Six Step Protocol for a Successful Infant Oral Care Visit

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Early childhood caries (ECC) is an almost completely preventable disease. However, effective prevention requires that risk indicators be identified early in young children, and oral health preventive practices implemented during infancy, no later than the emergence of the first tooth. Current recommendations by the American Academy of Pediatric Dentistry (AAPD)[1], the American Dental Association (ADA)[2], American Academy of Public Health Dentistry (AAPHD)[3], American Academy of Pediatrics (AAP)[4], and the Academy of General Dentistry (AGD) [5] call for children to see a dentist by one year of age. Unfortunately, an ADA study on the patient composition of independent practitioners indicates that children age 5 and younger account for only about 4 percent of patients seen in a general practice and approximately 6.9 percent of patients seen by specialists.[6]This trend has prevailed even as dental and health professionals recognize the growing prevalence of Early Childhood Caries (ECC).[7] Nevertheless, through the support of AAPD membership, we are noticing an increased adoption of the age one visit. In this article, we hope to remind our colleagues of the easy steps and great benefits for the provider, caregiver and the young child in implementing this practice.

As disease prevention models successfully adopt perinatal oral health practices and research continues to validate the efficacy of prevention and early intervention, well baby oral visits at age one become a natural extension of a cradle to grave comprehensive preventive care program. New mothers are apt to be more receptive to the anticipatory guidance, behavioral change and self-management goals requisite to a long-term strategy for maintaining their own and their offspring's oral health.[8] Infants are less likely to have the anxieties that 3 and 4 year olds display at their first and ensuing visits, especially if these older children present with caries or experience traumatic dental issues. Infants and parents alike will benefit from the early oral hygiene training that initiates lifetime habits such as consistent, regular dental check-ups, daily tooth brushing, optimal use of fluoride products, and the establishment of a dental home.

Untreated ECC can be consequential, leading to severe pain, infection, malnutrition, low self-esteem, and even early, tragic death. Additionally, the cost of later stage ECC treatment versus preventive care is astounding. The average cost of infant oral care visits with caries management by risk assessment, fluoride varnish, and anticipatory guidance averaged out over three years is $660, in contrast to an emergency room treatment or extensive restorations requiring sedation averaging $6,487[9]. When viewed in terms of a child's welfare, their quality of life and health, and the overall societal impact including significant financial costs, in addition to over-burdening of an already fragile health care system, the discussion regarding whether to see a child at the age of one shifts from "Should we?" to "How do we?"

In this article, we offer the reader a simple and systematic six step protocol to enhance the ease and effectiveness of infant oral visits for dental care providers.

THE INFANT WELL BABY ORAL CARE EXAM (IOCE)

An infant oral care exam is a simple six step protocol that includes:

1. Caries risk assessment;
2. Proper positioning of the child (knee to knee exam);
3. Age appropriate tooth brushing prophylaxis;
4. Clinical examination of the child's oral cavity and dentition;
5. Fluoride varnish treatment; and,
6. Anticipatory guidance, counseling and self-management goals.

1. Caries Risk Assessment

Caries risk assessment (such as using the CAMBRA interview form) would be the first element to the infant oral care exam (IOCE), and allows the family to become comfortable and acquainted with the examiner. The provider should begin by clearly explaining what will happen during the visit, what should be expected, and answer any caregiver questions on the procedures. To build rapport with the child and caregiver, the examiner should also offer positive feedback and praise to improve the caregiver's enthusiasm and reduce his/her anxiety. Once the connection is made with the caregiver, the examiner can begin gathering key information on risk factors and behaviors that, when combined with a clinical exam, will be the foundation for a treatment plan based on the child's risk for developing caries.

For example, the examiner should inquire about the:

- child's overall general health;
- availability and use of fluoridated water or supplements in the home;
- family tooth brushing routine and use of fluoridated toothpaste;
- oral health history of the child and parent including their last dental visit;
- known caries in the child, siblings and parent;
- bottle feeding and sippy cup usage including contents and frequency; and
- diet and snacking habits.

While the 2000 Caries Assessment Tool (CAT) design is based on the recommendations published by the AAPD[10], the Caries Management by Risk Assessment (CAMBRA) group has developed a risk assessment form that it is based on the principle of the

caries balance, which includes data from the parental interview, risk indicators, protective factors, and clinical findings of disease presence and progression. Regardless of the format used, it is essential that the initial interview is conducted in a respectful, nonjudgmental, culturally sensitive, and friendly manner.[11] The examiner should acknowledge and recognize the caregiver's own knowledge, life experiences, values, and valid viewpoints. It is crucial to listen carefully to caregivers' ideas and family perspectives as well as to discuss oral health using culturally and linguistically appropriate communication tools.

Introduction of anticipatory guidance should also be provided during the interview when appropriate, as indicated by the caregiver's responses to questions.[11] Any significant findings, especially for any medications or special needs, should be documented at the interview.

2. Proper Positioning of Child

Proper positioning of the child for the clinical exam and the application of fluoride is critical to the success of the visit. In general, the Knee-to-Knee position should be used for children ages 6 months to 3 years, or up to age 5 for children with special needs. Children older than 3 years can sit forward on their caregiver's lap or sit alone in a chair.

Examiners and caregivers need to work together to transition the child smoothly from the interview to the exam. Explain what will happen (Tell, Show and Do) prior to starting, and anticipate that the child may cry, since that is developmentally appropriate for babies.

Knee-to-Knee positioning includes:

- Dentist/examiner and caregiver sit facing each other, knee to knee;
- The child sits in his caregiver's lap facing the caregiver;
- With the caregiver holding the child's hands in theirs and the child's legs wrapped around the caregiver's waist, the child's body is laid down on the caregiver's lap;
- The child's head lays in the lap of the examiner;
- The caregiver continues to hold the child's hands in each of her hands and uses her arms/elbows to hold child's legs steady against her waist; and,
- The examiner can then position the child's head and prompt him to open his mouth for the tooth brushing prophylaxis.

3. Age Appropriate Tooth Brushing Prophylaxis

The examiner retracts the child's lips and cheeks during tooth brushing and demonstrates this technique, along with the proper way to brush his/her child's teeth to the caregiver. The spongy handle of an age-appropriate sized toothbrush can be used to prop open the child's mouth. During this "Tell-Show-Do" encounter, encourage the caregiver to brush her own and her child's teeth at least twice a day, especially before bedtime, and remind the caregiver to use a small dab (pea-sized) of fluoride toothpaste when brushing.

4. Clinical Exam of the Oral Cavity and Dentition

The examiner counts the child's teeth aloud, using the toothbrush handle as a mouth prop if necessary. Many providers make a game of this task, singing songs, engaging the child's attention, and if all else fails, distracting the child with a brightly colored toothbrush or toy. Praise the child at each step for her cooperation and good behavior.

During the assessment of the child's oral condition, in addition to a soft tissue exam, the following information should be documented:

- Visible plaque and location;
- Chalky white spots;
- Brown spots that indicate decay;
- Tooth defects; deep pits/fissures; tooth anomalies;
- Oral and other tooth abnormalities;
- Missing and decayed teeth;
- Existing restorations;
- Untreated caries and/or defective restorations;
- Presence of and location of gingivitis;
- Presence of and location of soft tissue abnormalities;
- Occlusal status; malocclusion or developmental pathology; and,
- Indications of trauma.

If facilities and resources permit, the assessment should also include a salivary analysis, which may include a measurement of *S. mutans*, Lactobacilli levels, or the acidogenic potential of biofilm. There is still the paramount need of a user-friendly, cost-effective and chair-side salivary test, that can assist the caregiver and the provider to assess risk based in a quantifiable mode. The clinical exam results should be combined with data gathered during the caregiver interview to ascertain caries risk, determine an oral diagnosis, and formulate an individual treatment plan.

5. Fluoride Varnish Treatment

Children categorized as moderate to high risk should be given a full-mouth topical fluoride varnish and be recommended for re-application every three months, and at a minimum of every six months, even if the child lives in a community that already receives the benefits of water fluoridation. The provider should reiterate the cumulative benefit of the fluoride varnish, even if it has been mentioned earlier in the visit. After application, the caregiver should be reminded to not allow the child to drink for 30 minutes after treatment to allow the fluoride varnish to be effective.

6. Anticipatory Guidance, Counseling, and Self-Management Goals

The visit should end on a positive note. Sit the child back up and praise him for doing a great job and provide a reward for her, e.g. sticker, toy, etc.

Six areas based on age and risk should be discussed with the parent/caregiver:

a) Oral Health and Hygiene

b) Oral Development

c) Fluoride Adequacy

d) Oral Habits

e) Diet and Nutrition

f) Injury Prevention

A final discussion with the caregiver should also include:

- Results of the risk assessment interview and clinical exam. Discuss what risk level means to the child's long-term oral health, and answer any questions the caregiver may have regarding a treatment plan that may include restorations, extractions, etc.;
- Key messages for good oral health (such as: Eat a healthy diet and limit the frequency of sugary snacks and drinks);
- Preventive counseling by offering customized preventive recommendations and a mutually-agreed upon self-management plan established with the caregiver (self management goals include providing healthy snacks, brushing with fluoride toothpaste at least twice daily, etc.).

Table 1 Risk Based Prevention Recommendation

	LOW RISK	MEDIUM RISK	HIGH RISK
FOLLOW UP VISITS	**6 MONTHS**	**3 MONTHS**	**3 MONTHS**
Fluoride Treatment	**Annually**	**2 to 4 times per year**	**3 to 4 times per year**
Disease Treatment	**Not Applicable**	**Review current status, e.g. pre-cavitated lesions,special needs, etc. Reiterate extra care steps that may be required.**	**Establish treatment plan for dental problems uncovered in exam**
Anticipatory Guidance and Self Management Goals	**Encourage caregiver to maintain healthy oral health practices**	**Review and ask caregiverto commit to achieving one or two goals**	**Review and ask caregiver to commit to achieving two goals**

SUMMARY

Similar to the well baby pediatrician visit, the infant well baby oral care exam (IOCE) at age one provides children with an introduction to the routine care that is the foundation to their lifelong oral health and physical wellbeing. In addition to the childhood complications of ECC, untreated caries can have a serious future impact on health as children mature into adults, such as by contributing to the development of heart disease, increasing the risk of stroke, increasing a woman's risk of having a preterm, low birth-weight baby, and posing a serious threat to people whose health is already compromised by diabetes, respiratory diseases, HIV/AIDS, or osteoporosis.[12] Comparable to a pediatrician counseling new parents on the care and development of their infant, dentists need to see patients as infants and provide their caregivers with anticipatory guidance to establish essential oral habits that include regular dental exams.

The AAPD has been a leader in advocating an IOCE visit and the establishment of a dental home by age one. While it has been effective in collaborating with other national organizations to support the same recommendation, more continuous work is needed to gain greater widespread support on the national, state, and local community levels, and to develop acceptance by payers and the establishment of guidelines and minimum coverage requirements by private insurance companies for payment of preventive dental care for children including infants. The AAPD can use its voice to exert its expertise in supporting the development of a new practice paradigm based on prevention.

A growing body of evidence supports the fact that an early oral health intervention program, consisting of caries risk assessment (e.g. CAMBRA), a clinical exam, and a treatment plan based on a child's caries risk level, is efficacious in the prevention of ECC. Unfortunately, unlike well baby medical check-ups, well baby IOCE's are presently not universally accepted.

Universal adherence to an Infant Oral Care Exam by age one and consequent recall visits is an important first step in reducing and preventing early childhood caries. We hope that care providers will find the 6 step protocol to be useful, and will incorporate its principles of risk assessment and customized prevention into their everyday clinical practice.

This article is the sixth in a series facilitated by AAPD and Children's Dental Health Project's Improving Perinatal and Infant Oral Health Project. The project is a five year Maternal and Child Health Bureau-funded initiative to promote the oral health of pregnant women and infants, and to increase public awareness of the importance of perinatal and infant oral health. Please watch for additional articles authored by members of the Ad Hoc Committee on Perinatal and Infant Oral Health in future editions of Pediatric Dentistry Today. For more information on the Project or to become involved, please contact Dr. Ned Savide, Chair of the Ad Hoc Committee on Perinatal and Infant Oral Health at NLSavide@aol.com or Jessie Buerlein, Director, at jbuerlein@cdhp.org.