WINSTON CHURCHILL MEMORIAL TRUST

Lift the Lip: an assessment tool for childhood dental decay

Mary Wilson – 2017

Table of Contents

Personal Introduction

I am a dentist working in Wales, specialising in dental public health. I am particularly interested in improving the oral health of young children, as evidence shows that health gains made in early childhood can have significant impact on health over the life course. I applied for a Travelling Fellowship with the Winston Churchill Memorial Trust in 2015, as I wanted to learn about the oral health promotion activities in Australia and New Zealand that maximise the role of non-dental health professionals to promote good oral health to families of young children. In the era of Prudent Healthcare in Wales[1], there is a real focus on using the skills of the workforce most efficiently and effectively, and co-production between service providers and service users. The recent Wellbeing of Future Generations Act 2015[2] in Wales calls upon public sector partners to collaborate for health and well-being, and this multi-disciplinary, preventive approach to health is one that resonates with the aims of my Fellowship.

Harbour Mouth Molars by Regan Gentry, Dunedin New Zealand

Acknowledgements

I am extremely grateful to Winston Churchill Memorial Trust for selecting me to receive a funded Travelling Fellowship in order to research this topic. The advice received during the organisation of my Fellowship was fantastic, and I could not have been better supported whilst embarking on this journey. It was a huge privilege to be awarded the opportunity and receive positive encouragement to explore my ideas. The Fellowship was also supported by the Lloyd George Foundation. I am very thankful for this support.

Thank you to Professor Ivor Chestnutt, Cardiff University, for his encouragement to apply and, on my return, introducing me to the welcoming Welsh Association of Churchill Fellows. Thank you to Postgraduate Dental Education, Wales Deanery and Public Health Wales NHS Trust, who as my employers supported my Fellowship as an opportunity to seek new knowledge to share with my team and wider public health community.

I would like to thank all the individuals in Australia and New Zealand who happily gave time to meet with me and discuss their work. Many of them received an email out of the blue from a stranger in Wales, but went out of the way to put me in contact with individuals and organisations willing to share their experiences. I met with 48 individuals from 23 organisations, universities and government departments. I am extremely grateful for their flexibility to fit around my travel schedule and their kind welcome into their workplaces and cities, as well as their insight and the huge amount of resources that filled my increasingly heavy suitcase!







Executive Summary

Lift the Lip is an oral health assessment tool for use on babies and young children. It requires a visual assessment of the upper anterior teeth particularly, to identify very early signs of, as well as more developed, tooth decay. It is quick to complete, and does not require an oral health expert. Lift the Lip is intended to be delivered in conjunction with promoting oral health to parents/guardians, and encouraging attendance to clinical dental services. Also, parents are encouraged to regularly check their child's teeth themselves at home. The technique is used in other countries, but not yet introduced in the UK. Work to evaluate the use of Lift the Lip highlights the need for good training and close engagement between child health professions and dental services[3, 4, 5].

I successfully applied for a Travelling Fellowship from the Winston Churchill Memorial Trust, and visited Australia and New Zealand in late 2016 to learn about the use of Lift the Lip, as well as other oral health promotion activities that involve professions other than the clinical dental team. In Australia and New Zealand, Lift the Lip has been used for many years and is embedded in the core practice of their child health nurses that have a similar role to health visitors in the UK. Information and resources about the intervention were shared, as well as insight into the barriers and facilitators for introduction. This report describes my Churchill Fellowship and the knowledge gained from the visits with professionals involved in early childhood oral health improvement. I am grateful for their kind welcome and time.

Aims and Objectives of the Churchill Fellowship

1. To explore the scope of oral health promotion activities for the 0-5 year old age group
2. Specifically, to learn how the Lift the Lip programme was established
3. To explore how key stakeholders view the Lift the Lip programme (dental professionals, health professionals expected to 'lift the lip', children and parents, public health bodies)
4. To observe the training requirements for Lift the Lip and how it works in practice
5. To learn what impact oral health promotion programmes are having on childhood dental decay rates and care pathways for treatment
6. To discover the barriers that may be met if similar programmes were developed in the UK, and how these may be overcome
7. To learn about other new programmes and research activities that aim to improve early childhood oral health

Please note: The opinions expressed within this report reflect my personal learning and may not represent those of others.

Background

Dental decay (caries) is a largely preventable disease caused by a combination of sugar consumption and poor oral hygiene. The disease process can begin as soon as baby teeth appear in the mouth, commonly first affecting the upper front teeth. Early childhood caries is a disease which crosses all socioeconomic boundaries, with high prevalence and a significant health burden globally.

There are many positive outcomes of good oral health because it has a direct effect on a child's current and future health. Unfortunately, too many children experience the negative impacts of poor oral health. The immediate impacts of caries are distress, pain and infection, which can affect a child's ability to eat, sleep, learn and socialise[6, 7]. This can have a negative impact on quality of life, affecting daily activities, speech, self-esteem, school attendance and performance[8, 9, 10]. The ability to eat a well-balanced diet, and subsequently growth and development can be affected[11, 12].

Childhood oral health is a predictor of oral health throughout adulthood[13]. The impact of poor oral health increases with age[14], and may affect quality of life[15], social and economic well-being[16], and other health conditions[17, 18].

Investing in early years universal interventions, with additional targeted resource proportionate to need, is cost-effective and essential to ensure a healthy and productive society[19, 20]. A time when there is great potential for action is in the first 1000 days from conception to the second birthday[21], but it is important to continue interventions later in a child's life in order to maintain the gains[18]. Policy and practice should work towards investing in children, with a view to reducing social inequalities for future generations[18].

The National Institute for Health and Care Excellence[22] recommends that health and social care staff working with children at high risk of poor oral health should receive regular training in promoting evidence based oral health. Also, it recommends that practitioners (such as health visitors, social workers, school nurses, and family link workers) ensure they provide oral health improvement programmes in early years settings[23]. The Public Health England Rapid Review to update evidence for the Healthy Child Programme[24] further recommends that local authorities and health and wellbeing commissioning partners should make sure that all contract specifications for early years services should include a requirement to promote oral health and train staff in oral health promotion.

A recent Cochrane review suggests reducing the reliance on dental professionals to deliver interventions, and testing the use of cross-sector multi-disciplinary teams in order to progress to cost-effective and sustainable solutions for promoting child oral health[25]. Integration of oral health promotion into current services depends on engagement, consultation and ownership of the programme implemented. Health promotion programmes that incorporate oral health education may include tailoring information to individual parents, home-based delivery of programme interventions, multiple sessions, and inclusion as part of wider child health programmes[26].

The evidence base for the use of the Lift the Lip oral health assessment itself is unclear. This prompted my interest in finding out more about the tool and its effectiveness. This was the purpose of my Fellowship to Australia and New Zealand, as well as to seek knowledge about other initiatives being developed that integrate child oral health into wider child health programmes.

Childhood oral health in the United Kingdom

Childhood caries affects 14.5% of 3-year old children in Wales, rising to 20.2% in the most deprived areas[27]. By the age of five, 35.4% of children show signs of caries experience[28]. This means in a class of 30 children, about 19 will have no experience of decay. However, there is a clear social gradient to oral health, even in childhood[27, 28].

Treatment for severe caries is one of the most common reasons for childhood hospitalisation, with 7908 children in Wales having a dental general anaesthetic operation in 2015/16[29].

In Scotland, 31.8% of 5 year olds had signs of decay experience in 2014[30]. In Northern Ireland in 2013, obvious dental decay experience was present in 40% of 5 year olds[31].

Across local authorities in England, there is huge variation, with from 13% to 53% of five-year olds having experience of tooth decay, and these children have on average three teeth affected[32]. In 2014/15 there were 33,781 cases of children aged 10 and under needing the removal of one or more teeth: a rise of three per cent on the previous year[29].

Children are eligible for free dental treatment at National Health Service general dental practices, or at community dental services.

Child health services in Wales

Introduced in 2016, the Healthy Child Wales programme provides a national approach to delivering a minimum set of universal interventions to all families with pre-school children[33]. Mainly via midwives and health visitors, the programme aims to provide public health messages, promote health and empower families to make informed choices to help children achieve school readiness[33]. Flying Start is an additional programme specifically for children in the most disadvantaged communities. It offers eligible parents free quality childcare for 2-3 year olds, parenting support, an enhanced health visitor service and help for early language development[34].

Childhood oral health in Australia

It is reported that 48% of five-year old children in Australia have experience of dental decay[35]. Prevalence of caries is significantly higher in certain populations, including Aboriginal and Torres Strait Islander children, children from a lower socioeconomic background, children living in remote areas, and children of mothers born in non-English speaking countries[36].

Tackling poor childhood oral health, and the wide health inequalities present from a young age, is a priority. State governments are responsible for delivering public dental services, providing free care for children and eligible adults[37]. Although there is state autonomy on delivery, most service models follow a hub and spoke approach. There is considerable usage of skill mix in child dental health care with dental therapists being widely employed.

Child health services

Maternal and Child Health nurses (also called Child and Family Health nurses in some states) are the frontline health care workers who support a family through a child's early years.

In most states, the maternal and child health nurse has a first appointment to the new baby's home within a month of birth, and then subsequent clinic or home visits are arranged. It is a universal offer, but with voluntary uptake by parents/guardians. It was reported that the first home visit has 100% uptake, then followed by a decline in attendance when the baby reaches about 18 months of age, due to work commitments following maternity leave.

I visited a maternal child health centre in Melbourne, which offers a number of free services as well as the schedule of child health visits, including a 'New to Melbourne' programme, new baby parent groups (six week courses, with oral health as one of the included topics), counselling services, use of playroom and facilitated play groups, and immunisations.

The content of the Personal Child Health Record provided to parents varies in each state. In New South Wales, an oral health check is included within the book as part of all health checks[38]. At the first visit, there are questions about the mother's oral health, and from six months of age, childhood oral health questions. There is a tick box for completion of Lift the Lip alongside other physical examinations at every stage from six months. The child health record in Victoria records oral health for all 10 scheduled visits up to the age of three years within the Key Ages and Stages framework. In South Australia, the record has a tooth chart to document when teeth first appear, which aids introduction of oral health as a topic with parents.

Children that withdraw from the child health visit schedule are often picked up again during the school entry health assessment (also known as the before school health check). This is often the final contact with maternal and child health nurses, or can be completed by either a public health (school) nurse or at a GP practice. A health history questionnaire is completed by the parents followed by a multi-screening visit assessing health and school readiness. The Lift the Lip assessment is included within this visit.

Integration of professions

Multi-disciplinary integration really was apparent during my visit to the Victorian Association of Maternal and Child Health Nurses Conference in Melbourne. The Victoria Dental Health Services team were invited to have an information stand at the conference, and at the previous event six months earlier, were requested to give a presentation.

The Dental Health Services stand was one of the busiest during the whole day of the conference. The team were promoting a newly developed resource 'The Little Teeth Book', a parent engagement resource. It had

been piloted by maternal and child health nurses across Victoria. It was now in the process of being evaluated and revised, before being provided free of charge to all maternal and child health nurses.

Scenes from the Nurses' conference in Melbourne

It was overwhelming to see the excitement amongst the hundreds of nurses visiting the stand about the new resource. All of the nurses I spoke to said that they will use it all the time and there was interest in having something similar developed for school nurses, as well as GP practices. The nurses involved in the piloting came to the stand to say how much they liked the book, and how receptive parents were, particularly as it is mostly pictorial, and very user-friendly.

In New South Wales, the Early Childhood Oral Health Programme (ECOH) started in 2007, and is a community-based, early intervention programme, based on integrated service delivery[37]. Establishing effective partnership working between families, oral health professionals, general child health professionals and the NSW Kids and Families organisation is a key action within the strategic framework for dental health in NSW[37].

Childhood oral health in New Zealand

Childhood oral health in New Zealand has been improving over recent years, but one of the main challenges is the inequality in oral health status that exists within its population[39]. The New Zealand Ministry of Health released a vision statement 'Good Oral Health for All, for Life' in 2006[40]. The statement identifies that early childhood caries is the most common chronic childhood disease in New Zealand[41] and so children are one of four priority groups[42].

The Community Oral Health Service offers free dental care to all children in New Zealand, from birth to 18 years. Primary school enrolment with the service is greater than 90% in most of the 20 district health boards across New Zealand. Since 2008, there has been investment of $116 million to build new facilities, and the service operates from 176 fixed clinics and 169 mobile units, working at 1263 sites around New Zealand. With this investment came a change to a health-promoting model of care with a focus on family/whanau involvement, health education for self-care, prevention of ill-health and early intervention, encouraging a first dental visit by the age of 1 year.

The New Zealand Government has committed $10 million for an oral health promotion initiative to improve oral health of young children, which will include social marketing and the distribution of toothbrushes and fluoride toothpaste. The first phase of the programme commenced in 2016.

Fixed and mobile clinics of the Community Oral Health Services in New Zealand, sited on school grounds

There are three main routes into the Community Oral Health Service:

- During the Plunket (see below) visit schedule.
- Multi-enrolment with health services at birth (where every child born has their details passed on to Immunisation providers, Well Child/Tamariki Ora providers and Community Oral Health Services)
- Families can self enrol their children.

Child health services

The Government fund a Well-Child/Tamariki Ora programme for families of babies and young children from birth through to five years. The Before School Check (B4SC) is the final core contact.

One of the main providers is Plunket, a self-funded organisation, which is a unique partnership of health professionals and volunteers[43]. Every family in New Zealand is entitled to these free visits, and Plunket see more than 90% of new-borns in New Zealand each year. District Health Boards contract Tamariki Ora providers to specifically target hard-to-reach Māori and Pacific Island families/ whānau. It is estimated that Tamariki Ora providers are delivering services to around 10% of babies born in New Zealand[3].

In 2007/08, a review of the Well Child/Tamariki Ora programme resulted in the introduction of three new tools, including Lift the Lip oral health assessment[3]. Lift the Lip is intended to be delivered in conjunction with oral health education and encouraging enrolment with the Community Oral Health Service[3]. Oral health education is initiated at the fourth visit at 5-7 months of age. From the fifth visit, at 9-12 months of age, through till the eighth visit (the B4SC at 4-4.5 years), 'Lift the Lip' is conducted alongside other health assessments[43].

Lift the Lip and oral health promotion is included in the Well child/Tamariki Ora programme based on the evidence that there is high prevalence of dental disease in New Zealand children, substantial oral health inequalities exist, and oral health promotion plays an important role in early intervention and prevention of oral health disease long-term[3].

Integration of professions

There are close relationships between the clinical dental services and schools/preschools, due to being geographically co-located. Partnerships between oral health services and early years services are strong, and include lead maternity carers, the Well Child/Tamariki Ora programmes and primary medical care within GP practices.

An example is 'Keep me Smiling', a Hawkes Bay oral health project for preschoolers, which has been running since 2005. At immunisation visits, practice nurses educate the family on oral hygiene, provide a toothbrushing pack and invite the parent to enrol their child in the Community Oral Health Service. When the child visits the dental service, the practice nurse is notified via a feedback loop[42].

There is a specific programme: 'Healthy Smile, Healthy Child' which includes an oral health guide for well-child providers. Developed by the New Zealand Dental Association[44], it demonstrates the integral role the dental profession play in educating and supporting child health professionals to provide oral health promotion.

Lift the Lip as a programme

Purpose

The Lift the Lip procedure is conducted for a number of different aims:

- to demonstrate how and encourage parents to regularly check their child's teeth for signs of tooth decay
- to individualise oral health advice
- to highlight individual risk of dental decay
- to demonstrate the importance of good oral health behaviours
- to generate appropriate referrals to dental services
- to demonstrate the individual's need for attendance to those dental services

Development

Across Australia, Lift the Lip programmes are managed either by the public dental service or the child health service, but involve close collaboration between the two.

In Western Australia, the programme began in 2009, as a pilot for looked-after children, and had further roll-out in 2010. It was initially led by maternal and child health nurses predominantly. Issues that arose during introduction of Lift the Lip were primarily around access to dental services, as at the time, over 60% of children in WA did not see a dentist before school age.

In New Zealand, Lift the Lip was first implemented with the roll out of the Before School Check in 2008, and then introduced into Well Child/ Tamariki Ora contact schedule in 2010[3]. The Ministry of Health's Early Childhood Oral Health Toolkit[45] details the model of care for child health service involvement up to five years of age.

Facilitators for success that were reported to me include:

- oral health needs to be a priority to the group leading the project
- linking into existing practice, rather than being a new programme or priority
- support from dental public health professionals
- establishing multi-disciplinary steering groups, with representation from maternal and child health nurses, dental services, dental professional associations, medical providers and other healthcare workers
- liaison links to promote regular feedback to and from dental services and child health nursing
- regular review of resources and any training requirements.

Process

The assessment itself was developed as a non-invasive, straightforward procedure, which could be carried out in any setting. It is not a full clinical examination or a diagnostic test, but health professionals are trained to look at the teeth to identify early signs of, as well as more developed, tooth decay. It is intended to take only a couple of minutes to complete[3]. Lift the Lip is recommended during visits from the age of 6 months, as part of the general health assessment. When children are already receiving specialist care for existing conditions such as cleft lip and palate, it is not necessary to complete the assessment. Parents should still receive the health education component and resources.

In some areas of Australia, the protocol for conducting Lift the Lip involves either the child health professional or the parent themselves lifting the child's lip to allow visual assessment of the upper anterior teeth[38]. For young babies, this may be in a lying down position; for toddlers, the child may be sitting on their parent's lap on a chair opposite and facing the nurse. If the health professional lifts the lip themselves, they

should wear medical gloves[38]. It was considered that the intervention and accompanying oral health education should occur opportunistically within the general health visit, rather than at a certain time point within the visit. Lift the Lip should be one element of an overall assessment of the risk factors for dental decay.

During the shadowing sessions when I observed practice, Lift the Lip was carried out for children as young as six months through to three years. It was carried out opportunistically, either when the child was being weighed and measured, sitting on a parent's knee, or lying down. On some occasions, a small pen torch was used to help with lighting. All families were provided with Lift the Lip information resources to take home.

One of the main aims of Lift the Lip is to encourage parents to regularly examine their child's mouth using the same approach. There is no need for the parent to have advanced health knowledge. While the nurse is carrying out Lift the Lip, they should demonstrate to parents how to 'lift the lip' regularly at home, at least once a month, and what they should be looking for as early signs of decay. In Australia, this is particularly important as there is a decline in child health visit uptake at around 18 months of age. One of the most widely used resources is a fridge magnet card, which aims to act as a reminder for parents to regularly check the appearance of their child's teeth.

In New Zealand, Lift the Lip is ideally delivered in conjunction with oral heath anticipatory guidance and enrolment with the Community Oral Health Service. The oral health guide: Healthy Smile, Healthy Child[44] details the requirements of Lift the Lip. The recommended procedure is that the health professional themselves lift the lip with gloved hands:

- For infants and toddlers: the knee-to-knee position is recommended, with the parent and health professional sitting face-to-face, with knees touching. The child sits on the parent's lap facing the parent and is lowered until the child's head is resting on the health professional's lap.
- For preschool children: the child can either lie flat on an examination table or sit in front of the parent, with both the child and the parent facing the health professional[44].

Well Child/ Tamariki Ora providers are also expected to encourage parents to regularly check their child's teeth themselves. They are advised to explain that this is a check for visible decay, not a thorough clinical examination, and to emphasise that they still need to take their child regularly to a Community Oral Health Service clinic[44].

Training

In Victoria, Australia, the training for Lift the Lip occurs within the postgraduate university course for maternal and child health nursing. The students receive an oral health manual and university courses are responsible for providing oral health training to match the guidance within the child nursing professional framework. The curriculum includes Lift the Lip as one of the clinical competencies that requires sign-off. The time to develop skills is during placements, which relies on the shadowing of experienced nurses who have already embedded it into practice.

The South Australia Dental Service (SADS) offers Lift the Lip training for all new child and family health nurses twice a year. Refresher training is offered every two years. There is ongoing work to promote Lift the Lip to other professionals, and training is offered to practice nurses at medical practices, midwives, migrant health services, and aboriginal health workers. They have also engaged with speech pathologists and hospital emergency departments. Childcare centres can get accreditation for oral health certificates to confirm they have had Lift the Lip training.

In New South Wales, there has been Lift the Lip training provided since 2007, with a huge demand at the start from child and family health nurses. Oral health co-ordinators, working within the public dental service, provide the training at face-to-face sessions. They then offer refresher courses, or can provide training resources, including a recently developed video. Early childhood oral health is included as an assessable clinical skill within the professional framework for child and family health nurses[38]. The guidelines require all nurses to receive training on the Early Child Oral Health (ECOH) programme and implement the programme during standard care[38]. The ECOH programme keeps nurses updated through articles in a regular newsletter. The Centre for Oral Health Strategy NSW has also developed an online training package in collaboration with The Royal Australian College of General Practitioners to support GPs and practice nurses to develop their role in identifying, preventing and managing early childhood caries. Participants can gain certified continuing professional development points.

Across Australia, it was reported to me that there is no need for hands-on training. Additionally, there has been the need to consider training requirements for dental teams in the clinical management of very young children, as well as evidence-based oral health promotion.

In New Zealand, the most commonly used source of protocols and guidelines for Lift the Lip is the Healthy Smile, Healthy Child oral health guide for Well Child providers[44]. The New Zealand Dental Association also provide an online video demonstrating the Lift the Lip procedure. Training on oral health is included in the general training for the Well Child/ Tamariki Ora programme, for example ran by Plunket[3]. Lift the Lip is included within the oral health chapter of the Plunket nurse manual. Some District Health Boards have used local dental services to provide training, for example Auckland Regional Dental Service provide regular training sessions to Plunket nurses, GPs and general dental practitioners, which also helps to raise awareness of the Community Oral Health Service.

Barriers

The professionals I met with reported that they occasionally hear of barriers to implementation of Lift the Lip by child health nursing professionals. These barriers are mostly around time, and other work pressure and priorities. This demonstrates the need for continued momentum and engagement. When training is requested, the providers need to be responsive to address this (hence development of online training in some areas). Also, in the early development of the programme, consideration on how to integrate the procedure into record keeping processes needed to be addressed.

There have been occasional concerns about the need to reiterate that Lift the Lip is not expected to be a complete check. This needs to be communicated to families alongside the need to regularly attend a dental service. None of the professionals I spoke to recalled any incidents of receiving negative views/feedback from parents and families.

There were concerns raised around the capacity and capabilities of dental services to manage child patients. Views were expressed around the need for dental teams to keep up to date with the oral health promotion messages that currently adhere to best evidence. There was wide agreement that it was important to raise awareness of oral health, but a need to address dental access issues.

Resources

Specific ‘Lift the Lip’ resources are available to maternal and child health nurses across Australia. The information encourages families to “Check your child’s teeth- lift the lip”, looking for early signs of tooth decay once a month, and includes clinical photographs of healthy teeth and teeth with dental caries. Different states distribute a variety of leaflets, posters and magnetic mini leaflets.

In some areas of high dental need in Victoria, free toothbrush packs are given out by maternal and child health nurses. It is in these areas that the highest percentage of Lift the Lip checks are carried out- 95%- possibly because the packs act as a prompt for nurses, or are a facilitator to begin discussions on oral health and then Lift the Lip.

In New Zealand, visual aids are provided to assist Well Child/ Tamariki Ora providers to identify early signs of tooth decay during a Lift the Lip assessment. Pamphlets are also available for distribution to parents. Well Child/ Tamariki Ora providers have reported the resources helpful for delivering oral health messages. Particularly, the progression of decay pictures are considered an effective tool that has an impact on parents.

For the Before School Check in New Zealand, a dental caries severity scorecard has been developed. Whilst it is recommended that all children enrol with the service, and so all referrals are accepted, the grading system may be useful for prioritisation and to help educate the parents about the severity of their child's condition and the importance of dental attendance.

Referral pathways

There was a general consensus that the process for the Lift the Lip assessment is straightforward; the more crucial element for the success of 'Lift the Lip' is establishing an effective referral pathway.

In South Australia, the referral pathway from maternal and child health nurses to the public dental service became formalised in 2007. The nurses are supplied with a referral pad. The parent signs the referral form, and one copy is sent to the dental service. There have been 17,000 referrals since the process began, and 90% of the families referred opt to attend the public dental service (SADS). Nurses are advised to do an automatic referral if the child is non-compliant or considered high-risk due to other factors. SADS have guidelines in place to prioritise referrals and manage any dental service capacity issues.

In New South Wales, child and family health nurses and GP practices can complete an oral health advice form to refer children to a public dental clinic. Some previous work had investigated why some areas had low referral rates from child and family health nurses though high dental need of the local population. Views highlighted the variability of the referral process and feedback, which led to system changes.

In Western Australia, the maternal and child health nurses should refer any children with signs of poor oral health to a dental practice. A dentist, on receiving a referral, should let the nurses know if the child has attended, as well as informing the oral health promotion team for monitoring purposes.

Universally, it was clear that nurses want to get a response back from a referral letter, and a feedback loop to exist between the dental professionals and themselves. In some areas, oral health promotion co-ordinators assist with this, whilst in others, the dental clinician examining the referred child will instigate this. The feedback loop supports further follow up by the child health nurses if the child has not been taken to dental appointments.

In New Zealand, a referral to the community oral health service should occur when decay is observed during the Lift the Lip check, or when providers have any concerns[3]. Regardless of the outcome of Lift the Lip, those performing the assessment should inform parents of the need for regular attendance at a community oral health service for a full clinical examination by a dental professional[3].

Evaluation

In New South Wales, the Early Childhood Oral Health programme, including Lift the Lip and other oral health promotion activities, was evaluated in 2009. It was found that referrals to dental services for children under

five years significantly increased following the implementation of the programme, with the rate in 2009 five times higher than in 2007[46]. An evaluation of the Lift the Lip resources, surveying 150 people, reported that 93% thought the information was clear and easy to understand and 37% said they learned something new from the resources[4]. Consultation with Aboriginal communities resulted in development of a new version of the resource, with the slogan changed to 'See my Smile'[4]. Between 2007-2009, approximately 81,400 Lift the Lip magnets and See my Smile brochures were distributed each year[4]. Approximately 85,000 babies are born each year in NSW, which demonstrates the wide distribution of the resources. The resources have also been translated into 15 languages.

Additionally, a qualitative study of the perceptions of child and family health nurses about the Early Childhood Oral Health programme in NSW, five years post-implementation, has been conducted[47]. The nurses interviewed felt confident and took ownership of their role of incorporating oral health promotion into practice, but did highlight a lack of clarity in referral and feedback processes[47]. It concluded that the programme is being sustained and effectively implemented into practice, but that the impact of the programme on oral health outcomes still needed to be assessed[47].

A quality review of the Lift the Lip component of the Well Child/ Tamariki Ora programme was undertaken for the New Zealand Ministry of Health in 2013[3]. It was reported that the Well Child/ Tamariki Ora providers generally liked Lift the Lip, and understand and appreciate the need for using the oral health assessment[3]. With the introduction of Lift the Lip, providers were surprised at the number of children identified with obvious dental caries by four years of age, which reinforced the importance of the tool. Some providers consider the tool particularly important for children living in areas of high deprivation[3].

A very high completion rate for Lift the Lip by all Well Child/ Tamariki Ora providers was reported, ranging from 89.5% of Plunket visits at age 9-12 months (core contact five) to 96.4% of Plunket visits at 2-3 years (core contact seven)[3]. The rates for Tamariki Ora providers were over 99% at all core contacts from 9-12 months[3]. However, the data highlighted inconsistencies of delivery compared to the guidelines, which questioned if anticipatory guidance on oral health is being coded as Lift the Lip[3]. It was reported that Well Child/ Tamariki Ora providers are consistently delivering Lift the Lip at the Before School Check (B4SC)[3]. Only in a small proportion of checks (1.7%), was Lift the Lip offered but declined[3]. Differences in Lift the Lip completion rates between ethnicities reflect differences in the uptake of the B4SC more generally[3].

Evidence from case studies found that Well Child/ Tamariki Ora providers are delivering anticipatory guidance on good oral health practices[3]. Parents have a high recall of oral health messages delivered at the core contacts. However, few parents recalled Well Child/ Tamariki Ora providers checking their child's teeth and none recalled being shown how to 'lift the lip' at home[3].

An evaluation of the Well Child Oral Health Project in the Taranaki region has found increased enrolments of children under five years old in the Community Oral Health Service, and increases in the number of children who are caries- free[3]. It was found that the rate of completed Lift the Lip assessments increased between 2005 and 2007[3].

In New Zealand, general practice nurses are encouraged to perform Lift the Lip, as well as Plunket nurses and Well Child/Tamariki Ora providers. A 2011 survey of GP nurses demonstrated scope for improvement to engage with this professional group to deliver oral health advice[5]. Whilst only 33% of the nurses surveyed felt comfortable in giving oral heath advice to parents/caregivers, 66% thought training would be helpful and 95% believed they would feel comfortable giving oral health advice once trained[5]. Only 12% believed they had been well or adequately trained to give oral health advice, yet 10% felt that giving oral health advice was not part of the practice nurse role[5]. Of the nurses completing the survey, 73% did not know about the Lift the Lip technique, but only 13% felt that, even with training, it would be unacceptable to look in a child's mouth[5].

Other oral health promotion activities aimed at early childhood

Anticipatory guidance

Anticipatory guidance refers to the information that is given to families to promote health, prevent disease and increase awareness about what to expect as the child enters the next developmental phase. Repeated anticipatory guidance with mothers, starting from pregnancy, has been found to be successful at reducing the incidence of early childhood caries in young children[48]. As discussed, Lift the Lip is designed to be used in conjunction with anticipatory guidance in Australia and New Zealand.

Research in the delivery of anticipatory guidance by telephone for childhood oral health has been conducted in Australia[49]. I met with researchers currently studying the effectiveness of telephone conversations and/or regular text messaging to provide oral health education to mothers of young children. There is also work to provide resources that support anticipatory guidance, aimed at parents, grandparents, carers, and childcare settings. Design focuses on use of infographics to overcome literacy and language barriers, and has been well-received.

In New Zealand, the Healthy Smile, Healthy Child guideline documents risk factors for dental decay, with the intention to be used by Well Child/Tamariki Ora providers for modifying the anticipatory guidance provided to meet the needs of each family[44]. The guide provides information across a range of modules that can be used to develop age-specific, consistent and appropriate anticipatory guidance[44].

Motivational interviewing

Motivational Interviewing (MI) is an established style of communicating with clients, including a set of specific techniques, to help resolve ambivalence about health behaviours. The style is service user-led and collaborative, with the health 'expert' adopting the role of a team-mate or trusted advisor[50]. Oral health promotion teams across Australia are developing MI programmes.

South Australia Dental Service provided a series of training events and staff engagement to embed the use of MI into daily clinical practice. The aims were to increase the capabilities of staff to enhance motivation to change behaviours that cause oral disease, explore and address factors affecting oral health, and establish strong alliances with patients based on trust, respect, empathy and understanding. More than 700 dental service staff have participated in MI training, and it has been incorporated into the Bachelor of Oral Health programme. A framework is in place for using MI with families of children requiring a dental general anaesthetic.

In Western Australia, the oral health promotion unit loans out resources for use by a variety of different professions and groups. They are loaned to allow the opportunity to update the resources and receive feedback from users. The team showed me a new resource developed for MI which is a storyboard called 'Talking Point', with a number of topics related to child oral health. Parents are encouraged to pick a topic that they want to talk about, and ask questions. The oral health promotion unit provides train the trainer courses to develop skills in MI. There is current research activity around the use of dental nurses to provide enhanced support to mothers of newborns using MI[51].

School toothbrushing programmes

It was really nice to hear how the colleagues I met in Australia look to the UK as a leader on school toothbrushing programmes. In Melbourne, I was invited to give a talk during the monthly oral health promotion team meeting about the Designed to Smile[52] programme in Wales.

In New Zealand, approximately 8000 children in the Auckland region participate in a supervised toothbrushing programme. Similar programmes exist elsewhere in the country, particularly in settings where

high prevalence of dental caries is expected. These programmes are primarily led by teachers and childcare workers, and there are strong sponsorship links.

Childcare centre programmes

Different states have developed resources available to professionals and parents within childcare settings.

In New South Wales, the Little Smiles programme is delivered for childcare centres, which is aligned with their accreditation programme[53]. An information and training session is provided for childcare workers, and the centres are supplied with a free resource pack, which includes a template oral health policy, activities, factsheets, songs, and an educational DVD for staff and parents. The package has been developed in collaboration with technical college staff, and involves the teaching of childcare students at college, with accompanying online resources. Evaluation has received good feedback.

In Victoria, the oral health promotion team organise a programme called Baby Teeth Count Too, which was shortlisted as a finalist in the Department of Health Early Years awards. It is a resource for supported playgroups (groups which have a paid facilitator), and all 200 facilitators in the Melbourne metropolitan area have received training. The resource is a large picture flipchart with prompt text for the facilitator and key oral health messages for parents of the 0-3 year old children. It is a sustainable model, empowering other professional groups to provide oral health education.

The Smiles4Miles programme in Victoria started 10 years ago. It is aimed at the 3-5 year age group and involves kindergartens and day care centres. Settings are targeted based on dental caries prevalence and socio-economic status of the population in the area. Co-ordinators, who have a health promotion/dental background, engage with local settings, train staff and support them to complete an award scheme, which has settings-based criteria under the topics of Drink Well, Eat Well, Clean Well. There are actions for family and child engagement. Local dental teams go to Smiles4Miles sites to carry out screening (with parental consent) and give appointments for treatment. There are formal links between the co-ordinator and dental practices, including feedback on dental attendance. The Smiles4Miles award (valid for two years) counts as a standard in the National Quality Framework for childcare. There are 500 childcare settings participating and the number of children accessing the public dental service in Victoria has been increasing each year from 98,000 in 2008/09 to 165,000 in 2014/15[54].

Interventions during pregnancy

Antenatal guidelines in Australia recommend that health professionals promote oral health and encourage dental attendance to pregnant women[55]. To support implementation, an online Midwifery Initiated Oral Health (MIOH) education programme was developed to provide midwives with the knowledge to provide oral health education, screening and referral to pregnant women at their first antenatal appointment[56, 57]. Work has involved developing a simple screening tool that involves asking pregnant women just two questions. It has shown 94% sensitivity[58], and can then be followed by an optional visual inspection. A process evaluation of the screening tool led to it being embedded into routine practice. The MIOH programme contains on online workbook and supporting video. A skill assessment leads to a certificate for continuing professional development points endorsed by the Australian College of Midwives. At the time of my Fellowship, it was reported that over 300 midwives in NSW and Victoria have completed the training, and there are actions to provide access nationally. Evaluation of the programme has been positive[58].

Conducted by the Australian Research Centre for Population Oral Health, research in South Australia aims to determine if culturally appropriate intervention reduces early childhood caries prevalence and oral health inequalities. The interventions begin in pregnancy, including motivational interviewing and anticipatory guidance[59].

The Bee Healthy Regional Dental Service in New Zealand has developed resources to support oral health education for pregnant women. These are used as flip charts by antenatal health providers, and then the women are given a corresponding brochure containing the same information. The use of infographics increase the visual appeal and supports health literacy.

Conclusions

It was extremely valuable to learn about the introduction of Lift the Lip and other programmes aiming to improve childhood oral health through face to face discussions with professionals involved in the development and by shadowing those who implement the programmes in routine practice. There is wide agreement that a focus on the lifecourse approach - making gains in the first stages of life that then give a health advantage throughout life - is a priority. It was clear that a systems approach to tackling oral health inequalities is paramount, with the greatest success being seen when interventions are integrated within wider general health programmes. The training needs of all health and social care professions working with families of young children should be considered, to ensure up to date knowledge of evidence-based oral health advice and understanding of the importance of early prevention and tackling inequalities.

Lift the Lip is one element of a process of engagement of dental services with families of young children, and can act as an initiator of that process. The need for dental services to be closely linked to professional groups conducting Lift the Lip is very important. In the areas visited where this was the case, there was greater involvement in and uptake of the programme, due to clear, consistent referral pathways and feedback mechanisms.

The quality review commissioned in New Zealand concluded that there is limited information available to determine the effectiveness of Lift the Lip on improved oral health outcomes, but that it may be a useful interactive tool to couple with oral health promotion[3]. Monitoring is needed to assess whether Lift the Lip referrals equate to increases in dental service attendance. Further research is needed to assess the impact of Lift the Lip on improving childhood oral health and reducing health inequalities.

Introducing Lift the Lip in Wales

The rationale for the inclusion of the Lift the Lip oral health assessment within the health visiting schedule and other child health services, stems from the inequalities in oral health status and access to dental services for young children. The programme is aligned to the public health focus on giving every child the best start in life.

Initially there needs to be professional engagement to raise awareness and build capacity. Designing campaign materials that maximise the use of infographics and give simple, consistent messages is important to maintain the key aims of the programme: to demonstrate the importance of good oral health and early intervention when there are signs of concern. Development of training appropriate for Wales should follow the example of linking with university courses and considering use of online resources, for a sustainable approach to implementation. It is essential to have clearly defined referral pathways in place to support the programme. It is important that any project to introduce Lift the Lip should fully consider evaluation within the planning stages. Evaluation should consider the acceptability of the programme to child health professionals, the effectiveness of facilitating access to dental care and early intervention, and the implications on health equity.

References

[1] Welsh Government (2016). Prudent Healthcare: Securing Health and Well-being for Future Generations. Crown copyright. Available at: www.prudenthealthcare.org.uk

[2] Welsh Government (2016). A Guide to the Wellbeing of Future Generations Act. Crown copyright.

[3] Litmus (2013). Well Child Tamariki Ora Programme Quality Reviews. Wellington: Ministry of Health.

[4] Maher L (2010). NSW Early Childhood Oral Health Program Evaluation. Centre for Oral Health Strategy, NSW Department of Health.

[5] Moffat S, Meldrum A, Aitken W, Coates D (2016). The acceptability of primary health-care nurses delivering oral health messages. J Dent Res 95(Spec Iss B): 0514.

[6] Filstrup Sl, Briskie D, da Fonseca M, Lawrence L, Wandera A, Inglehart MR (2003). Early childhood caries and quality of life: child and parent perspectives. Pediatr Dent 25: 431-440.

[7] Cunnion DT, Spiro A, Jones JA, Rich SE, Papageorgiou CP, Tate A, Casamassimo P, Hayes C, Garcia RI (2010). Pediatric oral health-related quality of life improvement after treatment of early childhood caries: a prospective multisite study. J Dent Child 77: 4-11.

[8] Peterson PE (2003). The World Oral Health Report 2003: continuous improvement of oral health in the 21st century-the approach of the WHO Global Oral Health Programme. Comm Dent Oral Epidemiol 31(Suppl 1): 3–23.

[9] Jackson SL, Vann Jr WF, Kotch JB, Pahel BT, Lee JY (2011). Impact of Poor Oral Health on Children's School Attendance and Performance. Am J Public Health 101:1900-1906.

[10] Ramos-Jorge J, Pordeus IA, Ramos-Jorge ML, Marque LS, Paiva SM (2013). Impact of untreated dental caries on quality of life of preschool children: different stages and activity. Comm Dent Oral Epidemiol 42: 311-22.

[11] Sheiham A (2006). Dental caries affects body weight, growth and quality of life in pre-school children. Brit Dent J 201(10): 625–626.

[12] Arora A, Schwarz E, Blinkhorn AS (2011). Risk factors for early childhood caries in disadvantaged populations. J Invest Clin Dent 2(4): 1–6.

[13] Thomson WM, Poulton R, Milne BJ, Caspi A, Broughton JR, Ayers KMS (2014). Socioeconomic inequalities in oral health in childhood and adulthood in a birth cohort. Comm Dent Oral Epidemiol 32: 345-353.

[14] Porter J, Holmes R, Vernazza C, Chadwick B, Ryan R, Dennes M (2015). Children's Dental Health Survey 2013. Country specific report: Wales. Health and Social Care Information Centre.

[15] Gerritsen AE, Allan PF, Witter DJ, Bronkhorst EM, Creugers NHJ. Tooth loss and oral health-related quality of life: a systematic review and meta-analysis. Health Qual Life Outcomes 2010. 8:126.

[16] British Dental Association (2016). Bad teeth hurting career prospects. Available at: www.bda.org/news-centre/press-releases/bad-teeth-hurting-career-prospects

[17] Azarpazhooh A, Leake JL (2006). Systematic review of the association between respiratory disease and oral health. J Periodontol 77: 1465-1482.

[18] Borgnakke WS, Ylostalo PV, Taylor GW, Genco RJ (2013). Effect of periodontal disease on diabetes: systematic review of epidemiologic observational evidence. J Clin Periodontol 40: S135-S152.

[19] Public Health Wales (2016). Making a difference: Investing in sustainable health and well-being for the people of Wales. Public Health Wales NHS Trust.

[20] Marmot M, Allen J, Goldblatt P, Boyce T, McNeish D, Grady M, Geddes I (2010). Fair society, healthy lives: Strategic review of health inequalities in England post 2010 London: Marmot Review.

[21] World Health Organisation (2013). Essential Nutrition Actions: improving maternal, newborn, infant and young child health and nutrition.

[22] National Institute for Health and Care Excellence (2014). Oral health: local authority oral health improvement strategies. Guidelines PH55. London: National Institute for Health and Care Excellence.

[23] National Institute for Health and Care Excellence (2016). Quality Standard 139. Oral health promotion in the community. London: National Institute for Health and Care Excellence.

[24] Public Health England (2015). Rapid Review to Update Evidence for the Healthy Child Programme 0-5. Crown copyright.

[25] de Silva AM, Hedge S, Akudo Nwagbara B, Calache H, Gussy MG, Nasser M, Morrice HR, Riggs E, Leong PM, Meyenn LK, Yousefi-Nooraie R (2016). Community-based population-level interventions for promoting child oral health. Cochrane Database of Systematic Reviews, Issue 9. Art. No.: CD009837.

[26] Scottish Intercollegiate Guidelines Network (2005). SIGN 83: Prevention and management of dental decay in the pre-school child.

[27] Morgan MZ, Monaghan N (2015). Picture of Oral Health 2015. Dental Epidemiological Survey of 3 year olds in Wales 2013-14. Cardiff University/ Public Health Wales.

[28] Morgan MZ, Monaghan N (2016). Picture of Oral Health 2016. Dental Epidemiology Survey of 5 year olds 2014/15. Cardiff University.

[29] Morgan M (2016). Child Dental General Anaesthetics in Wales. Public Health Wales.

[30] Information Services Division Scotland (2014). National Dental Inspection Programme (NDIP) 2014.

[31] Ravaghi V, Hill K, Ryan R, Dennes M (2015). Children's Dental Health Survey 2013. Country specific report: Northern Ireland. Health and Social Care Information Centre.

[32] Local Government Association (2016). Tackling poor oral health in children: Local Government's public health role.

[33] Welsh Government (2016). Chief Medical Officer for Wales Annual Report 2015-16. Rebalancing healthcare: Working in partnership to reduce social inequity. Crown copyright.

[34] Welsh Government (2015). National evaluation of Flying Start. Available at: http://gov.wales/statistics-and-research/national-evaluation-flying-start/?lang=en

[35] Australian Institute of Health and Welfare (2014). Oral health and dental care in Australia: key facts and figures and trends. 2014. Cat No. DEN 228. Canberra: Australian Institute of Health and Welfare.

[36] Centre for Oral Health Strategy NSW (2009). The New South Wales Child Dental Health Survey 2007. Sydney: NSW Department of Health.

[37] NSW Ministry of Health (2013). Oral Health 2020: A Strategic Framework for Dental Health in NSW. NSW Ministry of Health.

[38] NSW Ministry of Health (2014). Early Childhood, Oral Health Guidelines for Child Health Professionals, 3rd Edition. Centre for Oral Health Strategy NSW, NSW Ministry of Health.

[39] Ministry of Health (2010). Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey. Wellington: Ministry of Health.

[40] Ministry of Health (2006). Good Oral Health for All, for Life: The Strategic Vision for Oral Health in New Zealand. Wellington: Ministry of Health.

[41] Bach K, Manton DJ (2014). Early childhood caries: a New Zealand perspective. J Prim Health Care 6(2): 169–74.

[42] Dallas S, Li J, Kruse K, McBride-Henry K (2015). A literature review on oral health in preschoolers. Health Promotion Agency. Report No: RSC0210. Wellington, New Zealand.

[43] Plunket (2017). What we offer- Well Child/Tamariki Ora schedule. Available at: www.plunket.org.nz/what-we-do/what-we-offer/plunket-visits/well-child-tamariki-ora-schedule/.

[44] New Zealand Dental Association (2008). Healthy Smile, Healthy Child: Oral Health Guide for Well Child Providers. Auckland: New Zealand Dental Association.

[45] Ministry of Health (2008). Early Childhood Oral Health: A toolkit for District Health Boards, primary health care and public health providers and for oral health services relating to infant and preschool oral health. Wellington: Ministry of Health.

[46] Maher L, Phelan C, Lawrence G, Torvaldsen S, Dawson A, Wright C (2012). The early childhood oral health program: promoting prevention and timely intervention of early childhood caries in NSW through shared care. Health Promot J Austr 23(3):171-6.

[47] Veale M, Ajwani S, Johnson M, Nash L, Patterson T, George A (2016). The early childhood oral health program: a qualitative study of the perceptions of child and family health nurses in South Western Sydney, Australia. BMC Oral Health 16:56.

[48] Plutzer K, Spencer AJ (2008). Efficacy of an oral health promotion intervention in the prevention of early childhood caries. Comm Dent Oral Epidemiol 36(4): 335–346.

[49] Plonka KA, Pukallus ML, Barnett A, Holcombe TF, Walsh LJ, Seow WK (2013). A controlled, longitudinal study of home visits compared to telephone contacts to prevent early childhood caries. Int J Paediatr Dent 23(1):23-31.

[50] Nelson C (2015). Motivational Interviewing: Project Report. South Australia Dental Service.

[51] Arrow P, Raheb J, Miller M (2013). Brief oral health promotion intervention among parents of young children to reduce early childhood dental decay. BMC Public Health 13:245.

[52] Designed to Smile. http://www.designedtosmile.co.uk/home.html

[53] Centre for Oral Health Strategy NSW (2010). NSW Little Smiles. Dental Health Resource Package for Childcare Professionals. NSW Department of Health.

[54] Whelan M (2015). Decay prevalence for clients presenting to Victorian Public Dental Clinics.

[55] Australian Health Ministers' Advisory Council (2012). Clinical Practice Guidelines: Antenatal Care – Module 1. Australian Government Department of Health and Ageing, Canberra. Commonwealth of Australia.

[56] George A, Lang G, Johnson M, Ridge A, de Silva AM, Ajwani S, Bhole S, Blinkhorn A, Dahlen HG, Ellis S, Yeo A, Langdon R, Carpenter L, Heilbrunn-Lang A (2016). The evaluation of an oral health education program for midwives. Women and Birth 29:208-213.

[57] George A, Duff M, Ajwani S, Johnson M, Dahlen H, Blinkhorn A et al (2012). The development of an education program for midwives in Australia to improve perinatal oral health. J Perinat Educ 21(2):112-22.

[58] George A, Dahlen HG, Blinkhorn A, Ajwani S, Bhole S, Ellis S, Yeo A, Elcombe E, Sadozai A, Johnson M (2016). Measuring oral health during pregnancy: sensitivity and specificity of a maternal oral screening (MOS) tool. BMC Pregnancy and Childbirth 16:347

[59] The University of Adelaide (2015). Oral Health Promotion for Pregnant Women and Parents/Guardians of Infants. Available at: www.adelaide.edu.au/arcpoh/oral-health-promotion/research/pregnant-women/