, the guidance acknowledges that babies and toddlers will require an adult not only to supervise, but also to help with the tooth brushing activity with a child for some years; some of the guidance mentions a specific age where children might not need this additional support, and this varies from age 6 and to age 8 years (British Dental Health Foundation, 2015; Faculty of Dental Surgery, 2015; iHV, 2014; iHV, 2015; NHS Choices, 2013; PHE, 2014b). However, some of the literature also highlights that a child's level of fine motor ability, for example, in being able to print their name, might be a more accurate sign that they will be able to effectively perform an effective brushing routine (iHV, 2014). In this way, then, a child might then be able to carry out the small, circular movements required for cleaning each tooth (iHV, 2014; Tillen, 2013).

The British Dental Health Foundation (2015) suggest that a parent might find it easier to stand or sit behind their child, cradling the child's chin in their hand so that they can reach the top and bottom teeth more easily. Being in front of a mirror, too, could further aid the

process. However, in standing behind a child, the parent may have difficulty in fully accessing all teeth (such as the molars). It might, therefore, be more suitable to be positioned in front of the child while brushing their teeth; in this way, a more effective and systematic approach can be completed. In addition, NHS Choices (2013) also suggests that an older child's tooth brushing technique should be regularly checked once they have established a routine of their own, to ensure that it is still being carried out correctly.

Providing oral health advice

It is well-recognised that children's oral health can be enhanced with appropriate simple information and support to parents (Faculty of Dental Surgery, 2015; PHE, 2014a; Voogd, 2014). Health visitors are ideally placed in delivering this vital information from the first contact with parents, and in continuing to provide simple, consistent, advice to parents in subsequent interactions. In this way, health visitors can ensure that a twice-daily tooth brushing habit becomes an established part of a child's bedtime routine, integrating tooth brushing within home activities, that in turn might also increase parenting skills, self-efficacy and confidence (PHE, 2014a). Ottley (2002), too, suggests that simple oral health advice actually works. Further, she proposes that any verbal or written information must be kept as simple as possible if it is to be of value to those who need it most; as a targeted approach, she also recommends that only key messages should be given so that people don't feel overwhelmed with information.

Challenges

Sweets and sugars

A study that looked at the high referrals for children's extractions under general anaesthetic pointed out that parents found challenges and demands from their children difficult to overcome (Olley *et al.*, 2011); parents mentioned being unable to refuse their children sweets. Other literature, too, highlights patterns of children being offered drinks in bottles or with teats, and this further impacts negatively on oral health, and is often described as an 'acid attack' (DH, 2009; Faculty of Dental Surgery, 2015; iHV, 2015). As a guide, babies over six months of age should be offered a drinking cup, while the use of bottles should also be discouraged by the time a child reaches a year of age (DH, 2009; Faculty of Dental Surgery, 2015).

Sugary drinks and sweet snacks seem to be regular treats that often emerge as demands from children; conversely, they are also offered as rewards by parents, too. Despite a wealth of evidence that supports the limited use of these drinks and snacks, there appears to be little evidence that their use is successfully being restricted (British Dental Health Foundation, 2015; Carter, 2014; Olley *et al.*, 2011; PHE, 2014b; Voogd, 2014).

To further challenge parents and children, there is also increasing evidence that the pattern of eating that children develop can additionally add to their risk of poor oral health (British Dental Health Foundation, 2015; Carter, 2014; PHE, 2014b); PHE (2014b) for example, discourage a pattern of 'grazing', which they highlight as harmful; grazing is where small, regular, snacks are consumed, often in addition to meals. The harmful effects of frequently eating, they explain, is due to the resulting differing levels of acid produced orally when

sugars are broken down (demineralisation); instead, PHE (2014b) supports an eating pattern that provides opportunities of a number of hours between meals. In this way, the food chosen as part of a meal, might also include sweets or sugars as a limited, but integral, element of the healthy diet. As such, its negative impact on oral health can be reduced. There is also some evidence that a twice daily, two minute, tooth brushing routine can reduce the negative impact of a high sugar diet on tooth enamel (Duggal *et al.*, 2001). Further, these authors also suggest that an effective tooth brushing routine might be a more effective solution than having unrealistic expectations in limiting high sugar diets.

Refusal to brush teeth

Olley *et al.* (2011) highlighted that parents voiced difficulties in encouraging their child to brush their teeth and that they also mentioned a lack of understanding of caries prevention. In practice, too, parents can be seen to compromise on some things that they might feel are less imperative than other decisions or demands that they negotiate with their children. A twice daily oral health routine, may well be viewed as a less essential element at times of difficulty or vulnerability in meeting the other demands of family life.

Fluoridation of water

The lack of inclusion of fluoride in all available drinking water remains a public health challenge (Faculty of Dental Surgery, 2015; Health Development Agency, 2001; MacRitchie *et al.*, 2012; PHE, 2014a; PHE, 2014b). Despite knowing that fluoridation can aid as a means of positively impacting on oral health inequalities, not only for children, but across populations, too, many local authorities have still to be seen to raise to the challenge of providing this effective option. Currently, figures suggest that only 10% of residents in England have access to an optimum fluoride level for oral health in their drinking water (PHE, 2014b).

Opportunities

Currently, commissioning discussions are taking place across UK; these meetings offer opportunities for health visitors to stress the public health agenda, including oral health messages, with local authority public health colleagues. Meetings also provide a platform for the potential development of policies (NMC, 2004) that might help to shape decisions related to fluoridation of water locally (Faculty of Dental Surgery, 2015; PHE, 2014a). Additionally, local commissioning agreements can sustain the visibility of this public health agenda among health, social care, and educational professionals.

Within dental practice, there are copious examples of dental students working in developing countries (Work the World, 2016). Often, these skilled students also work alongside schools within these, often vulnerable, communities. At such times, they offer oral health advice and dental checks. In the UK, there are instances of dental and other health care professionals working within school environments to provide oral health education (Voogd, 2014; Yusuf *et al.*, 2015). The possibility of developing local relationships with dental practice, or alongside Dental Schools, remains a valuable source for other health care professionals, including health visitors and school nurses. A programme in Wales, for example, that is currently providing two successful elements, one within school and nursery

environments and the other in working with health visitors, is that of *Designed to Smile* (2016).

Elsewhere, too, there are collaborations between health professionals and Local Authorities (Islington Public Health (2014)); targeting deprived areas, particularly, consistent advice related to children's oral health is provided. This key measure is delivered alongside a community-based fluoride varnish programme, and also the distribution of fluoride toothpaste and toothbrushes to vulnerable families.

Collaborations such as these, offer children consistent and additional oral health support and education which, in turn, can be shared with other family members, too, and they're a valuable example of making every contact count (NICE, 2007; NICE, 2011). In the future, the development of new relationships with other people invested in the public health agenda also offers innovative and exciting opportunities for practice. As such, collaborative opportunities can further enhance oral health outcomes.

The early establishment and delivery of simple, achievable oral health messages

Health visitors remain as a constant support for parents and their children; as the only health care professional in a uniquely universal position, they are ideally placed to establish and deliver a simple oral health message from their first contact with their clients. The need to address inequalities in oral health is not the issue; how and when to do so is now the question we should be addressing. There are, of course, challenges in practice, as there are with many public health messages. However, this does not negate the imperative to try (NMC, 2004; NMC, 2015).

A simple oral health message for parents of babies and young children (aged three and under) can be established for practice once the first tooth erupts. The two minute **twice daily** routine (with one of these occasions being before bed) should convey the following essential elements:

- **Smear** family fluoride toothpaste onto a small headed medium textured toothbrush
- Carry out tooth brushing, **supporting** the systematic cleaning routine
- Get the child to **spit** out excess toothpaste, and not to swallow or rinse

In summary, parents of young children should try to establish a two minute twice daily tooth brushing routine with their baby or young child, remembering: smear, support, and spit.

To further aid the twice daily tooth brushing routine, parents should also:

- Register their baby with a dentist, and attend as advised by their dentist
- Offer a healthy diet, with meals taking place three times daily
- Limit sweets and sugary drinks to meal times
- Offer drinking cups from six months and eliminate the use of bottles and teats by one year of age

A simple oral health message for parents of children (aged three and over) can be established for practice. The two minute **twice daily** routine (with one of these occasions being before bed) should convey the following essential elements:

- Use a **pea sized** amount of family fluoride toothpaste on a small headed medium textured toothbrush
- Carry out tooth brushing, **supporting** the systematic cleaning routine
- **Supervise** the child at all times, even when they can begin to brush their teeth
- Get the child to **spit** out excess toothpaste, and not to swallow or rinse

In summary, parents of young children should try to establish a two minute twice daily tooth brushing routine with their child, remembering: pea sized, support, supervise, and spit.

In providing simple, and easily achievable early oral health messages to parents, health visitors and other health care professionals can give well-needed public health advice to parents that will result in improvements in oral health for young children in the short term, and for the longer term, too, by reinforcing the message and routine within family networks. Of course, children and their families will need to have an awareness of the overall oral health information, too. However, in beginning to establish effective relationships with families, health professionals can help to lay a foundation for the development of effective and systematic tooth brushing routines, and this can be reinforced and built upon in subsequent contacts.

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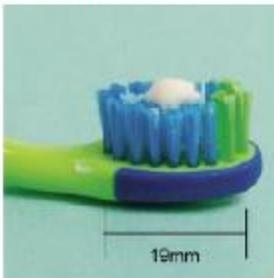
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Children aged under three years should use only a smear of toothpaste.



Children aged three to six years should use only a pea-sized blob of toothpaste.



(PHE, 2014b, 21)