# National Guideline for the Application of Fluoride Varnish for Children Six Years and Below

Oral Health Unit
Family Health Bureau
Ministry of Health
Sri Lanka

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## Second Edition

**Oral Health Unit**
**Family Health Bureau**
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**Sri Lanka**
**2024**

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**Family Health Bureau,**
**Ministry of Health,**
No. 231,
De Saram Place, Colombo 01000, Sri Lanka,
Tel.No: +94 112 681 309 / +94 112 696 677
mail: info@fhb.health.gov.lk
Website: https://www.fhb.health.gov.lk/index.php/en/

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# Preface

Early Childhood Caries is a major oral health problem among young children because of its high prevalence and impact on quality of life. Dental caries in young children can lead to unwanted pain, poor nutrition and medical complications. According to available information, the prevalence of ECC in Sri Lanka ranges from 23% in infants to 65% in 5-year-olds. Major factors contributing to the high prevalence of ECC in developing countries include poor socioeconomic status, which is closely linked with poor parental education, poor hygienic practices, unhealthy dietary habits, and limited availability of dental services. Among preschool children, there has been a very slow improvement in oral health.

Fluoride varnish is recommended as a community-based caries preventive programme for young children. This fluoride varnish programme targets children six years and below in high-risk communities to reduce the prevalence and severity of dental caries. It is hoped that this will further enhance the effectiveness of early childhood oral healthcare programme to address the disparity in oral health status of young children in Sri Lanka.

The purpose of this manual is to guide oral health personnel on the implementation, monitoring and evaluation of the fluoride varnish programme for children six years and below. I extend my warm appreciation to the working committee members for their commendable effort and to all who have contributed directly or indirectly to the preparation of this manual.

I would like to thank Dr. J.M.W. Jayasundara Bandara, Project Director of the Primary Healthcare Strengthening Project, for providing financing for publishing the guideline book, procuring fluoride varnish, and conducting in-service training programs around the island.

**Dr. Chitramalee de Silva**
Director, Maternal and Child Health
Family Health Bureau

**Dr. Nimali Wellappuli**
Consultant in Community Dentistry
Oral Health Unit
Family Health Bureau

## Message from the Director General of Health Services, Ministry of Health

The oral health programme catering to the children within the maternal and child health program spearheaded by the Family Health Bureau is currently in the process of further strengthening the preschool and school oral health program during the current economic crisis.

Caries in primary dentition constitute a global public health challenge as one of the most common chronic childhood diseases affecting toddlers, preschool children and primary school children in many parts of the world, including Sri Lanka. Moreover, the highest burden of dental caries is carried by high-risk, socially disadvantaged children. As a consequence, moderate to severe forms of caries in primary teeth are debilitating, giving rise to an array of negative consequences such as pain, sepsis, space loss, speech problems, failure to thrive, effects on intellectual development, greater risk for caries of permanent teeth, repeated infections, higher incidence of emergency visits and hospitalization with increased treatment costs and impaired quality of life of children and their general health status. Fluoride varnish can prevent cavities from getting worse and stop cavities from forming. This treatment has been proven to reduce the prevalence of dental caries in deciduous teeth by 37% and in permanent teeth by 43%. As fluoride varnish treatment is quick, simple, and non-invasive, this can be performed in any setting.

This guideline for applying fluoride varnish in the school health program will provide the necessary guidance for the primary oral health care staff and the other indicated responsible officers on effectively providing fluoride varnish in different healthcare settings.

It is my utmost pleasure to wish the Family Health Bureau for the publication of this worthy manual. I wish to assure my fullest support to all involved in producing this manual, which would help the healthcare providers in their endeavour to establish a standardized and risk-based fluoride varnish application strategy for the prevention and management of early childhood caries in young children in Sri Lanka.

**Dr. Asela Gunawardena**
Director General of Health Services
Ministry of Health, Sri Lanka

## Message from the Deputy Director General (Dental Services)

According to the last National Oral Health Survey conducted in 2015/2016, the percentage of individuals with total caries experience (DMFT>0) was 63.1% among the 5-year-olds. Untreated Early Childhood Caries can lead to abscesses, pain, and malocclusion. High Early Childhood Caries prevalence in children results in disturbance in education and parents' absenteeism from work. The cost of treatment is also a burden to a country like Sri Lanka, which offers health facilities free of charge.

School Dental Service is a well-established dental service in Sri Lanka. However, without exception, it is being affected by the current major economic crisis, similar to other health programmes in Sri Lanka. Implementing cost-effective interventions such as blanket fluoride varnish applications for preschool and school children will reduce prevalence of dental caries in the children. Therefore, integrating a systematic approach to applying fluoride varnish in children six years and below in the existing dental services would facilitate the current school dental services to enrich its discernible preventive oral health care components.

This guideline for applying fluoride varnish in the school health programme will provide the technical knowledge and skills necessary for school dental therapists and dental surgeons to apply fluoride varnish in young children.

It is my utmost pleasure to thank the oral health unit of the Family Health Bureau for taking the necessary actions to strengthen the existing school dental services and for compiling this timely manual.

**Dr. Ananda Jayalal**
Deputy Director General (Dental Services)
Ministry of Health, Sri Lanka

## Working Committee

### Department of Health

| | |
|---|---|
| Dr. Ayesha Lokubalasooriya | Consultant Community Physcian,<br>Head, School Health Unit,<br>Family Health Bureau |
| Dr. Udaya Usgodaarachchi | Consultant in Community Dentistry,<br>National Cancer Control Programme,<br>Elvitigala Mawatha, Colombo 05 |
| Dr. Irosha Perera | Consultant in Community Dentistry, Preventive Oral Health Unit,<br>National Dental Hospital (Teaching), Colombo |
| Dr. Prasanna Jayasekara | Consultant in Community Dentistry,<br>Research and Surveillance Unit,<br>Institute of Oral Health, Maharagama |
| Dr. Nilantha Ratnayake | Consultant in Community Dentistry,<br>Preventive Oral Health Unit,<br>Institute of Oral Health, Maharagama. |
| Dr. Nimali Wellappuli | Consultant in Community Dentistry,<br>Oral Health Unit, Family Health Bureau |
| Dr. Nirosha Ranasinghe | Consultant in Community Dentistry,<br>Oral Health Unit, Health Promotion Bureau |
| Dr. Uttara Amilani | Consultant in Community Dentistry,<br>National Institute of Health Sciences, Kalutara |
| Dr. Danushi Wickramasinghe | Consultant in Community Dentistry,<br>Office of the Director (Dental Services),<br>Ministry of Health |
| Dr. Shanika Mututanthri | Consultant in Community Dentistry,<br>Training Unit, Institute of Oral Health,<br>Maharagama |
| Dr. Ama Nanayakkara | Senior Registrar, Office of the Provincial Director of Health Services, Western Province |

| | |
|---|---|
| Dr. Niranjala Amarasena | Registrar in Community Dentistry,<br>Oral Health Unit, Family Health Bureau |
| Dr. Champa Senanayaka | Principal, Dental Therapist Training School, Maharagama. |
| Dr. Mahinda Tennakoon | Regional Dental Surgeon, Regional Director of Health Services, Kurunegala |
| Mrs. Padma Jayasinghe | Supervising School Dental Therapist,<br>Regional Director of Health Services, Gampaha |
| **Universities** | |
| Prof. Chandra Herath | Professor in Paediatric Dental Sciences, Faculty of Dental Sciences, University of Peradeniya |
| Dr. Dilini Ratnayake | Senior Registrar, Faculty of Dental Sciences, University of Peradeniya |
| **Professional Bodies** | |
| College of Community Dentistry of Sri Lanka | |
| Association of Restorative Specialists in Sri Lanka | |

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- Prof. Lilani Ekanayake, Professor Emeritus, Faculty of Dental Sciences, University of Peradeniya in Dental Public Health
- Dr. Hiranya S. Jayawickrama, Consultant Community Physician, Child Nutrition Unit, Family Health Bureau
- Dr. Ajith Alagiyawanna , Consultant Community Physician, Head, NCD, Lifestyle, Social Media and Community Health Promotion Unit, Health Promotion Bureau
- Dr. Chandima Weerasekara, Consultant Orthodontist, Head, Department of Community Dental Health, Faculty of Dental Sciences, University of Peradeniya
- Dr. Asanthi Balapitiya Fernando, Consultant Community Physician, Head, Media and Publicity Unit, Health Promotion Bureau
- Dr. Ashan Pathirana, Registrar in Community Medicine, Health Promotion Bureau
- Dr. Achini Thilakaratne, Child Nutrition Unit, Family Health Bureau
- Dr. Kamani Ruhunage, Dental Surgeon, Oral Health Unit, Family Health Bureau
- Dr. Nisansala Gunathilake, Dental Surgeon, Oral Health Unit, Family Health Bureau
- Dr. Ruvini Athaudage, Dental Surgeon, Oral Health Unit, Family Health Bureau
- Dr. Hasini Vimansa Ratnayake, SHO/Paediatric Dental Clinic, Division of Paedodontics, Faculty of Dental Sciences, University of Peradeniya
- Mr. M.R.A. Ashkar, Technical Officer, Department of Community Dental Health, Faculty of Dental Sciences, University of Peradeniya
- Mrs. Ayesha Jayawardena, School Dental Therapist, Ananda Balika Maha Vidyalaya, Pitakotte
- Mr. Nalaka Sanjeewa Nanayakkara, Audio Visual Operator, Health Promotion Bureau
- Teachers and children of a preschool, Borella
- Mrs. Swarnalatha De Zoysa, Oral Health Unit, Family Health Bureau

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# List of Abbreviations

| | |
|---|---|
| ECC | Early Childhood Caries |
| FV | Fluoride Varnish |
| CWC | Child Welfare Clinic |
| CHDR | Child Health Development Record |
| SDTT | School Dental Therapists |
| PHMM | Public Health Midwives |
| PHI | Public Health Inspector |
| MCH | Maternal and Child Health |
| MOH | Medical Officer of Health |
| RDS | Regional Dental Surgeon |
| ADC | Adolecent Dental Clinic |
| CDC | Community Dental Clinic |
| HDC | Hospital Dental Clinic |
| SDC | School Dental Clinic |
| DS | Dental Surgeon |
| OPD | Out Patient Department |
| ETU | Emergency Treatment Unit |
| eRHMIS | Electronic Reproductive Health Management Information System |

# Chapter 1

# Introduction

## 1.1. Early Childhood Caries (ECC)

Early Childhood Dental Caries is the presence of one or more decayed, missing, or filled primary teeth in children aged 71 months (six years) or younger. It is a major, chronic, infectious oral disease affecting young children, infants and preschool children worldwide and constitutes a serious public health problem.

It has several unique characteristics in clinical appearance. It develops rapidly on tooth surfaces usually at low risk for caries, such as the labial surfaces of maxillary incisors and lingual and buccal surfaces of maxillary and mandibular molars. ECC initially presents as dull white or brown spots on maxillary incisors along the gingival margin, progressing rapidly to complete crown destruction, leading to root stumps. Further, it affects several teeth soon after they erupt into the oral cavity[2].

Several terminologies describe the condition, such as nursing bottle caries, rampant caries, baby bottle caries, baby bottle tooth decay, milk bottle syndrome, and prolonged nursing habit caries[3].

The etiology of ECC is multifactorial[4]. Cariogenic microorganisms, exposure to fermentable carbohydrates/ high sugar intake, inappropriate feeding practices, lack of oral hygiene, lack of fluoride exposure, enamel defects and a range of socio-environmental variables are some major factors responsible for ECC[5,6].

Children with ECC are subjected to recurrent oral pain, poor growth and nutrition, speech problems, behavioural disorders and alterations in learning development with negative consequences on their well-being and quality of life and their families and society[7]. Furthermore, treatment of ECC also requires multiple dental visits and sometimes sedation or general anaesthesia, resulting in a substantial economic burden to the family and health services,[9].

**Epidemiology of ECC in Sri Lanka**

Although there has been a declining trend of prevalence and severity of dental caries over the years among all age groups in Sri Lanka, a substantial burden of ECC is still prevalent among young children. Nearly 63% of 5-year-olds experienced early childhood dental decay in their primary teeth, and 96% of this decay has not been treated[10]. On average, three teeth are decayed in children aged five years.

As the average age of tooth eruption among Sri Lankan infants is estimated to be 9 months and ECC can develop even at an early age of 1 year. Therefore the prevention of this condition among Sri Lankan children is very important.

### 1.2. Management of ECC by Using Fluoride

Young children do not cooperate fully during dental treatments. Therefore, management of ECC should be aimed to reverse the disease process and prevent or slow the progression of carious lesions to cavitation and tooth destruction.

Fluoride has three main mechanisms of action for preventing dental decay: promoting enamel remineralization, reducing enamel demineralization, and inhibiting bacterial metabolism and acid production[11].

ECC can be managed effectively by regularly applying fluoride varnish on the primary teeth among young children with ECC or teeth with signs of early caries.

### 1.3. Fluoride Varnish (FV)

Fluoride varnish is one of the best options for increasing topical fluoride availability regardless of the fluoride levels in any water supply. The effectiveness of fluoride varnish on prevention of dental caries in both primary and permanent dentitions is apparent[12,13]. Several systematic reviews conclude that applications twice a year produce an average reduction in dental caries increment of 37% in the primary and 43% in the permanent dentition[14].

Fluoride varnish is an appropriate, professionally applied topical fluoride agent. Oral healthcare professionals can control the amount of fluoride varnish being used. Therefore, it is known as an appropriate professionally applied topical fluoride agent of choice.

Regular application of fluoride varnish can prevent the development of new caries in primary teeth.

Fluoride varnish can help to remineralize early enamel lesions due to its high fluoride concentration (approximately 22 600 ppm)[15].

**Advantages of Fluoride Varnish**

- Fluoride is the single most effective tool that prevents dental caries.
- Does not require standard dental equipment.
- It is an inexpensive preventive measure.
- Does not require a professional dental cleaning prior to application.
- Easy to apply.
- Sets immediately upon contact with saliva.
- Minimal ingestion during and after treatment.
- It enhances the remineralization of the tooth surface.
- Safe, and the taste is well tolerated by infants, young children, and individuals with special needs.
- Placement requires minimal training.
- School dental therapists and dental surgeons can apply the varnish after an oral screening.

### 1.4. Rationale

Early childhood caries is one of the most common preventable diseases and is on the rise worldwide.

Further, maintaining healthy primary dentition is essential for well-being of the child. Primary dentition is required for proper mastication, esthetics, phonetics, space maintenance, and the prevention of aberrant habits.

The ECC can be prevented by reducing dental plaque formation by educating parents regarding decay, promoting feeding behaviours, maintaining good oral hygiene, modifying dietary habits through diet counselling, and using preventive agents like topical fluorides[16].

Among all topical fluorides, fluoride varnish is an easy, effective, and safe way to protect children's teeth and prevent cavities. Fluoride varnish treatment is painless and

can be easily performed by auxiliary dental personnel[17]. Fluoride varnish enhances the remineralization of enamel in initial caries, reduce demineralization through inhibiting bacterial metabolism and reduce the growth of plaque bacteria[18].

The management of ECC is an expensive, often requiring extensive restorative treatments and extraction of teeth at an early age. General anesthesia or deep sedation may sometimes be required, and young children cannot cope with the extensive treatment procedures[19].

Further, Sri Lanka is striking through a major economic crisis with a rising trend of oral diseases and a breakdown of public oral health care services due to a shortage of essential dental material and equipment. So, it is important to add the value and potential impact of this programme for easing the overstretched public dental health budget.

Introducing the fluoride varnish programme aims to prevent early childhood caries in young children in Sri Lanka. The programme invariably supports enhancing remineralization of initial caries, reversing incipient carious lesions, and arresting the progression of cavitated lesions.

This manual aims to guide oral health personnel in the Ministry of Health on implementing, monitoring, and evaluating the fluoride varnish programme for children six years and below in Sri Lanka.

# Chapter 2

# Aim and Strategies of the Programme

## 2.1. Aim

To establish a standardized fluoride varnish initiative as an integral part of the Early Childhood Oral Healthcare Programme to reduce the levels of Early Childhood Caries among children six years and below and thereby improve their oral health status and oral health-related quality of life.

## 2.2. Strategies

- Integrate the fluoride varnish programme with the existing school dental services and Maternal and Child Health Care Programme (MCH); such a strategy would facilitate the existing school dental services to enrich its' discernible components of preventive oral health care.
- Monitoring and evaluation of the school dental services based on preventive oral health care indicators related to the fluoride varnish programme.
- Develop and incorporate clinical preventive dentistry module into the Higher Diploma in Dental Therapist Training Programme.
- Include hands-on training in in-service training programmes for dental surgeons and school dental therapists.
- Public awareness, especially among parents of the children in the target group, preschool and school staff and primary health care workers using different communication methods.
- Researching the outcome of the programme impact to inform evidence-based public health practice.

# Chapter 3

# Operationalization of the Programme

## 3.1. Target Population

To best use resources in the Ministry of Health, the FV programme will focus on high-risk children aged six years and below.

## 3.2. Role of Health Care Providers in Fluoride Varnish Programme

**Regional Dental Surgeon**

- Coordinate the activities of the fluoride varnish application programme in the district with the national focal point, Oral Health Unit /Family Health Bureau.
- Ensure the continuous supply of fluoride varnish to maintain uninterrupted service.
- Monitoring and evaluation of the programme in the district.
- Coordinate and conduct periodic training programmes to update the service providers in the district.

**Medical Officer-MCH ( MO - MCH)**

- Monitoring and evaluation of the programme in the district.

**Medical Officer of Health (MOH)**

- Oral screening of all children aged six months to five years at the Child Welfare Clinics (CWC) for early carious lesions (white/brown spots) and dental cavities according to the recommendations of the existing MCH programme.
- Oral examination findings should be correctly documented in the specific pages of the Child Health Development Record (CHDR).
- Refer children who need early oral health intervention to the nearest dental clinic (Adolescent clinics / Community dental clinics / Hospital dental clinics / School dental clinics).
- Supervisions of school dental clinics and school dental therapists (SDTT).
- Monitoring and evaluation of activities of Public Health Midviews (PHMM) and Public Health Inspectors (PHI) related to the oral health care of children

in the Maternal and Child Health (MCH) programme and School Health Programme, respectively.

**Dental Surgeon attached to Community/Adolescent/Hospital/Mobile Dental Clinics**

- Perform clinical examination and identification of high-risk children for fluoride varnish application using the given criteria.
- Make the treatment plan for applying fluoride varnish and oral healthcare treatments.
- Provide oral health education to children, especially on plaque management (tooth brushing) and dietary modification.
- Follow up on all the high-risk patients by giving recall appointments.
- Record the relevant details in the format provided and forward the returns to the Regional Dental Surgeon (RDS) monthly.

**Public Health Midwife (PHM)**

- Organize or provide oral health education sessions to the parents/guardians of children aged six months to five years.
- Encourage parents to do a regular oral examination of their children by themselves according to the instructions given in the Maternal and Child Health (MCH) programme and to enter the findings on relevant specific page of the Child Health Development Record (CHDR).
- Follow up and encourage parents to obtain oral health care for their children through dental clinics.
- Follow-up children to ensure compliance with the dental surgeon's recommendations.
- Record the relevant details on the specific pages of the Child Health Development Record (CHDR)- B form.

**Public Health Inspector (PHI)**

- Cooperate to deliver oral health messages to the school community.
- Oral screening of all children aged six years (Grade 1) for early carious lesions (white/brown spots) and dental cavities according to the recommendations of existing School Medical Inspection (SMI).
- Oral examination findings should be correctly documented in the relevant places of returns of SMI.

- Refer children who need oral healthcare to the nearest dental clinic (ADC/ CDC/HDC/SDC).
- Follow up and encourage parents of high-risk children for dental caries to direct their children to dental clinics.

**School Dental Therapist (SDT)**

- Oral screen of all preschool and Grade 1 children in their target according to the existing school dental services.
- Identification of high-risk children for fluoride varnish application using given criteria.
- Make the treatment plan for fluoride varnish application and other oral healthcare.
- Provide oral health education to children and their parents.
- Follow up on all the high-risk patients by giving recall appointments.
- Record the relevant details in the format provided and feed all the required data into the eRHMIS database monthly.
- Educate public health staff on best practices of oral health.

## 3.3. Selection of Target Group

### 3.3.1. Selection Age for the Fluoride Varnish Programme in Sri Lanka

- Patient - 24 months up to 6 years of age (considering the caries pattern in Sri Lanka).
- If the child is cooperative, this can be done at less than 24 months.
- For the children less than 3 years, the fluoride varnish application should be done by dental surgeon.
- For the children 3-6 years, this procedure can be done by school dental therapist.
- In special circumstances, if a consultant highly recommends the application of fluoride varnish considering the child's caries risk level, the fluoride varnish can be applied when the child is less than one year old.

### 3.3.2. Identification of High-Risk Patients

The following criteria will be considered to select a child as high risk for the fluoride varnish application.

If a child fulfills one or more criteria, he/she will be selected as a high risk child for the fluoride varnish programme.

**Criteria**

1. Child with white spot lesions or caries or restorations in teeth.
2. Child with missing teeth due to caries.
3. Having a total frequency of brushing less than twice per day.
4. Not using fluoridated toothpaste currently.
5. Child with visible plaque on teeth.
6. Child presents with dental enamel defects.
7. More than two snacks containing fermentable carbohydrates in between meals per day.
8. Children with special needs.
9. Bottle or sippy cup feeding (anything other than water) at bedtime or breastfeeding at night.

### 3.3.3. Identification of high-risk children in different settings

#### 3.3.3.1. Child Welfare Clinic (CWC)

**Child Welfare Clinic (CWC)**

- Oral screen of all 6 months to five-year-old children for early carious lesions (white/brown spots) and dental caries by MOH.
- Findings should be correctly documented in the specific pages of the Child Health Development Record (CHDR).
- Refer all children who need dental treatments to the nearest dental clinic.

↓

**Dental Clinic (ADC/CDC/HDC/SDC)**

Identification of the high-risk children using the given criteria for the fluoride varnish application by DS/SDTT.

#### 3.3.3.2. Preschool Setting

- The minimum target number of preschool children per school dental therapist is 500.
- The SDTT can screen all preschool children (3–5 years old) in their target and find high-risk children for dental caries to apply fluoride varnish.

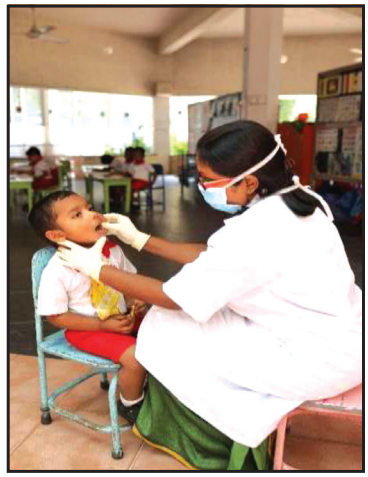

**Figure 1-Examination of a patient in the preschool setting**

### 3.4. First Visit of the Child to the School Dental Clinic/ Preventive Dental Clinic / Hospital Dental Clinic

The first visit aims to familiarize the child patient with the clinic environment (behavioural management & habit modification). Each clinic should have a separate session for these children for convenience and to minimize the waiting time. The date & time should be displayed to the public and informed to the area's Medical Officer of Health (MOH).

#### 3.4.1. Patient Assessment at the First Visit

**Familiarization: Orientation to the Dental Environment**

- ❖ Convince both parents and child that the dental clinic is a safe environment for the child.
- ❖ Take adequate time to get the maximum cooperation of the child.
- ❖ Behaviour management techniques can be applied to uncooperative children- giving a toy to play with, soft, loving and caring voice, tell-show-do, showing other cooperative children, rewarding, etc.

**Figure 2 – Welcoming a patient at the ADC/CDC/Hospital Dental Clinic**

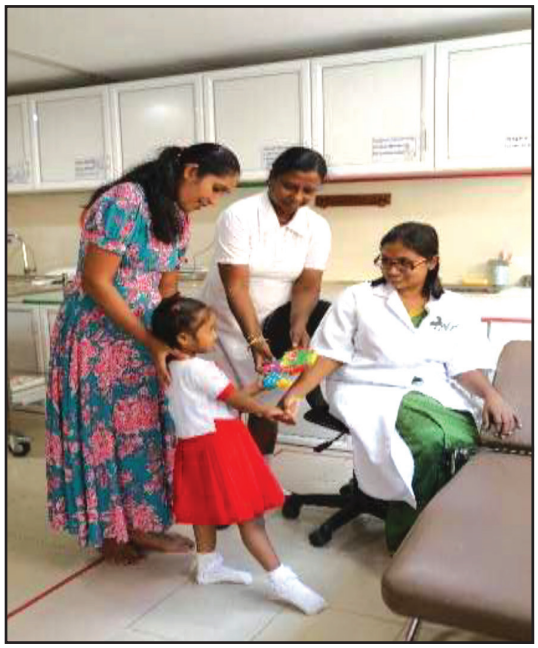

**Figure 3- Welcoming a patient at the School Dental Clinic**

### 3.4.2 History taken from the parent / guardian/ caregiver

- Detailed medical history, including known allergies, shall be obtained.
- Family, social and dental history, including brushing frequency (total frequency of brushing/ use of fluoridated toothpaste) and 24-hour diet chart/ 3-day food diary shall be obtained.

### 3.4.3 Clinical examination of the child:

The child will be examined for,

- Oral hygiene status - plaque on teeth
- Dentition status - white/brown spot lesions/ cavitated or non-cavitated/ active or arrested caries in teeth. Record the examination findings in the patient assessment form (Revised H 975 - for SDTT, and the new format will be provided for dental surgeons)
- If the child is uncooperative, the 'patient examination' can be postponed to the next visit.

**Figure 4- Images of a child with enamel caries**

### 3.4.4 Consent

Signed informed consent must be secured from the child's parent/guardian/caregiver. They should be received an explanation of the benefits and safety of the FV application and the importance of compliance with the treatment (H 972-Consent Form can be used for SDTT).

### 3.4.5 Development of an activity plan for patient management during fluoride application

Based on the history and the clinical examination, this should focus on three (03) aspects

A) Plaque management and dietary modification.

B) Fluoride varnish application procedure is planned, including referrals.

C) Follow-up (frequency and activities to be done in each follow-up visit).

**A) Plaque management and dietary modification**

This should be based on the risk factors identified and focus on the following areas:

- Give general instructions on the management of caries in young children

- Emphasize the importance of having proper plaque control and healthy food habits. The effect of fluoride varnish will depend on the successful plaque control & healthy dietary habits of the child.

- Even after applying fluoride varnish, caries will not be arrested if there is no proper plaque control and no correction of the child's unhealthy dietary habits.

- Activities recommended for parents to minimize caries risk for the child (pay individual attention)

- Parents must brush their child's teeth twice a day using fluoridated toothpaste (1000-1500 ppm) and check the child's mouth at least once a week for early childhood dental decay.

- Commit to avoid/ minimize identified individual risk factor/s underlying social/economic factor/s (school dental therapists/ dental surgeons have to discuss with the parents & come to possible solutions.)

- Emphasize what activities parents should perform for the next visit.

**B) Fluoride varnish application**

- Prefer to take patients on an appointment basis to minimize waiting time.

- Patient should be present with a full stomach.

- 24-hour/ three-day diet chart analysis and dietary advice.

- Check whether parents are adhering to the brushing instructions.

- If satisfactory plaque control is achieved, proceed with fluoride application.

- No Fluoride application if plaque is present.

**C) Follow-up (Please refer 4.2.7)**

# Chapter 4

# Fluoride Varnish Application Technical Procedure

## 4.1 Instruments and Materials

- Disposable gloves
- Disposable face masks
- Instrument tray
- Mouth mirror
- Tweezers
- Cotton gauze
- Cotton roll
- Fluoride varnish containing 22,600 ppm fluoride
- Container (e.g.: Dappen glass/ plates provided by suppliers) to hold fluoride varnish
- Small disposable fluoride applicator/brush

**Figure 5 - Instrument and material tray required for the procedure**

## 4.2 Method

### 4.2.1 Pre-application instructions

a. Explain the procedure to parents/guardians/caregivers.

b. Advise parents/guardians/caregivers,

- Give the child something to eat and drink before the FV application, and ensure the child's stomach is full.
- Where possible, brush the child's teeth before the FV application.

### 4.2.2 Position of Operator/Parent/Guardian/Caregiver/Children

A dental chair or "knee to knee" position can be used, considering the convenience and compliance of the patient.

"Knee to knee" Position

a) The operator may sit in a "knee to knee" position with parent/guardian/caregiver.

b) Instruct the parent/guardian/caregiver to hold the child facing them with the child's legs around their hips.

c) Place a paper towel/disposable bib on the operator's lap and have the parent/guardian/caregiver gently lower the child onto the operator's lap or any convenient position according to the working environment.

**Figure 6: Knee to knee position**

### 4.2.3 Application Technique

Before application, it should be ensured that the varnish is in date.

a. Professional prophylaxis is unnecessary before FV application.

b. Lightly dry the teeth with cotton gauze (strict moisture control is unnecessary as the varnish will adhere even if the teeth are moist).

**Dosage**

**For a full-mouth application.**

Primary teeth (1-8 teeth) – 0.3 ml (1-2 drops)

Mixed dentition – 0.5 ml (2-3 drops)

**Note: Read the manufacturer's instructions for additional information on fluoride application.**

c. Dispense required drops of fluoride varnish into the plate / small side of the dappen glass (upside-down glass).

- Apply a small amount of varnish (a thin layer) using a small brush or applicator (Do not use cotton buds and avoid applying fluoride varnish on large open carious cavities or when there is intra-oral inflammation).

d. Apply FV on upper teeth, starting from posterior teeth followed by anterior teeth. Then, apply FV on the lower teeth from the posterior teeth to the other posterior ends.

e. Apply all over the tooth surfaces including occlusal surfaces.

**Figure 7 - Lightly dry the teeth with cotton gauze**

**Figure 8 - Apply a small amount of varnish (a thin layer) using a small brush or applicator**

f. Allow it to dry for 30 seconds.

g. Do not wash the child's mouth.

**Figure 9- Appearance after the application of fluoride varnish**

**Fluoride varnish should be applied in a thin layer on all tooth surfaces of high risk children.**

### 4.2.4 Post-application Instructions

a. It will be sticky, and the child may feel some discomfort.

b. Inform parents/guardians/caregivers of the temporary discoloration and elevated biting of the teeth that may occur. That will go off after brushing.

c. Inform parents/guardians/caregivers that FV may produce certain tastes due to flavouring.

d. The child should not rinse, eat, or drink for at least 30 minutes after the procedure.

e. A soft diet (e.g., Soup, Kanji, etc.) is recommended for up to the next day morning (24 hours).

f. The child should not brush their teeth for the rest of the day (24 hours). Regular oral hygiene procedures can be recommended from the next morning to maximize fluoride varnish contact time on the teeth.

### 4.2.5 Contraindications

- Avoid application on children with fever, common cold, asthmatic or wheezing attack, gingival stomatitis, ulcerative gingivitis, intra-oral inflammation, and known sensitivity to any drugs or food.

### 4.2.6 Record of Treatment

Application of fluoride varnish can be recorded in the examination and history chart {Revised H 975 (2023)-for SDTTs}.

### 4.2.7 Follow-up

Fluoride application frequency and recall visits

- Biannual application is the usual recommended frequency of routine application of fluoride varnish to maintain the effectiveness of the treatment.
- The frequency of the application can be altered according to the level of caries risk of the child (up to 3 months interval).
- Once the first FV application is completed, a recall appointment should be given to the patient in 6 months for review and continued fluoride varnish application.
- Record keeping is essential to measure success, and it can be achieved by the level of plaque control, correct dietary pattern, and rate of arresting (remineralization) of caries.

# Chapter 5

# Monitoring and Evaluation

## 5.1 Responsibilities

The Oral Health Unit of the Family Health Bureau will monitor and evaluate the programme outcome nationally.

Relevant Regional Directors of Health Services, Medical Officers of Health, Regional Dental Surgeons, and Supervising School Dental Therapists will be the programme coordinators at district levels.

## 5.2 Data Collection

Data shall be collected manually at the district level using the dental formats given for the SDTT. Dental surgeons in ADC, CDC, and OPD will be given new formats soon.

## 5.3 Data Flow

Data from districts shall be compiled at the national level in eRHMIS. Each district shall be responsible for monitoring and evaluating its programme.

## 5.4 Evaluation of the Programme

An evaluation of the FV programme shall be carried out yearly at the national level. The performance and effectiveness of the programme will be evaluated using output and outcome indicators.

### 5.4.1 Output Indicators

The following data are to be collected:

| | | |
|---|---|---|
| 1. | Percentage of children (6 years and below) received 1st time fluoride varnish application | $\frac{\text{Children received 1st time FV application}}{\text{No high-risk children (6 years and below)}} \times 100.$ |
| 2. | Percentage of children (6 years and below) received 2nd time fluoride varnish application | $\frac{\text{Children received 2nd time FV application}}{\text{No high-risk children (6 years and below)}} \times 100.$ |

### 5.4.2 Evaluation of outcome measure

Percentage of children with caries in primary molars (D+E or D/E) after one year of the completion of fluoride therapy (after one year of 2nd application). However, we assess this indicator when the child is in grade 1, considering the feasibility.

$$\frac{\text{No of children with caries in primary molars (D+E or D/E) after 1 year of completion of the fluoride therapy}}{\text{Total no of children who completed the fluoride varnish therapy}} \times 100$$

All the above output and outcome indicators should be calculated separately for the following categories.

1. Children under three years old – FV application should be done by dental surgeons attached to CDC/ADC/HDC/Mobile Dental Clinics.
2. Preschool children-(3-5 years)
3. Grade 1 students

# Chapter 6

# Management of Emergencies

**Allergies**

To avoid emergencies due to allergies, make sure that the patient does not have any allergies to medicine or food at the history taking prior to applying fluoride varnish.

If a patient shows any allergic reaction (swelling, redness. etc.) after application of FV.

- Reassure the patient and parents.
- Immediately remove the applied varnish using cotton/gauze.
- Refer patients to the nearest government hospital with ETU facilities without any delay.

Anxiety and syncope can happen as other emergencies. These can be managed as usual.

**Note-**

If a patient gets allergies or any other emergency reactions related to the therapy, inform the relevant RDS in writing. All RDSs should forward those complaints to the National Focal Point, (FHB) through proper communication channels.

# Chapter 7

# Research

Research activities can be carried out during the implementation of this programme at national and district levels. For example, an assessment of the effectiveness of a community-based FV programme may be carried out based on different frequencies of application.

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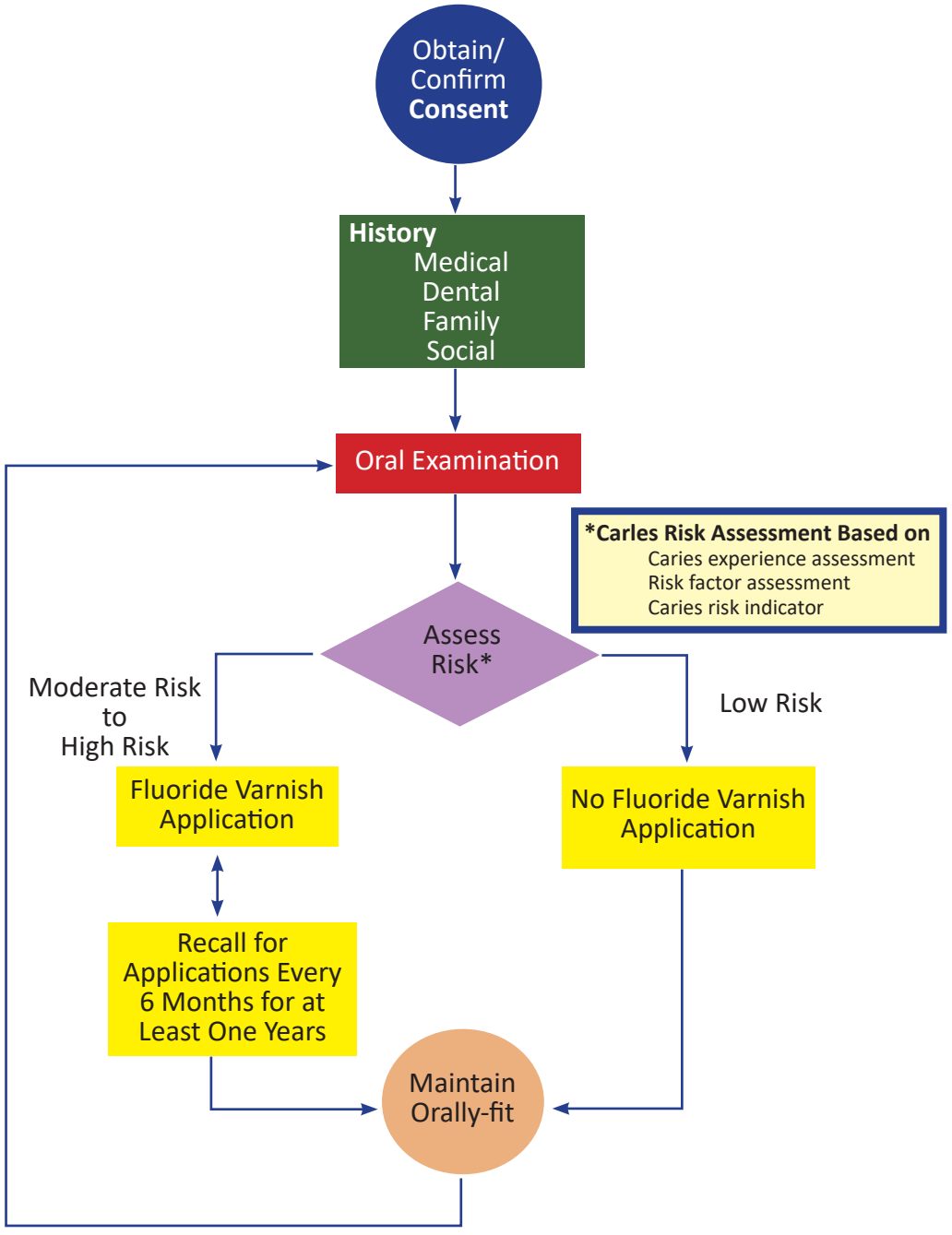
**Annexure 01**

## Flow Chart for Fluoride Varnish Application



**Family Health Bureau,**
Ministry of Health,
No. 231, De Saram Place,
Colombo 01000, Sri Lanka.

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