Prevention and Management of Dental Caries in Children 2nd Edition: Findings from practitioner interviews during the guidance consultation period

The Scottish Dental Clinical Effectiveness Programme (SDCEP) first published guidance on Prevention and Management of Dental Caries in Children (PMDCC) in 2010. By 2013, development of a second edition was necessary to bring the guidance up to date and in line with the most recent evidence, legislation and national policy and also to help support the implementation of the Oral Health Improvement Plan [1] from Scottish Government.

As part of the development process telephone interviews were conducted to better understand the barriers and facilitators to implementing the current SDCEP guidance in order to inform the new edition of the guidance. Telephone interviews were conducted with a range of professionals involved in providing oral health care for children across the UK.

The aim of the interviews was to explore the barriers and facilitators that practitioners experience in the implementation of the PMDCC guidance recommendations.

Key Findings

- Four recommendations out of 11 were selected by participants as the most challenging to implement.
  1. Bitewing radiographs - The main barriers were; age of patient, clinical benefit, clinical freedom, frequency of radiographs, importance, social influence, time and money. Facilitators were; good educational tool for parents, straightforward to do and occasionally useful for finding lesions.
  2. Pulpotomy - The main barriers were; co-operation, clinical experience, social influence, current oral health, time and money. Facilitators were: training, money, if it was more commonly carries out, access to a dental therapist, relatively easy procedure and it can save the space if done effectively.
  3. Healthy diet advice - The main barriers were; parent/patient engagement, inconsistency, motivation of professional, time, money and materials. Facilitators were; responsiveness and honesty of children, use of apps, dental therapists and hygienists, Childsmile and effects of healthy diet on other aspects of overall health.
  4. Extraction of first permanent molar - The main barriers were; uncertainty of treatment, social influences, clinical condition of tooth, clinical ability, co-operation, emotion and timing. Facilitators were; having a pathway in place, can be quicker and better outcome than drilling and filling and it can be empowering for patient having managed to get that type of treatment done successfully.

Next Steps

The Guidance Development Group considered the interview findings alongside the consultation feedback when finalising the guidance for publication.

This summary presents key findings from practitioner interviews conducted during the consultation period of the update of the *Prevention and Management of Dental Caries in Children 2nd Edition* guidance. This was carried out by SDCEP and TRiaDS to inform the development of the new guidance.

SDCEP (Scottish Dental Clinical Effectiveness Programme) has a national remit to provide user-friendly, evidence based, clinical guidance in priority areas for dental healthcare in Scotland.

TRiaDS (Translation Research in a Dental Setting) is a multidisciplinary research collaboration working in partnership with SDCEP to increase the implementation of SDCEP guidance through the development and evaluation of theory-informed interventions for change.

Background and Aim

Dental caries is the world's most common disease with 60-90% of school children worldwide having experienced dental caries [2,3].

Despite vast improvements in the oral health of children in Scotland in recent years, dental caries is still affecting children in areas of high deprivation with nearly half (45%) of P1 children and around a third (34%) of P7 children having an obvious caries experience [4,5]. If dental caries is left untreated it can lead to significant pain and infection which can affect the child's quality of life, school performance and development [6,7]. Within the UK one of the most prevalent reasons to undergo an elective hospital admission for general anaesthetic as a child is for a dental extraction. However, dental caries is mostly preventable and there are various strategies available to effectively prevent and manage caries.

SDCEP first published the PMDCC guidance in 2010. By 2013, development of a second edition was necessary to bring the guidance up to date and in line with the most recent evidence, legislation and national policy and also to help support the implementation of the Oral Health Improvement Plan [1] from Scottish Government.

As part of the development process, telephone interviews were conducted to better understand the barriers and facilitators to implementing the current SDCEP guidance in order to inform the new edition of the guidance. Telephone interviews were conducted in September/October 2017 with various professionals involved in providing oral health care for children across the UK.

The aim of the interviews was to explore the barriers and facilitators that practitioners may experience in the implementation of the PMDCC guidance recommendations.

Methods

Design

Theoretically informed semi-structured telephone interviews with practitioners from a range of professional roles across the UK were conducted.

Prioritisation of Recommendations

The Guidance Development Group (GDG) were asked to rate each of the key recommendations (n=9) from the consultation draft for both likelihood of implementation and importance. We added two extra recommendations which were no longer key recommendations (Bitewing radiographs and Risk Assessment) in the draft version of the 2nd Edition of the guidance. These had been found to be challenging for practitioners to implement during the publication of the 1st Edition of the PMDCC guidance. The results of the prioritisation exercise did not identify any recommendations that were both highly important and difficult to implement, therefore it was decided to cover all 11 recommendations in the interviews.

Interviews

Interview participants were sent a list of the 11 recommendations prior to interview and asked to select one recommendation that they would find the most challenging to implement in practice to discuss in the interviews. The interviewer then selected one more recommendation to discuss to ensure that all

recommendations were covered over the duration of the interviews with a focus on the most challenging recommendations. An opportunity to raise any other concerns was also provided.

Participants

Participants were practitioners who are involved in providing oral health care for children throughout the UK. They were recruited via the SDCEP website and an email invitation to stakeholders.

Analysis

To help inform the GDG's post consultation discussions, a rapid analysis was undertaken to identify key barriers and facilitators to implementing the guidance.

Results

A total of 11 interviews were conducted with 11 practitioners working in primary and secondary care. They included Dental Associates (n=5), Senior Dental officers (n=3), Principle Dentist (n=1), Dental Hygienist (n=1) and an Academic Registrar in Paediatric Dental Unit (n=1). The duration of the interviews ranged from 24 minutes to 63 minutes (excluding introductions) with the average interview time being 43 minutes long.

Only 4 of the 11 recommendations were selected by participants as being the most challenging to implement in practice and chosen for discussion. The recommendation that was selected most frequently as the most challenging to implement was bitewing radiographs with 5 Interviewee's selecting to discuss this. The second most selected recommendation was pulpotomy with 3 Interviewee's choosing to discuss this, followed by healthy diet advice chosen by 2 Interviewees, and extraction of a first permanent molar chosen once. No other recommendation was chosen as being the most challenging to implement but all were covered over the duration of the interviews. This summary report presents findings for the 4 recommendations selected by participants.

The barriers and facilitators that were identified through the interviews for each of these 4 recommendations were as follows;

Recommendation 1

For all children aged four years and above, take bitewing radiographs at intervals based on your assessment of caries risk (every two years or, if at increased caries risk, every 6-12 months).

The main barriers to this recommendation were;

- Age – It was thought that this was too young, at that age compliance is a problem making it difficult for the practitioner to perform the radiograph effectively and that this could potentially create a negative experience for the child therefore putting them off future visits. Some suggested 6 years was a more appropriate age or once the permanent molars are through.
- Clinical benefit – The clinical benefit of this recommendation was queried in terms of whether they are always necessary, whether they change the outcome or the treatment and whether the benefits of taking regular radiographs outweigh the risks of radiation exposure.
- Clinical freedom – Some interviewees were unhappy at how prescriptive the recommendation is and felt that it detracts from patient centred care.

- Frequency of radiographs suggested – Some felt that the recommendations suggested frequency was too much and too often.
- Importance – It was felt by some interviewees that they can be easily forgotten about or that they aren't particularly important.
- Social Influence – This was mentioned in relation to both social influence from parents and colleagues. Parents were a barrier if they had tried once and the child couldn't tolerate it and then refused future attempts or if parents felt it wasn't necessary. Colleagues were seen as a social barrier if other or more senior colleagues within a practice decided not to do bitewings until the children were older.
- Time and money – Time was seen as a barrier as it can be time consuming and therefore something you might put off and time is costly. Money was seen as a barrier as there was no financial incentive to do bitewings and there is a possibility of having to buy in smaller film holders for younger children.

The main facilitators to this recommendation were that bitewing radiographs were good as an educational tool to show parents the impact of diet and toothbrushing, they can be straightforward and easy to do (as long as the patient is compliant) and very occasionally could show lesions the dentist hadn't spotted.

Recommendation 2

For a child in pain due to irreversible pulpitis in a primary tooth with no evidence of dental abscess, consider carrying out a pulpotomy to preserve the tooth and to avoid the need for an extraction.

The main barriers to this recommendation were;

- Co-operation – Some felt that as pulpotomy can be an intense/traumatic/unpleasant procedure that children will not cope well with this or the anaesthetic required for it. It can also be stressful for the practitioner if the child is upset and uncompliant.
- Clinical experience – It was felt that most dentists have never performed a pulpotomy before and therefore they lack experience and also confidence in their ability.
- Social Influence – Some interviewees were concerned about the reaction of parents should the pulpotomy fail and an extraction was required, as the child will have gone through additional pain needlessly and it would not "*look good*" for the dentist. Also, some parents may ask for an extraction to be provided instead. It was also thought that some parents are opposed to their child having a stainless steel crown as they are "*ugly*".
- Current oral health – Interviewees mentioned that it would depend on the child's current oral health if they would consider a pulpotomy or not and also if the child was older and due to lose their teeth anyway then the dentist may opt for an extraction instead.
- Time and money – Time was considered a barrier as a pulpotomy can be a lengthy treatment and extraction is quicker. In addition, it takes longer to explain a procedure to children and when a dentist is under time pressure they may opt for the quicker option. Money was also considered a barrier as there is no remuneration for multiple appointments should the pulpotomy fail, (the same fee is paid regardless of the time taken), the materials can be expensive and are not always available (ferric sulphate and gingival retraction haemostatic aid) and extraction is cheaper and still benefits the child by getting them out of pain.

The main facilitators to this recommendation were that if done effectively you are able to save the space (where the tooth resides) and it is relatively easy to perform in a compliant child. Facilitators that would make it easier to adhere to this guidance were if more training was available, if it was better remunerated (not paid the same regardless of time taken or if multiple appointments were required), if the practice had a dental therapist available that could undertake the procedure and if the practitioners or their colleagues were more experienced in conducting a pulpotomy.

Recommendation 3

Advise all children and their parent/carer about how a healthy diet can help prevent caries, at intervals determined by their risk of developing dental caries.

The main barriers to this recommendation were;

- Parent/patient engagement – It was felt that getting parents or patients to engage and listen and take on the advice was a barrier to this recommendation. Parents/patients may also have a different perception of what healthy is and some may not believe that diet is linked to dentistry or may have the perception that "*it's only teeth*". Some mentioned that parents could become defensive when discussing their children's diet or that the parent/patient would not be honest about their diet. It was also mentioned that it is very hard to change ingrained attitudes and behaviours.
- Inconsistency – Inconsistency in the media and advertising as to what foods are actually healthy was highlighted. Also inconsistency within the profession was mentioned as practitioners would vary on how strict they are with diet advice e.g. a patient stating "*Another dentist told me I could eat x, y and z*".
- Professional motivation – Interviewees felt that when the patient/parent doesn't listen or engage when getting diet advice and nothing changes it is off putting for the practitioner. Also, some practices may not have a preventative ethos at the centre of their practice.
- Time and money – Dietary advice was thought to require the provision of a lot of information during a short appointment when other practical work was needed to be done. Also, there is no financial incentive to give healthy diet advice under the current NHS contract.
- Materials – Some stated the materials they had in practice were dated and in need of modernisation. Some also stated a move to more modern methods of disseminating information was required such as Apps.

The main facilitators to this recommendation were that it was felt that children tend to be more honest and responsive to diet advice than adults. It was thought that dental therapists and hygienists were very good at giving this type of advice. Childsmile acts as a facilitator. Apps that are available can be useful and should be encouraged and the fact that a healthy diet impacts more than oral health is a facilitator.

Recommendation 4

For a child with a first permanent molar of poor life-time prognosis, take into account all relevant factors when considering the necessity and timing of extraction.

The main barriers to this recommendation were;

- Uncertainty of treatment – It was mentioned by some interviewees that there was no clear pathway and they were unsure if an orthodontic opinion was required or not before referring to hospital.
- Social Influence – Influence by colleagues who had the "Old school" way of thinking that you must save every tooth and if the "Principal always wants to hang on to teeth" was mentioned as a barrier as it could cause conflict. Also, parents don't always want their child to have a tooth extracted.
- Clinical condition of the tooth – If tooth is of poor lifetime prognosis it is most likely brittle and will break easily so they will refer it on as it's too difficult.
- Clinical ability – Some interviewees stated that they would refer it on if it looks to difficult from the x-ray. Others also mentioned physical ability "It is not all about technique it is also about strength."
- Co-operation – The opinion that some children would not be able to handle an extraction and if they had a bad experience it could put them off future treatment was mentioned as a barrier. It was also felt parents could interfere with treatment by telling the child *"You're not going to feel anything, you'll be numb, you won't feel anything*" when *"actually you will feel quite a lot"* during the extraction.
- Emotions – It can be a stressful and anxiety provoking for patient, parent and professional.
- Timing – It was felt you could miss the optimum time to extract and also referring could significantly delay treatment for the patient.

The main facilitators to this recommendation were having a proper pathway in place and the belief that you can have a quicker and better outcome than trying to drill and fill teeth. Also, patients may find it empowering having managed to have an extraction at the dentist under local anaesthetic as opposed to having it done under general anaesthetic in the hospital.

Next Steps

The Guidance Development Group considered the interview findings alongside the consultation feedback when finalising the guidance for publication. The information gathered from the interviews was used to inform pre and post publications questionnaires.

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Report Preparation

This report has been prepared by Claire Scott on behalf of TRiaDS.

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