

# Interprofessional Collaboration in Anticipatory Guidance for the Prevention of ECC

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**Abstract:** To ensure that young children receive thorough care and education to maintain good oral health, interprofessional teamwork in anticipatory advice for ECC prevention is essential. If ECC is not treated in a timely manner, it can have long-term implications on a child's dental health and is also referred to as baby bottle teeth decay or cavities in young children. Clear communication, common goals, and a coordinated strategy are necessary for interprofessional collaboration to effectively address ECC prevention. To avoid ECC and encourage early intervention and education for parents and carers, it is crucial that all professionals involved in the care of young children are aware of their individual responsibilities and collaborate in this effort.

**Keywords:** Interprofessional collaboration, Anticipatory guidance, ECC(early childhood caries)

## 1. Introduction

Early childhood caries (ECC) is a devastating dental caries of childhood affecting children worldwide with a prevalence upto 50%<sup>1, 2</sup>. This is also known as Early childhood tooth decay, early childhood caries, baby bottle syndrome, early childhood dental decay, comforter caries, nursing caries(maternally derived streptococcus mutans disease), maxillary anterior caries mainly due to the age of involvement and the typical etiologic factors causing caries. This is a preventive disease if awareness is created by multiple caregivers of a child, as the child is dependent on them for their basic needs and health.

Early childhood caries (ECC) is defined as the presence of one or more decaying (cavitated or non- cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child aged 71 months or less. In children younger than 3 years, any sign of smooth surface caries is indicative of severe ECC. From ages 3-5 years, one or more cavitated, missing, or filed smooth surfaces in primary

anterior teeth, dmfs (decayed, missing, filled tooth surfaces) score of >4 (age 3), >5 (age 4), or >6 (age 5) surfaces constitute severe ECC<sup>1, 2</sup>.

This comes under rampant caries due to the sudden onset, a widespread nature and rapidly burrowing type of spread with early involvement of pulp including teeth that are immune to ordinary caries. So efforts have to be taken to halt its spread or to prevent complications like abscess, cellulitis, malnutrition, anemia, psychosocial problems and mental abuse due to peer pressure<sup>1</sup>.

This rampant nature and spread calls for a multifactorial interprofessional collaboration to prevent the disease as it has typical pathognomic etiological factors that requires multiple people working as a team to act as stake holders involving the caregiver/mother, gynecologist, pediatrician, nurses, pedodontist, asha workers, Anganwadi teachers and certain programs like lift the lip, Caries management by risk assessment, government policies<sup>1</sup>.

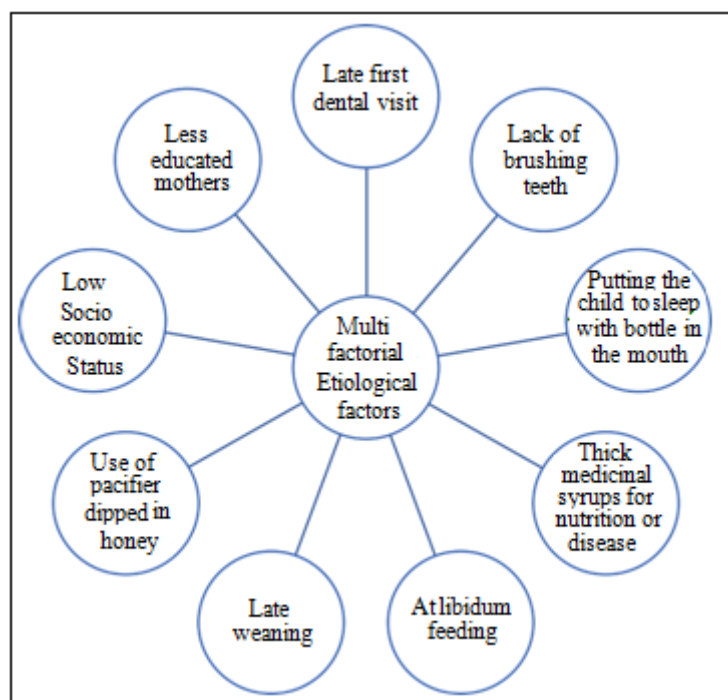


Figure 1: Etiological factors for ECC

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Anticipatory guidance is a proactive counseling approach used by health professionals to educate parents and caregivers about developmental changes that will occur in the children. Anticipatory guidance can be an effective tool in the prevention of early childhood caries (ECC) and it mainly focuses on:

- Education on oral hygiene practices: Health professionals can educate parents and caregivers about the importance of good oral hygiene practices, such as brushing and flossing, and the role of fluoride in preventing tooth decay.
- Dietary counseling: Health professionals can provide guidance on healthy eating habits and the avoidance of sugary drinks and foods, which are major contributors to ECC.
- Early intervention: Health professionals can identify children at risk of developing ECC and provide early intervention protocols for parents and caregivers to follow.
- This can include regular dental check-ups, the application of topical fluoride, and oral hygiene instructions
- Establishment of a dental home: The establishment of a dental home can help parents and caregivers access regular dental care for their children, which can help prevent ECC
- Periodic follow-up and reinforcement: Sustained anticipatory guidance (SAG) can be delivered to parents and caregivers to provide cost-effective sustained interventions at an early age, which can be effective in preventing ECC<sup>3</sup>.

When discussing anticipatory advice for "pre-three" children—children under the age of three—a list of topic areas and the knowledge base required for each area should be taken into consideration. Process of advising the parent or caretaker about the child's significant health milestones. Oral health education, professional exams, preventative treatments, and dietary suggestions are all part of this service. It encourages growth and development, prevents cavities, and improves overall oral health.

This facilitates the relationship between the physician and the parent. The primary aims of medical- dental collaboration are to make it simpler to establish a dental home with the dentist, avoid disease, and receive treatment for diseases that are already present, because oral health is important for general health.

Anticipatory guidance can be an effective tool in the prevention of ECC, and by tailoring the information to parents' needs and preferences, using clear and simple language, providing visual aids, encouraging questions and feedback, and providing anticipatory guidance during routine visits, health professionals can effectively communicate the importance of preventing ECC to parents and caregivers<sup>4</sup>.

Programmes to promote children's dental and general health must contain the following components:

- Dietary advice given by health experts to limit children's excess sugar, salt, and fat consumption in order to promote proper growth and development<sup>5</sup>.
- Health professional education should involve skill development in nutrition promotion and counselling in support of oral and general health.

Some of the misconceptions about ECC that can be addressed through anticipatory guidance are: ECC affects only the deciduous dentition, ECC is solely caused by poor oral hygiene, ECC is not preventable<sup>3</sup>

Interprofessional collaboration is when a group of healthcare experts from varied backgrounds work together to provide the highest quality of care to patients, their families, carers, and communities, they provide comprehensive services. Effective communication of anticipatory guidance about early childhood caries (ECC) to parents can help prevent the development of this condition in children.

Interprofessional collaboration can be effective in preventing ECC through the following ways:

- Collaboration between dental and medical professionals: Collaboration between dental and medical professionals helps in providing a comprehensive approach to ECC prevention and can help identify children at risk of developing ECC and provide early intervention protocols for parents and caregivers to follow<sup>7</sup>.
- Through interprofessional collaboration, healthcare professionals can share their knowledge and expertise in ECC prevention and anticipatory guidance. This collaboration allows for a more comprehensive understanding of the condition and enables professionals to provide accurate and up-to-date information to parents and caregivers<sup>7,11</sup>.
- Collaboration between dental professionals and community organizations: Collaboration between dental professionals and community organizations can help increase access to dental care for children from disadvantaged backgrounds, who are more prone to ECC. Community organizations can also provide education and resources to parents and caregivers about proper oral hygiene practices and healthy dietary habits<sup>10</sup>.
- Collaboration between dental professionals and educators: Collaboration between dental professionals and educators can help promote good oral health practices in children by incorporating oral health education into school curriculums<sup>1, 3, 4, 5</sup>.



**Figure 2:** The interprofessional collaboration team

**Mothers:** They are the main stakeholders in the collaboration framework. Her role is very pivotal in prevention of this devastating disease. Since she is the main caretaker, Awareness on oral health and the etiological factors due to her educational background and socio-economic status can be a risk, So motivational interviewing, dental home, and anticipatory guidance can completely help in preventing the disease. Parents are role models capable of setting eating behaviours at home by providing high-quality meals and having fruits, vegetables, and other healthy foods available as snacks. Anticipatory guidance can focus on educating mothers about the causes and consequences of ECC, as well as the importance of good oral hygiene practices and healthy dietary habits. Mothers can be guided on proper feeding practice and oral hygiene practice and working in collaboration for their children, including nutrition, brushing their teeth twice a day with fluoride toothpaste and flossing. They can also be encouraged to supervise and assist their children with brushing and preventive protocols until they have the dexterity to do it effectively on their own. Scheduled regular dental checkups for their children ,wiping the gums after feeding and avoiding putting the child to bed with a bottle, preventing pacifiers dipped in honey, avoiding fruit juice in bottle, substitute last sip of milk in bottle with water, asking to rinse after sweetened syrups are given, early weaning.

**Gynecologist:** The role of a gynecologist in prevention of ECC begins in utero. By giving proper nutritional supplements for stronger teeth in utero, development of teeth, prevention of molar incisor hypomineralisation and enamel hypoplasia that predisposes to caries prevention and low birth weight and anemia that also cause caries. Dental caries susceptibility and prevention is accountable to texture and consistency of the organic and inorganic constitution of the tooth and the formation in vitro will be directly proportional to the nutrition factors affecting the enamel like Ca , Vit A , B, E.

**Pediatrician:** Pediatricians play a pivotal role in early childhood caries (ECC) prevention. They usually check the oral cavity even before a pedodontist as a routine checkup during post natal care. They can avoid prescribing very thick sugary syrups or if inevitable insist on a sip of water or brushing after the medicine. They can be trained to diagnose the white spot lesion of ECC and insist on avoidance of risk factors that can reverse the first stage of ECC. They can educate and provide anticipatory guidance to parents and caregivers about the importance of good oral hygiene practices, healthy dietary habits, and regular dental check-ups. They can also identify children at risk of developing ECC and provide early intervention protocols for parents and caregivers to follow. Pediatricians can collaborate with other healthcare professionals, such as pedodontists and gynecologists, to ensure a comprehensive approach to ECC prevention. They can share information and work together to provide consistent guidance to parents and caregivers regarding oral health practices and ECC prevention. Pediatricians can provide sustained anticipatory guidance (SAG) to parents and caregivers to provide cost-effective sustained interventions at an early age, which can be effective in preventing ECC. This can include periodic follow-up and reinforcement to prevent and diagnose ECC. They can assess the child's risk factors for ECC, such as low socioeconomic status, poor oral hygiene, inadequate fluoride exposure, and consumption of sugary drinks and foods. Pediatricians can use predictive models to identify children at greatest risk for ECC.

**Pedodontist:** They are the primary group of people capable of dealing with the typical pathognomic etiological factors which helps in breaking the tetralogy in preventing and controlling ECC. They are the second important stakeholders who have to be well collaborated with regular networkings with all other stake holders.

- 1) The role of a pedodontist starts from the prenatal stage by collaborating and insisting on the prevention of dental caries and to reduce the caries activity in pregnant mothers. -Maternal oral health and caries status have a

negative impact on an infant's oral health due to vertical and horizontal transmission of streptococci mutans. They can provide guidance on strategies to reduce bacterial transmission, such as avoiding shared utensils on avoidance of etiological factors through wrong feeding practices.

- 2) The pedodontist should insist the parents to get their child for the first dental visit by their first birthday or within six months of the eruption of their first tooth. This will aid in the establishment of a dental home, the child will become familiar with the dental clinic, dentist, and people around them, which will foster a positive attitude in them. This early visit allows the pedodontist to assess the child's oral health, provide anticipatory guidance to parents, and establish a dental home for ongoing care and prevention.
- 3) Pedodontists can use motivational interviewing techniques to engage parents and caregivers in discussions about oral health and ECC prevention. They can raise awareness about the importance of good oral hygiene practices, healthy dietary habits, and regular dental visits.
- 4) Pedodontists can provide guidance on proper dietary practices to prevent ECC. They can advise parents and caregivers to limit sugary drinks and foods, encourage a balanced diet rich in fruits and vegetables, and promote healthy feeding practices, including avoiding prolonged bottle-feeding and nighttime bottle use.
- 5) Pregnant mothers advised about healthy diets and infants feeding practices, emphasising the importance of breastfeeding and the requirement of reducing nighttime bottle feeding to reduce caries risk.
- 6) Pedodontists can employ minimal intervention dentistry techniques to remineralize initial caries lesions. This approach focuses on non-invasive methods, such as fluoride application and the use of remineralizing agents, to halt or reverse the early stages of tooth decay.
- 7) Pedodontists can perform caries risk assessments to identify children at high risk for ECC. They can use tools and tests to evaluate factors such as oral hygiene, diet, fluoride exposure, and previous caries experience. This assessment helps tailor preventive strategies to the individual child's needs.
- 8) Pedodontists can apply pit and fissure sealants to the chewing surfaces of permanent molars to prevent decay. Sealants act as a protective barrier, sealing off the deep grooves and preventing bacteria and food particles from getting trapped.
- 9) Minimally invasive approaches preserve tooth structure and prevent the progression by avoiding complications like abscess.
- 10) In cases where a child is at high risk for ECC or has extensive decay, pedodontists may recommend stainless steel crown placement. This helps protect the affected tooth and prevent caries in the initial stage.
- 11) Pedodontist plays a significant part in the prevention of dental phobia of injection and extraction. Which sets a foundation for the future pediatric practitioner.

**Primary health care workers and Asha workers:** Primary health care workers and ASHA workers (Accredited Social Health Activists) play a crucial role in early childhood caries (ECC) prevention through:

- Community mobilization and awareness - Primary health care workers can work with ASHA workers to raise awareness about the importance of good oral health practices, healthy dietary habits, and regular dental visits
- Identification of high-risk children -through regular check-ups and assessments. Insist mother for first dental visit and regular dental checkups. They can use risk assessment tools to evaluate factors such as oral hygiene, diet, fluoride exposure, and previous caries experience, lift the lip program and diagnose ECC.
- They must provide counseling and education to parents and caregivers about proper oral hygiene practices and healthy dietary habits. They can also provide guidance on appropriate feeding practices, including avoiding prolonged bottle-feeding and nighttime bottle use and create awareness on prevention<sup>14, 15, 16, 17</sup>.

Their expertise in community mobilization, identification of high-risk children, and provision of anticipatory guidance and counseling contribute to promoting good oral health practices and reducing the risk of ECC in children.

In Conclusion, ECC is a condition with multifactorial cause involving multiple specialities so the Interprofessional collaboration is essential in the prevention of early childhood caries (ECC).

Anticipatory guidance provided by healthcare professionals, including dentists, physicians, nurses, community organizations, educators, gynecologists, pedodontists, primary health care workers, and ASHA workers, can help prevent the development of ECC in children. By working together, healthcare professionals can provide a comprehensive approach to ECC prevention, including education on proper oral hygiene practices, healthy dietary habits, regular dental check-ups, and the use of preventive measures such as fluoride application, dental sealants, and oral hygiene instructions. Collaboration among healthcare professionals can also lead to the integration of oral health services into primary health care centers, community-based interventions, and the incorporation of oral health education into school curriculums. By tailoring the information to parents' needs and preferences, using clear and simple language, providing visual aids, encouraging questions and feedback, and providing anticipatory guidance during routine visits, healthcare professionals can effectively communicate the importance of preventing ECC to parents and caregivers. Hence the future lies not working in silos but as a team by the interprofessional collaboration. The idea is to treat the child and not just the tooth. "Every child has a right to complete oral health and as a Pedodontist it is our obligation to fulfil it".

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