

National Guideline for the Management of Oral Potentially Malignant Disorders for Dental and Medical Practitioners



National Cancer Control Programme
Ministry of Health
Sri Lanka
2022



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4th Edition



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ISSN 2961-5577

Barcode:9 772961 557008

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First Edition - February 2013

Second Edition - December 2015

Third Edition - August 2019

Fourth Edition - December 2022

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Printed by: SRS Enterprises, 52/1, 1st Lane, Gothami Road, Colombo 08.

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Contents

List of contributors	iii
Index.....	v
List of figures	vii
List of tables	viii
Message from Director General of Health Services	ix
Message from Deputy Director General (Non-Communicable Diseases).....	xi
Preface	xiii
List of abbreviations	xiv
Chapter 1. Introduction	1
1.1 Oral Potentially Malignant Disorders and oral cancer	2
1.2 Burden of oral cancer in Sri Lanka.....	3
1.3 Burden of OPMD in Sri Lanka	4
1.4 Prevention and control strategies for oral cancer	4
Chapter 2. Prevention of OPMD and oral cancer.....	5
2.1 Risk factors for oral cancer.....	6
2.2 Strategies for the prevention of OPMD and oral cancer	7
2.3 Risk-factor counselling	8
Chapter 3. Early detection of OPMD and oral cancer.....	11
3.1 Concepts of early detection, screening and early diagnosis	12
3.2 Essential elements of an organized screening programme	12
3.3 Screening and early detection methods	13
3.4 Early detection strategies adopted in Sri Lanka	14
3.5 Clinical examination of the oral cavity	15
Chapter 4. Clinical features of OPMD and oral cancer	17
4.1 Clinical features of common OPMDs and oral cancer.....	18
4.2 Benign lesions that mimic OPMDs or oral cancer	27

Chapter 5. Management outline, referral pathways and roles and responsibilities of dental and medical practitioners	31
5.1 Management outline of OPMD	32
5.2 Roles and responsibilities of dental and medical practitioners	35
Chapter 6. Surveillance	37
6.1 Importance of surveillance.....	38
6.2 Process of oral cancer surveillance in Sri Lanka	38
6.3 Publishing OPMD and oral cancer-related information	39
References	41
Annexures	45
Annexure 1:	45
Annexure 2:	46
Annexure 3:	47
Annexure 4:	49
Annexure 5:	50
Annexure 6:	51
Annexure 7:	52
Pictures of OPMD	53

List of Figures

Figure 1.1	Number of lip, tongue and mouth cancers in Sri Lanka 2005 – 2019 by sex	3
Figure 2.1	Flow-chart of brief intervention for the cessation of ongoing tobacco habits with 5A and 5R algorithm	10
Figure 3.1	Natural history of OPMD and oral cancer	12
Figure 4.1	Homogeneous leukoplakia	19
Figure 4.2	Erythroleukoplakia	19
Figure 4.3	Verrucous leukoplakia	19
Figure 4.4	Proliferative verrucous leukoplakia	20
Figure 4.5	Erythroplakia	21
Figure:4.6	Oral lichen planus	22
Figure 4.7	Pigmented oral lichen planus	22
Figure 4.8	Erosive oral lichen planus	22
Figure 4.9	Lichen planus – skin lesions	22
Figure 4.10	Oral submucous fibrosis – early stage	23
Figure 4.11	Oral submucous fibrosis – late stage	24
Figure 4.12	Oral submucous fibrosis – in children	24
Figure 4.13	Oral lichenoid lesions	25
Figure 4.14	Oral cancer - presenting as an ulcer	26
Figure 4.15	Oral cancer - presenting as a growth	26
Figure 4.16	Common benign discolourations that can mimic OPMD and oral cancer	27
Figure 4.17	Common benign discolourations that can mimic OPMD and oral cancer <i>contd.</i>	28
Figure 4.18	Common benign ulcers that can mimic OPMD or oral cancer	29
Figure 4.19	Common benign growths that can mimic oral cancer	30
Figure 5.1	Referral pathway of patients	34
Figure 6.1	Flow-chart for the surveillance system of OPMD and oral cancer	40

List of Tables

Table 2.1	Brief intervention model for the cessation of ongoing tobacco habits–based on 5A algorithm	9
Table 2.2	Examples of common messages used in brief intervention and appropriate target group for the cessation of ongoing tobacco habits	9
Table 3.1	Procedure of extra-oral examination	15
Table 3.2	Procedure of intra-oral examination	16

Message from Director General of Health Services

It gives me great pleasure to send this message for the publication of the fourth edition of the “National Guideline for Management of Oral Potentially Malignant Disorders for Dental and Medical Practitioners” by the National Cancer Control Programme.

Oral cancer is the most common cancer among males and a cancer with high mortality. Early detection and prompt management of oral potentially malignant disorders play a pivotal role in the prevention and control of oral cancer. Treatment of cancers at early stages improves prognosis and reduces treatment costs which are important for countries like Sri Lanka. Having updated management guidelines is crucial as they set the baseline for evidence-based treatment for such cases throughout Sri Lanka.

As this is the fourth edition, I appreciate the continuous efforts made by the National Cancer Control Programme and numerous resource persons to update existing guidelines on par with the latest management protocols.

Dr. Asela Gunawardana

**Director General of Health Services,
Ministry of Health.**

Message from Deputy Director General (Non-Communicable Diseases)

As a developing nation, Sri Lanka has to deal with the ever-increasing burden of non-communicable diseases. With the current situation in Sri Lanka, the focus should be on prevention. Oral cancer is an important entity within this group because of its high mortality as well as the tremendous economic and psychological burden it causes to patients and families alike. Preventing malignant transformation of oral potentially malignant disorders has been identified as a key strategy to reduce the oral cancer burden of Sri Lanka.

Currently, oral cancer screening at the population level has been incorporated into the programme of non-communicable disease and implemented through the network of Healthy Lifestyle Centres distributed island-wide. As dental surgeons are not available in all Healthy Lifestyle Centres in Sri Lanka, medical officers have an important role to play in the early identification and management of oral potentially malignant disorders. Therefore, having a national guideline for the management of oral potentially malignant disorders targeting both dental and medical practitioners is of paramount importance as they are the first contact persons treating such cases. The effort put in by numerous resource persons and the National Cancer Control Programme to update the existing guideline is very much appreciated.

It is expected that both dental and medical practitioners develop their capacities based on the guideline and work tirelessly to reduce the oral cancer burden in Sri Lanka.

Dr. Champika Wickramasinghe

**Deputy Director General (Non-Communicable Diseases),
Ministry of Health.**

Preface

Lip, tongue and mouth cancer is the most common cancer among males in Sri Lanka and is ranked as the second commonest cancer among all cancers in Sri Lanka. While causing severe aesthetic and functional disabilities, it causes a significant psychological and economic burden to patients and families alike.

Oral cancer is considered as a preventable cancer due to its association with risk-habits such as the use of smokeless tobacco, areca-nut and alcohol. Additionally, it is considered as an early detectable cancer due to the presence of clinically detectable precursor lesions called Oral Potentially Malignant Disorders (OPMD) which occur in most instances.

Taking this into consideration, the National Cancer Control Programme adopted three main strategies for the prevention and control of oral cancer namely; preventing the occurrence, early detection of OPMD and the appropriate management of identified cases.

Dental and medical practitioners play a key role in executing above mentioned strategies due to their clinical background. Offering an OPMD management guideline for them was considered as a timely requirement to achieve country-specific, standardized, evidence-based management of this disease in Sri Lanka.

The first edition of the guideline was published in 2013 and subsequent editions were disseminated in 2015 and 2019 to be on par with the latest changes in disease patterns, management and logistics. It gives me a great sense of satisfaction to write the preface to this year's latest edition, knowing that we are continuously updating the capacities of dental and medical practitioners on this very important oral health disease.

I take this opportunity to thank and congratulate the experts who have contributed to completing this task. I hope that all dental and medical practitioners will utilize this guideline to contribute positively to oral cancer prevention and control activities in Sri Lanka.

Dr. Eshani Fernando

Director,

National Cancer Control Programme.

List of Abbreviations

HLC	Healthy Lifestyle Centre
HPV	Human Papillomavirus
MO-NCD	Medical Officer – Non Communicable Disease
NATA	National Authority on Tobacco and Alcohol
NCCP	National Cancer Control Programme
OMF	Oral and Maxillo-Facial
OPMD	Oral Potentially Malignant Disorder
PHC	Primary Health Care
R&SU/IOH	Research and Surveillance Unit, Institute of Oral Health
RDS	Regional Dental Surgeon
VOE	Visual Oral Examination

Chapter 1

Introduction

- In Sri Lanka, oral cancer is the second most common cancer reported and the most common cancer observed among males.
- Oral cancer is considered as a preventable and early detectable cancer due to well-identified risk habits and the occurrence of clinically recognizable lesions called Oral Potentially Malignant Disorders (OPMD).
- Oral leukoplakia, oral submucous fibrosis and oral lichen planus are the most common types of OPMDs reported in Sri Lanka.
- The prevention and control of OPMDs and oral cancer are based on:
 - Preventing the occurrence by creating public awareness and taking measures for risk-factor control.
 - Early detection of OPMD and oral cancer.
 - Provision of rapid and appropriate treatment of identified cases.
- Dental and medical practitioners have a key role to play in oral cancer prevention and control activities due to their clinical background.

1.1 Oral Potentially Malignant Disorders and oral cancer

- Lip and oral cavity cancers taken together is the 16th most common cancers overall, the 11th most common cancers in men and the 18th most common cancers in women in the world¹. Two-thirds of these occur in developing countries and half of these are detected in South Asian and Pacific regions¹⁻⁴.
- Over 90% of oral cancers are squamous cell carcinomas^{3,5}.
- Oral Potentially Malignant Disorder (OPMD) is a clinically recognizable disorder defined as “any oral mucosal abnormality that is associated with a statistically increased risk of developing oral cancer”⁶.
- OPMDs have an unpredictable clinical course; remaining static or may demonstrate progression or regression^{7,8}. However, the presence of an OPMD does indicate an increased risk for cancer in the oral cavity during the lifetime of the patient⁶.
- OPMDs have a wide range of clinical features including colour variations (white, red, and mixed), topographic changes (plaque/plateau, smooth, corrugated, verrucous, granular, atrophic) and variations of the size and the site of occurrence^{3,8}.
- Malignant transformation of OPMDs depends on the patient demographics and successful reduction of modifiable risk factors, OPMD type, size and appearance, anatomic location, the degree of dysplasia and molecular characteristics^{5,8,9}.

1.2 Burden of oral cancer in Sri Lanka

- Sri Lanka is one of the countries that have a high oral cancer incidence due to culturally-accepted tobacco and areca-nut chewing habits, especially in the form of betel-quid chewing.
- Lip, tongue and mouth cancer taken together is ranked as the second commonest cancer among all cancers in Sri Lanka. In males, it is the most common cancer observed accounting for around 15% of all cancers. Among females, it is within the top ten cancers. The male-to-female ratio is 4 to 1¹⁰.
- Annually, about 2500-3000 new oral cancer cases are detected (6-7 cases daily) and around 1000 deaths are reported due to oral cancer (3 deaths per day). Most cases are detected in people over 35 years of age¹⁰.
- The number of oral cancers reported over the years is given in figure 1.1.

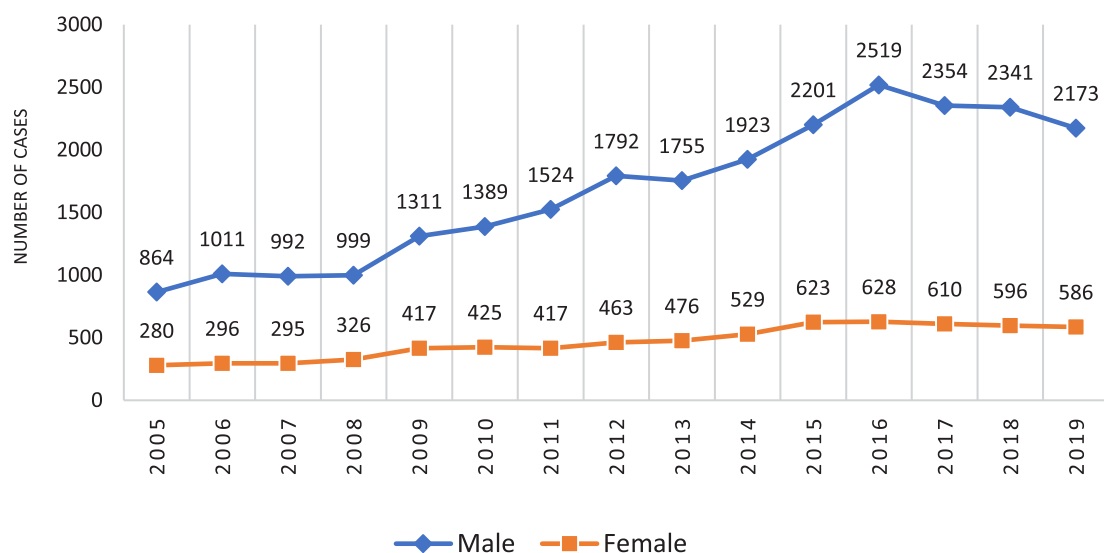


Figure 1.1: Number of lip, tongue and mouth cancers reported in Sri Lanka 2005 – 2019 by sex

1.3 Burden of OPMD in Sri Lanka

- The population prevalence of OPMD in Sri Lanka is low, ranging from 1-2%¹¹. The most common types of OPMD reported in Sri Lanka are oral leukoplakia, oral submucous fibrosis and oral lichen planus¹².
- However, a high proportion of OPMDs and oral cancers are identified among certain occupational sub-groups such as plantation workers, labourers, farmers, drivers and fishermen due to the high prevalence of risk habits¹³⁻¹⁵.

1.4 Prevention and control strategies for oral cancer

- Oral cancer is considered as a preventable and early detectable cancer due to its well-identified risk habits and the occurrence of recognizable potentially malignant disorders^{2,3}.
- The following are the three main strategies for the prevention and control of oral cancer²⁻⁴.
 - Preventing the occurrence by creating public awareness and taking measures for risk-factor control.
 - Early detection of OPMD and oral cancer.
 - Provision of rapid and appropriate treatment of identified cases.
- A well-structured, integrated and targeted programme with multi-sector collaboration utilizing the above three strategies is required for effective oral cancer prevention and control.
- Dental and medical practitioners have a key role to play in oral cancer prevention and control activities due to their familiarity with anatomical structures and disease conditions of the oral cavity. Subsequent chapters describe their role in detail.

Chapter 2

Prevention of OPMD and oral cancer

- Major risk factors for oral cancer in Sri Lanka are habitual use of smokeless tobacco and areca-nut products, smoking and high consumption of alcohol.
- Public awareness on the disease and taking control measures for risk factors are required for the prevention of OPMD and oral cancer.
- The following are the main strategies used for the prevention of oral cancer.
 - Implementation of regulations on risk factors.
 - Increasing community awareness on the hazards of risk habits, signs and symptoms of OPMD and oral cancer and the importance of regular self-mouth examination.
 - Counselling people with risk habits to induce cessation.
- “Brief intervention” can be applied to patients with risk habits by dental and medical practitioners in any clinical setting to assist cessation.

2.1 Risk factors for oral cancer

- Risk factor control is one of the main strategies used for the prevention of oral cancer²⁻⁴.
- Major risk factors for oral cancer are habitual use of smokeless tobacco and areca-nut products, smoking and high consumption of alcohol. Other factors include; Human Papillomavirus (HPV) infection, poor nutrition; a diet low in fresh fruits and vegetables, poor oral hygiene, immunosuppression, exposure to Ultra Violet (UV) radiation and rare genetic diseases²⁻⁵.

Major risk factors

- Use of tobacco
 - Smokeless tobacco
 - With betel-quid
 - Chewable commercial products
 - Tobacco smoking
- Use of areca-nut
 - With betel-quid
 - Chewable commercial products
- Alcohol consumption

Other risk-factors

- HPV infections (type 16 & 18)
- Poor nutrition; diet low in fruits and vegetables
- Poor oral hygiene
- Immunosuppression
- Exposure to UV light

- Combinations of risk habits act synergistically and increase the risk of oral cancer compared to a single habit^{4,5}.
- Other than traditional betel-quid, there are a variety of area-specific commercial smokeless tobacco (e.g. Baabul, Maawa, Peni-Pethi, Thool) and areca-nut (e.g. Peni-Puwak) products in Sri Lanka with different fragrances and flavours attracting youth and school children¹⁶.
- All healthcare staff have to be vigilant about the availability of these products and take necessary steps to make the public aware to prevent usage.
- Limited evidence is available in Sri Lanka with regard to the occurrence of oral cancer due to HPV infection or lip cancer from UV radiation exposure.

2.2 Strategies for the prevention of OPMD and oral cancer

- The following are the main strategies used for the prevention of OPMD and oral cancer in Sri Lanka.
 - Development, implementation and monitoring of regulations on risk factors. Examples are given below. These regulations are to be implemented and monitored at the grass-root level by Public Health Inspectors (PHIs) and area Medical Officers of Health (MOH).
 - Regulations on tobacco and alcohol developed in 2006 by the National Authority on Tobacco and Alcohol (NATA) (NATA act no. 27 of 2006 and amendment – NATA act no 3 of 2015). Available at: <https://www.nata.gov.lk/>
 - Deposition of anything onto a public road/national highway to be an offence (National Road Act No 40 of 2008). Therefore, spitting on roads is covered.
 - Prohibition of using and selling betel, tobacco and areca-nut related products in the premises of State Institutions (Public Administration Circular: 11/2019 given in annexure 1) and all healthcare facilities (General Circular No: 01-14-2018, given in annexure 2).
 - Creating community awareness in the following areas.
 - On hazards of risk-habits and discourage them by addressing underlying predisposing factors.
 - On early signs and symptoms of OPMD and oral cancer.
 - On the importance of regular self-mouth examination and seeking professional help if there is any doubt.
 - Counselling people with risk habits to induce cessation (*see the next section*).

2.3 Risk-factor counselling

- Tobacco and areca-nut are psycho-addictive substances and if addicted, people will continue to use these substances despite causing health hazards¹⁷.
- Oral examination findings are useful to carry out counselling for people to initiate quitting these habits.
- Since tobacco users are also a high-risk group for other non-communicable diseases, it is always better to address those diseases at the same time¹⁸.
- “Brief intervention”, which is based on 5A and 5R algorithms, is considered as an effective method to practice in a hospital setting within 3-5 minutes for quitting tobacco habits of patients¹⁷.
- The brief intervention model based on 5A algorithm and the flowchart of the procedure (with 5R algorithm) is given in table 2.1 and figure 2.1 respectively.
- Examples of common messages used for brief intervention and appropriate target groups are mentioned in table 2.2.
- It is reported that this model can also be effectively used for people with ongoing areca-nut chewing habits.
- The developed quitting plans should be patient-specific by addressing all roadblocks (underlying factors) associated with the ongoing habit.
- Patients with severe addictions require specialist care and such patients should be referred to the nearest psychiatrist.

Table 2.1: Brief intervention model for the cessation of ongoing tobacco habits – based on 5A algorithm

Ask about tobacco use (<1 minute)	Identify and document the tobacco use of every patient at every visit.
Advice to quit tobacco (<30 seconds)	In a clear, strong, personalized manner, urge every user to quit.
Assess willingness to make a quit attempt (<1-2 minutes)	Is the tobacco user willing to make a quit attempt at this time?
Assist in the quit attempt (<1-3 minutes)	Provide necessary information and assistance to develop a quit plan.
Arrange follow-up (<1 minute)	Schedule follow-up contact visits, preferably within the first week after the quit date.

Table 2.2 Examples of common messages used in brief intervention and appropriate target group for the cessation of ongoing tobacco habits

Message	Target group
- Stained teeth look ugly and smelly - Not pleasant towards others/fiancé - Risk of development of other health problems (e.g. impotence)	Youth with ongoing tobacco or areca-nut habits
“Mouth is already burnt and lung must have burnt more” - Risk of development of other health problems (e.g. heart diseases, impotence) - Risk of health hazards to friends, family members and loved ones (second-hand smoking)	Smokers
Number of rupees spent a day for tobacco/areca-nut and possible savings/benefits that could have gained if managed to quit	Daily earners and heavy tobacco/areca-nut users
- Risk of oral cancer and its effects on the person and the family - Risk of missing their important occasions (e.g. wedding) - Risk of leaving loved ones early	Adults with ongoing tobacco or areca-nut habits

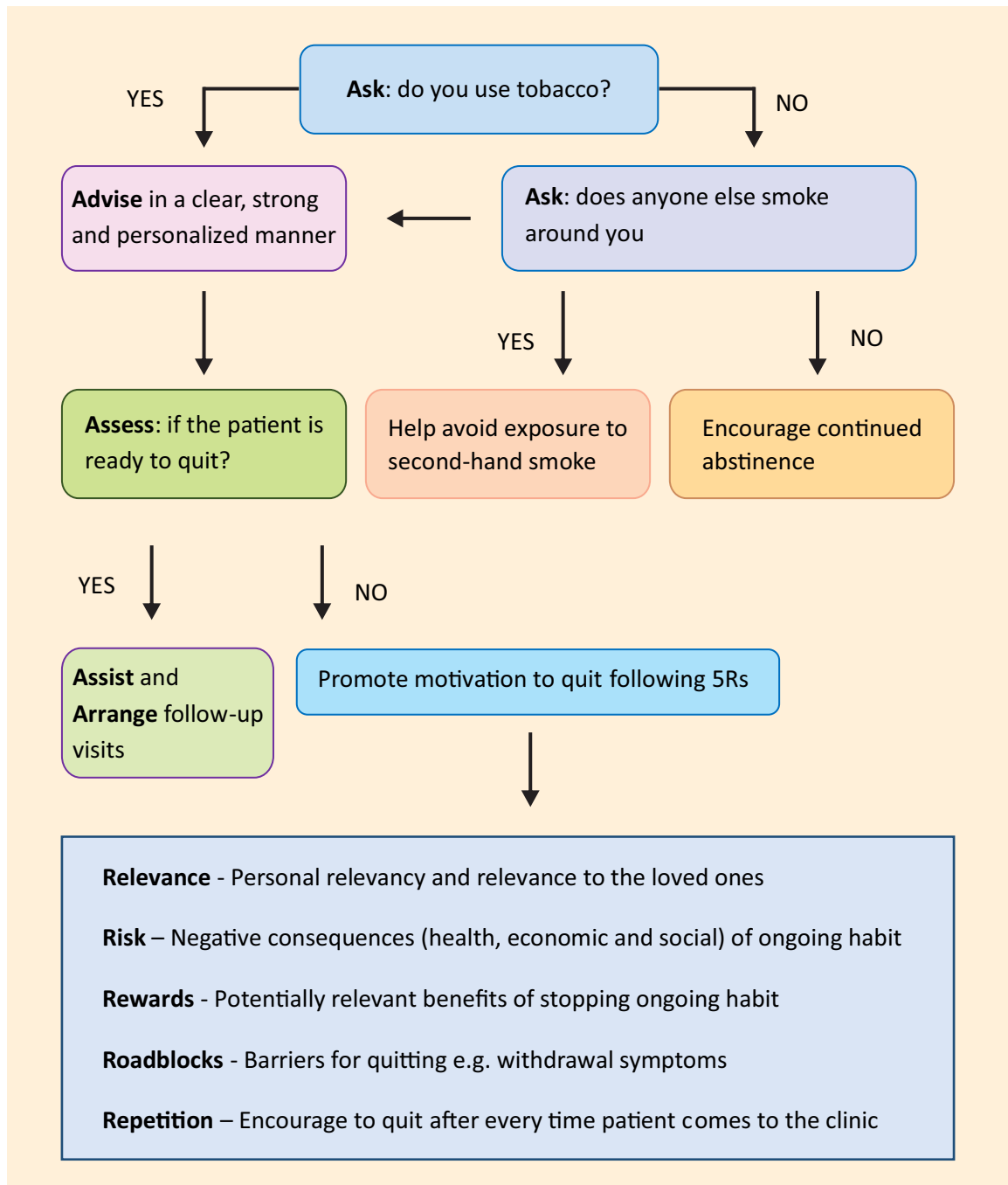


Figure 2.1: Flow-chart of brief intervention for the cessation of ongoing tobacco habits with 5A and 5R algorithm

Chapter 3

Early detection of OPMD and oral cancer

- Early detection has two components; screening and early diagnosis.
- Visual oral examination is the most acceptable method of screening for OPMD and oral cancer.
- It involves systematic inspection and palpation of the oral mucosa under bright light, followed by inspection and digital palpation of the neck lymph nodes.
- In Sri Lanka, dental and medical practitioners are the main healthcare providers assigned for the early detection of OPMD and oral cancer.
- The following are the main strategies used for the early detection of OPMD and oral cancer in Sri Lanka.
 - Population-based screening for over 35-year-olds at 3-year intervals at Healthy Lifestyle Centres.
 - Opportunistic screening of clinic patients.
 - Oral examination of referred patients to dental and medical clinics.
 - Active screening of high-risk populations through mobile dental services.

3.1 Concepts of early detection, screening and early diagnosis

- Early detection has two components; screening and early diagnosis.
- Screening is the identification of asymptomatic stages of the disease; namely, in the latent period (either the stage of epithelial changes or epithelial dysplasia). Early diagnosis is the identification of diseases/conditions among people with symptoms as early as possible¹⁹.
- With regard to oral cancer, the detection of OPMD is equivalent to screening. Identification of early-stage of oral cancer is equivalent to early diagnosis (figure 3.1).

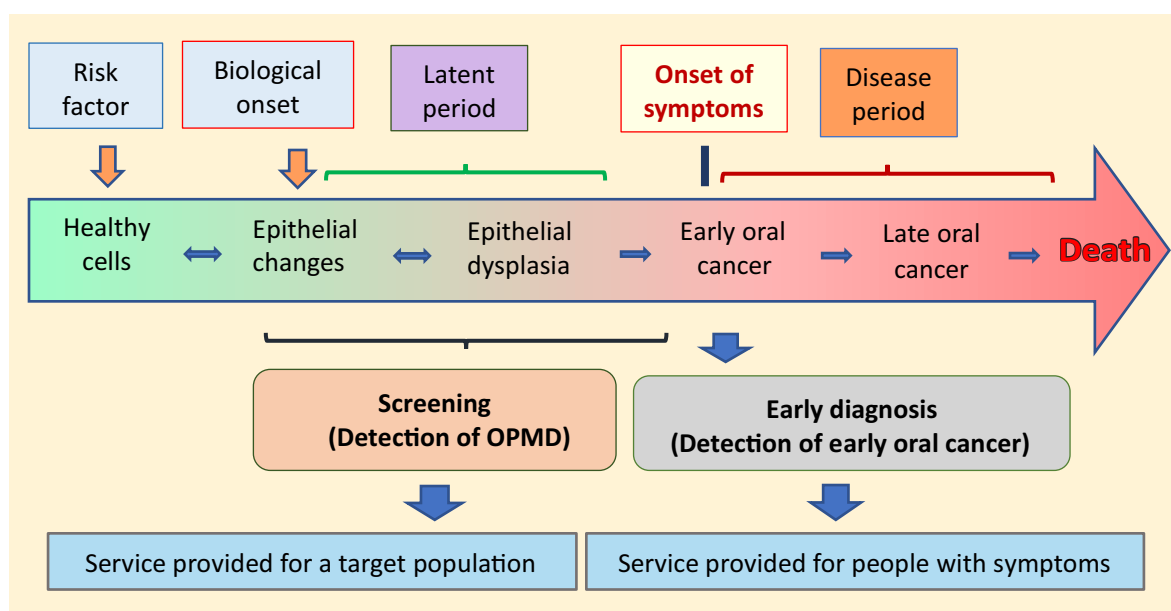


Figure 3.1 Natural history of OPMD and oral cancer

3.2 Essential elements of an organized screening programme

- The following are essential requirements of a good screening programme^{3,19}.
 - A mechanism for the systematic invitation of the target (screening) group.
 - High attendance rate of participants (high coverage).

- Availability of a simple and cost-effective screening test that is accepted by the recipients.
 - Mechanisms for calibration of screeners and quality control of the applied test.
 - Availability of referral pathways for detected cases to receive adequate treatment.
 - Good resource supply.
 - Logistically feasible and the cost of case finding should be economically balanced with possible expenditure on medical care as a whole.
- For oral cancer, screening of at-risk groups provides better efficiency compared to general population screening³.

3.3 Screening and early detection methods

- Visual Oral Examination (VOE) is the most acceptable method of screening for OPMD and early detection of oral cancer after evaluation of its feasibility, safety, acceptability, accuracy and cost-effectiveness in terms of reducing oral cancer mortality^{2,20}.
- The VOE involves a systematic visual and physical examination of the oral mucosa under bright light for signs of OPMD and oral cancer, followed by careful inspection and digital palpation of the neck for any palpable (enlarged) lymph nodes.
- The effectiveness of other methods of detecting OPMD and early oral cancer, such as using toluidine blue, salivary markers etc. are yet to be proven^{3,21}.
- The self-mouth examination is not considered as a good screening tool for OPMD and oral cancer detection due to low sensitivity²¹⁻²⁴. Therefore, it is introduced as a general health practice and professional advice to be sought if any abnormality is detected.

3.4 Early detection strategies adopted in Sri Lanka

- Dental and medical practitioners are the main healthcare providers assigned for the detection of OPMD and oral cancer in Sri Lanka due to the accuracy of detection and logistics.
- The following are the main strategies used in Sri Lanka for the early detection of oral cancer.
 1. Population-based screening of over 35-year-olds at 3-year intervals at Healthy Lifestyle Centres (HLC).
 2. Opportunistic screening at dental and medical clinics by dental and medical practitioners respectively.
 3. Oral examination of self-referred patients to dental or medical clinics after detecting a suspicious lesion by self-mouth examination.
 4. Oral examination of individuals with risk habits, who are referred by Primary Health Care (PHC) workers during their routine fieldwork.
 5. Active screening of high-risk groups such as plantation workers, labourers, farmers, drivers and fishermen at 3-year intervals through mobile dental services.
- The main strategies, place of early detection and personnel involved are summarized below.

05 strategies	04 centers	02 categories of staff
• Population-based screening of over 35-year-olds at 3-year intervals • Opportunistic screening of routine clinic patients • Oral examination of self-referred patients to dental/medical clinics • Oral examination of referred individuals with risk-habits • Active screening of high-risk groups	• Healthy Lifestyle Centres • Dental clinic • Medical clinic • Mobile clinics	• Dental surgeons • Medical officers

3.5 Clinical examination of the oral cavity

- The VOE should be conducted by a trained examiner who is familiar with oral anatomical structures.
- It is a clinical procedure to be done in an aseptic environment.
- Required materials and patient preparation are given below and the procedure is given in tables 3.1 and 3.2.

Materials required for clinical oral examination

- Dental chair or normal chair (for medical officers)
- Good light source to examine inside of the mouth (examination light or torch)
- Sterile piece of gauze and a ruler
- Examination gloves and surgical mask

Preparation for clinical oral examination

- Ask the patient to remove any dentures and wash the mouth thoroughly to remove food debris
- Ask the patient to sit on the dental chair or a normal chair and focus the light to patient's mouth
- Preferred to start with extra-oral examination and then proceed to intra-oral examination

Table 3.1: Procedure of extra-oral examination

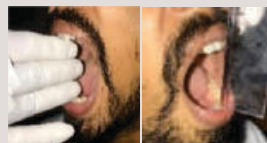
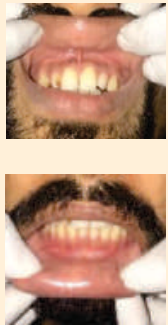
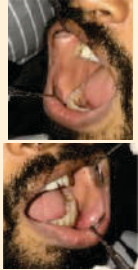
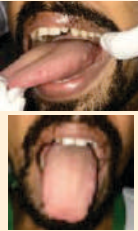
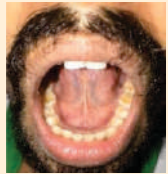
Site	Procedure	
Mouth opening	• Check mouth opening. (It is about 30-40mm) (Usually, a person can insert his/her index, middle and ring fingers into the mouth in a vertical plane: '03-finger-test').	
Lymph nodes	• Digital bimanual palpation of submandibular and cervical lymph nodes.	

Table 3.2: Procedure of intra-oral examination

Site	Procedure	
Lips, vermillion border and commissure	• Raise and turn the upper lip outward using two fingers. Then examine and palpate the labial mucosa of the upper lip, labial gingivae and labial sulcus. • Turn the lower lip downwards and follow the same procedure. • Retract left and right commissural regions separately using your fingers and examine the commissure. <i>Note: Make sure to examine the area that was covered with fingers.</i>	
Buccal mucosa including buccal sulci and gingivae (Left and right sides separately)	• Retract both sides of the cheek (one side at a time) using a mouth mirror, tongue depressor or spatula. • Examine buccal mucosa, upper and lower buccal sulci and gingivae. Then palpate using your finger. <i>Note: Make sure to examine the area that was covered with the mouth mirror/ tongue depressor/spatula.</i>	
Tongue	• Ask to put the tongue out and examine the dorsum of the tongue. • Examine the lateral surfaces of the tongue by moving it sideways while holding the tip with a sterile piece of gauze.	
The floor of the mouth including lingual gingivae and sulci	• Ask to lift the tongue and examine the ventral surface of the tongue, the floor of the mouth, lingual gingivae and sulci.	
Hard and soft palate	• Examine the hard palate and visually inspect the soft palate as far back as you can see.	
Throat	• Ask the patient to say "AAH" and visually inspect the back of the throat (tonsils, the uvula, palatal folds, and posterior pharyngeal wall).	

Chapter 4

Clinical features of OPMD and oral cancer

- The following are common clinical features of OPMD and oral cancer.
 - Localized (patches) or generalized discolourations.
 - Ulcers, erosions and fissuring.
 - Soft tissue/hard tissue growths and lumps.
 - Changes in the surface texture of the oral mucosa on palpation.
 - Cause symptoms: either severe (pain) or mild (burning sensation).
 - Functional limitations of the mouth: mouth opening, tongue movements.
 - Regional lymph node enlargements in the neck.
- The detection of OPMDs and oral cancers is based on the exclusion of other diseases and conditions that also present similar features.
- If there is a doubt about the differentiation of lesions, always consider it as a suspected case.

4.1 Clinical features of common OPMDs and oral cancer

- The following are common clinical features of OPMDs and oral cancer.

Common clinical features of OPMDs and oral cancer

- Localized white, red or white and red mixed lesions
 - Generalized pale and blanching appearance in the oral mucosa
 - Ulcers, erosions, fissuring
 - Soft tissue/hard tissue growths and lumps
 - Changes in the surface texture of the oral mucosa on palpation
 - Burning sensation in the mouth
 - Restricted functions such as limited mouth opening or tongue movements
 - Regional lymph node enlargements in the neck
- It is important to note that the above clinical features mimic some developmental conditions, benign lesions, drug reactions and oral manifestations of systemic diseases occurring in the oral cavity. Therefore, the detection of OPMD and oral cancer is based on the exclusion of other diseases and conditions.
 - If there is a doubt about the differentiation of lesions, always consider it as an OPMD or oral cancer and refer the patient to the nearest Oral Maxillo-Facial (OMF) clinic for confirmation.
 - The clinical features of OPMDs, early oral cancers and benign lesions that have similar clinical features are described in the next section. Additional pictures of OPMDs are also given on pages 54-55 (at the end of the book) to get a better understanding and easy reference.
 - The selection of lesions described in the following section is based on the following criteria.
 1. The most common OPMDs in Sri Lanka including newly added OPMDs: oral leukoplakia, oral submucous fibrosis, oral lichen planus and oral lichenoid lesions .
 2. OPMDs of high malignant transformation rates: oral erythroplakia and proliferative verrucous leukoplakia.
 3. Oral cancers that appear as a growth or as an ulcer.
 4. Common benign discolourations, growths and ulcers that mimic OPMD or oral cancer.

Oral leukoplakia

- Defined as “a white plaque of questionable risk having excluded (other) known diseases or disorders that carry no increased risk for cancer”⁶.
- Common in males and among users of tobacco, areca-nut, alcohol and infected with HPV^{4,25}.
- Generally asymptomatic^{6,25}.
- Mainly two clinical types. Homogeneous leukoplakias are uniformly white, flat, and smooth. Non-homogeneous leukoplakia encompasses three sub-types: nodular, verrucous and erythroleukoplakia (mixed red and white or speckled)⁶.
- Appear anywhere in the mouth as single or multiple lesions; but are common on the buccal mucosa, alveolar mucosa, floor of the mouth, tongue, lips and palate^{25,26}.
- Cannot be scrapped off and the colour does not disappear when stretching the tissue²⁵.
- Size varies from small circumscribed areas to extensive lesions²⁵.
- Malignant transformation is 9.5%²⁷. However, higher transformation rates are observed in the following situations^{7,8,28}.
 - No history of risk habits (idiopathic)
 - Female gender
 - Size >200mm²
 - The floor of the mouth, lateral/ventral surfaces of the tongue
 - Non-homogeneous sub-types
 - Erosion or ulceration within the lesion
 - Long duration
 - Presence of candida



Figure 4.1:
Homogeneous leukoplakia
Note: Thick uniform white area.



Figure 4.2: Erythro-
leukoplakia
Note: White and red mixed areas.



Figure 4.3: Verrucous
leukoplakia
Note: An exophytic surface.

Proliferative verrucous leukoplakia

- Multiple, thick, white patches in more than two different oral sites. Lesions spread and coalesce during development²⁵.
- Often appearing in patients without known risk factors⁵.
- Frequently found on the gingiva, tongue, buccal mucosa, alveolar processes and palate^{4,25}.
- Possibility of recurrence in a previously treated area and high malignant transformation rate of 49.5%²⁷.
- Close follow-up is required⁴.



Figure 4.4: Proliferative verrucous leukoplakia

Note: Extensive thick white lesion involving different parts of the oral cavity in a patient.



Oral erythroplakia

- A fiery red sharply demarcated lesion that cannot be characterized clinically or pathologically as any other definable disease⁶.
- Relatively rare, the prevalence is 1-2%⁵.
- No gender preponderance and commonly seen in middle-aged and elderly^{5,29}.
- Generally, appear as a solitary lesion^{4,29}.
- Mostly asymptomatic⁵.
- Usually situated slightly depressed from the surface than the surrounding mucosa^{4,25,28}.
- Common sites are the soft palate, buccal mucosa, gingiva and floor of the mouth³⁰.
- It is soft to palpate and does not become indurated or hard until an invasive carcinoma develops in it²⁵.
- Should be distinguished from inflammatory disorders that appear red that may affect the oral mucosa²⁵.
- High malignant transformation rate - about 33%^{27,31}.
- Prompt treatment is required. Surgical excision is the treatment of choice³⁰.



Figure 4.5: Erythroplakia
Note: A fiery-red coloured patch.

Oral lichen planus

- Oral lichen planus is an autoimmune chronic inflammatory dermatological disease of unknown aetiology. However, oral lesions can appear with or without lesions in other parts of the body^{5,25,32}.
- Not associated with risk habits and is common in middle-aged females^{5,25}.
- Different subtypes. But commonly present as a characteristic lattice of radiating white striae (“Wickham striations”). It can also present as erosions, ulcers and very rarely as blisters. Long-standing lesions sometimes present with a background of blackish pigmentation^{4,5,25}.
- Appear anywhere in the mouth; but are common on the buccal mucosa, alveolar mucosa, floor of the mouth and tongue. Palatal lesions are rare²⁵.
- Usually bilateral presentation, but not essentially symmetrical^{25,32}.
- Mostly asymptomatic; however erosive sub-type present with burning sensation and soreness^{4,5,25}.
- The malignant transformation is 1.4%²⁷. The reddish erosive lesions have a higher transformation rate³².



Figure 4.9: Lichen planus – skin lesions



Figure 4.6: Oral lichen planus
Note: Characteristic white striae.



Figure 4.7: Pigmented oral lichen planus
Note: White striae are still visible.



Figure 4.8: Erosive oral lichen planus
Note: Erosive area in the lesion. White striae are still visible.

Oral submucous fibrosis

- Oral submucous fibrosis is a chronic disease characterized by progressive fibrosis of the sub-mucosal tissues^{33,34}.
- The disease is caused by the excessive chewing of areca-nut³⁵.
- Can occur at any age depending on the severity of chewing of areca-nut products³³.
- Not amenable to reverse at any stage of the disease either spontaneously or with cessation of habits³⁶.
- Buccal and labial mucosa, tongue, soft palate and gingivae are commonly affected. Involvement of the floor of the mouth is rare^{25,33}.
- Clinical presentation depends on the stage of the disease^{4,25,33}.

Early disease:

- Burning sensation of the oral mucosa or intolerance to spicy food.
- May have vesicles, particularly on the palate but not often seen.
- Blanching and stiffening of the oral mucosa with a leathery feeling on palpation.
- Ulceration and dryness of the mouth.
- The widespread pallor of the oral mucosa and tongue - *misdiagnosed as anaemia*.
- Depigmentation of the mucosa is particularly noticeable on the vermillion border of the lips - *misdiagnosed as scleroderma*.



Figure 4.10: Oral submucous fibrosis – early stage

Note: Wide-spread pallor and blanching of mucosa, tongue and depigmentation of the vermillion border of lips.

Late disease

- Palpable fibrous bands in cheeks, along the faucial pillars, soft palate and lips.
 - Tightening of the lips with resultant lack of their elasticity.
 - Depapillation of the dorsum of the tongue.
 - Restricted mouth opening and reduced mobility of the tongue including protrusion.
- No single satisfactory and evidence-based treatment method is available for the disease⁴.
 - The current protocol for the management can be divided into medical, physical, nutritional and surgical treatments with varying rates of success⁴.
 - The malignant transformation is 4.2% - 5.2%^{27,37}.
 - *Note: From the recent past, an increasing number of children are presented to health services with oral submucous fibrosis. The reason is probably due to the chewing of commercial areca-nut preparations. All dental and medical practitioners should be vigilant in detecting these patients at an early stage. Pictures of children presented with oral submucous fibrosis are given in figure 4.12.*



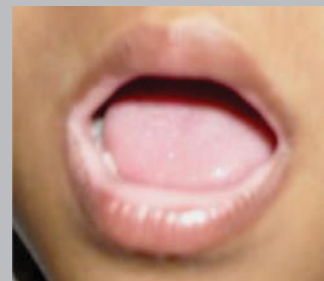
Figure 4.11: Oral submucous fibrosis – late stage

Upper: Restricted mouth opening (about 5mm).

Lower: Deformed tongue with restricted movements due to fibrous bands.

Figure 4.12: Oral submucous fibrosis – in children

Note: Depigmentation of lips and labial mucosa.



Oral lichenoid lesions

- Recently included as an OPMD⁶.
- Similar presentation as oral lichen planus but could be unilateral^{4,25}.
- Oral lichenoid diseases encompass both atypical oral lichen planus and oral lichenoid conditions. Characteristically, they present as white papules (and reticular formation). Sometimes they are accompanied by other clinical manifestations of sub-types of oral lichen planus (erosive-ulcerative, atrophic, plaque, and bullous)^{6,25}.
- Usually asymptomatic. Red and atrophic areas could be sore²⁵.
- They are probably due to dental restorative materials (e.g. amalgam), betel quid chewing (quid induced lichenoid reaction), certain medications (e.g. anti-diabetic drugs), following graft versus host reaction in transplant patients and liver pathologies^{6,25}.
- The malignant transformation rate is 3.8%²⁷.



Figure 4.13: Oral lichenoid lesions

Left: Restoration induced.

Middle: Betel-quid induced.

Right: Drug-induced.

Note: White, red or white-red lesions on lateral border of the tongue and buccal mucosa.

Other OPMDs that are not commonly found in Sri Lanka

- Oral lupus erythematosus
- Palatal lesions in reverse smokers
- Dyskeratosis congenita
- Oral graft versus host disease

Oral cancers appear as ulcers or growths

- In addition to the malignant transformation of OPMDs, oral cancer can independently develop as a growth or as an ulcer.
- Common features of malignant ulcers or growths are:
 - Usually painless at early stages, but develop symptoms later. The symptoms vary with the local infiltration of cancer.
 - Irregular margins.
 - Rapid growth with induration.
 - If cancer present as a non-healing ulcer it has rolled edges.
 - Exophytic surface if it appears as a growth.
 - Palpable lymph nodes, mostly in Stage III or higher.



Figure 4.14: Oral cancer - presenting as an ulcer

Note: Crate-shaped appearance with rolled edges and irregular margins.



Figure 4.15: Oral cancer - presenting as a growth

Note: Proliferative or exophytic appearance with irregular margins.

4.2 Benign lesions that mimic OPMDs or oral cancer

- Following are some common benign lesions/conditions that can mimic OPMD or oral cancer.

Common benign discolourations: localized (patches) or generalized

- Common benign lesions that can mimic OPMD or oral cancer are given in figures 4.16 and 4.17.

Frictional lesions

Due to known chronic irritation. Irregular whitish flakes related to source of trauma.

Left: White line (linea alba) in the cheek.

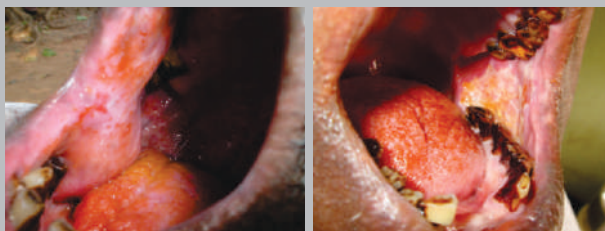
Right: White lesion on the tongue due to trauma.



Chewer's mucosa

Brown sporadic spots in the mouth due to betel-quid staining. Can be peeled-off.

Note: Stained teeth.



Smokers keratosis of palate

Whitish-gray appearance in the palate due to smoking. Usually disappear after quitting.



Leukoedema

A white opalescence, usually on the buccal mucosa (bi-lateral). Common in people with dark skin and in smokers. Lesion disappears or becomes less prominent when the mucosa is stretched.



Figure 4.16: Common benign discolourations that can mimic OPMD or oral cancer

Candidosis

Common in immunocompromised people and patients with prolonged use of antibiotics or steroids. Usually cause soreness in the mouth. 03 types of oral lesions are common.

Chronic hyperplastic candidosis (Upper)

White plaque or white-red mixed appearance. Common in commissural area, buccal mucosa and tongue.

Chronic atrophic candidosis (Middle)

Reddish discolouration and soreness in the mouth.

Left: Redness over the tongue.

Right: Generalized redness in the palate (with the presence of angular cheilitis).

Oral thrush (Lower)

White plaque, can be easily rubbed off leaving a tender, red, raw area beneath.



Melanotic pigmentation

Can appear in any part of the mouth.

Left: Dark brown spots on the tongue.

Right: Brownish pigmented patch on the buccal mucosa.



Geographic tongue

Migrating depapillations on the tongue. Common in children.

Note: De-papillated areas on the tongue.



Figure 4.17: Common benign discolourations that can mimic OPMD or oral cancer *contd.*

Common benign ulcers

- Common benign ulcers that can mimic OPMD or oral cancer are given in figure 4.18.

Aphthous ulcer

Painful ulcers. Two types.

Left: Minor aphthous ulcer

Usually heal within 2 weeks.

Right: Major aphthous ulcer

Very painful, may last up to 2 months.



Traumatic ulcer

Painful ulcers. Usually have a history of trauma and the cause can be identified. Heal within 2 weeks once the cause is removed.



Multiple oral ulcerations

Painful ulcers due to systemic diseases. Look for clinical history and other symptoms for exclusion.

Upper left: Pemphigus Cause blisters that burst easily and leave very sore patches. *Note: Ulcers on the palate.*



Upper right: Discoid lupus erythematosus Usually cause shallow erosions with white striae, which are less marked than oral lichen planus.



Lower: Erythema multiforme

Note: Ulceration of lower lip (left) and 'Target-eye' lesion on the skin (right).

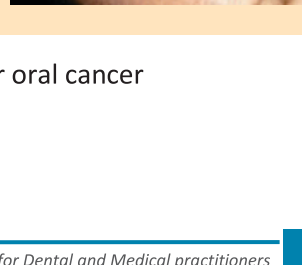
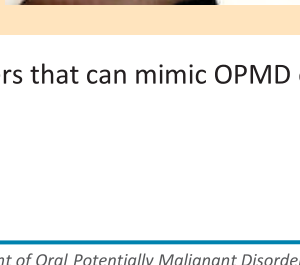


Figure 4.18: Common benign ulcers that can mimic OPMD or oral cancer

Common benign growths

- Common benign growths that can mimic oral cancer are given in figure 4.19. Note the smooth surface of all lesions. However, the benign nature of all these lesions has to be confirmed histopathologically.

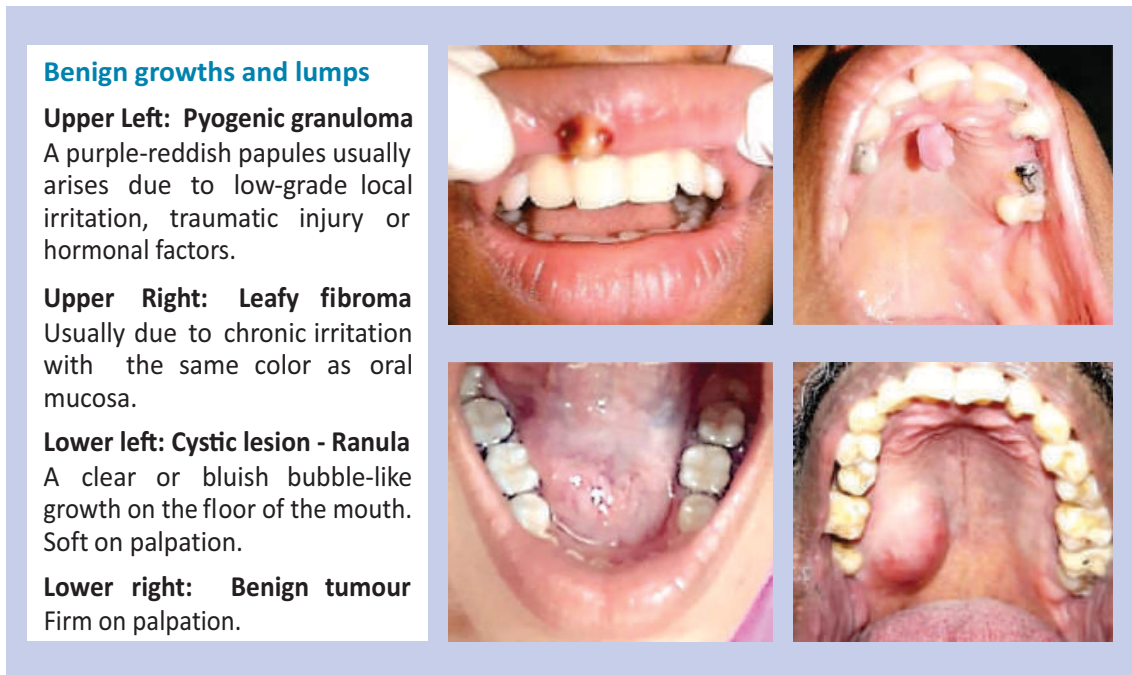


Figure 4.19: Common benign growths that can mimic oral cancer

Chapter 5

Management outline, referral pathways and roles and responsibilities of dental and medical practitioners

- The treatment of OPMD is decided by an OMF Surgeon depending on the degree of dysplasia. Back-referred patients to local dental clinics should be managed and followed-up under the guidance of OMF Surgeons.
- All dental and medical practitioners are expected to:
 - Be involved in creating awareness of public and health staff on OPMD and oral cancer including measures of prevention and control.
 - Perform habit-counselling for patients having risk-habits.
 - Perform oral screening for patients attending the clinic and refer identified cases to the nearest OMF clinic for management.
 - Support oral cancer prevention and control programme by participating in active screening programmes, maintaining relevant registers and submitting timely returns.

5.1 Management outline of OPMD

- At primary care institutions, oral screening has to be done on four different categories of attendees, namely;
 - Routine clinic patients
 - Referrals (by health staff)
 - Self-presentation due to oral problems
 - Clients of the empanelled population for compulsory oral screening at HLC
- Habit counselling (brief intervention) has to be done for all attended individuals with risk-habits.
- All patients identified with lesions should be educated on following aspects.
 - Nature of the condition and its prognosis.
 - Dietary advice: the importance of taking fresh fruits and vegetables whenever possible.
- Necessary measures need to be taken for oral hygiene improvement and to manage other dental problems if identified.
 - Dental surgeons have to provide necessary treatment at their clinic.
 - Medical officers have to refer them to the nearest dental clinic.
- Identified cases having excluded other possible causes should be referred to the nearest OMF clinic for management.
- For screen-negative people, reassure and advise for annual repeat screening.
- The clinical treatment of OPMD is decided by an OMF Surgeon, based on the degree of dysplasia after histological assessment of a biopsy.
- Depending on the degree of dysplasia the lesion is either monitored, managed medically or excised surgically. Symptomatic treatment is given when required.

- Recurrence suggests persistent or aggressive disease which needs wider re-excision if feasible and clinically appropriate.
- Even after treatments, patients are usually followed-up indefinitely due to the higher risk of malignancy throughout their life (field cancerization).
- Depending on the degree of dysplasia and the risk of malignant transformation, some OPMD patients are back-referred to a local dental clinic for management and follow-up under the guidance of OMF Surgeons.
- Management outline of oral cancer is given in the “National Guidelines for Management of Oral Cancers in Sri Lanka” published by the National Cancer Control Programme (NCCP).
Available at: www.nccp.health.gov.lk
- The referral pathway is given in figure 5.1.

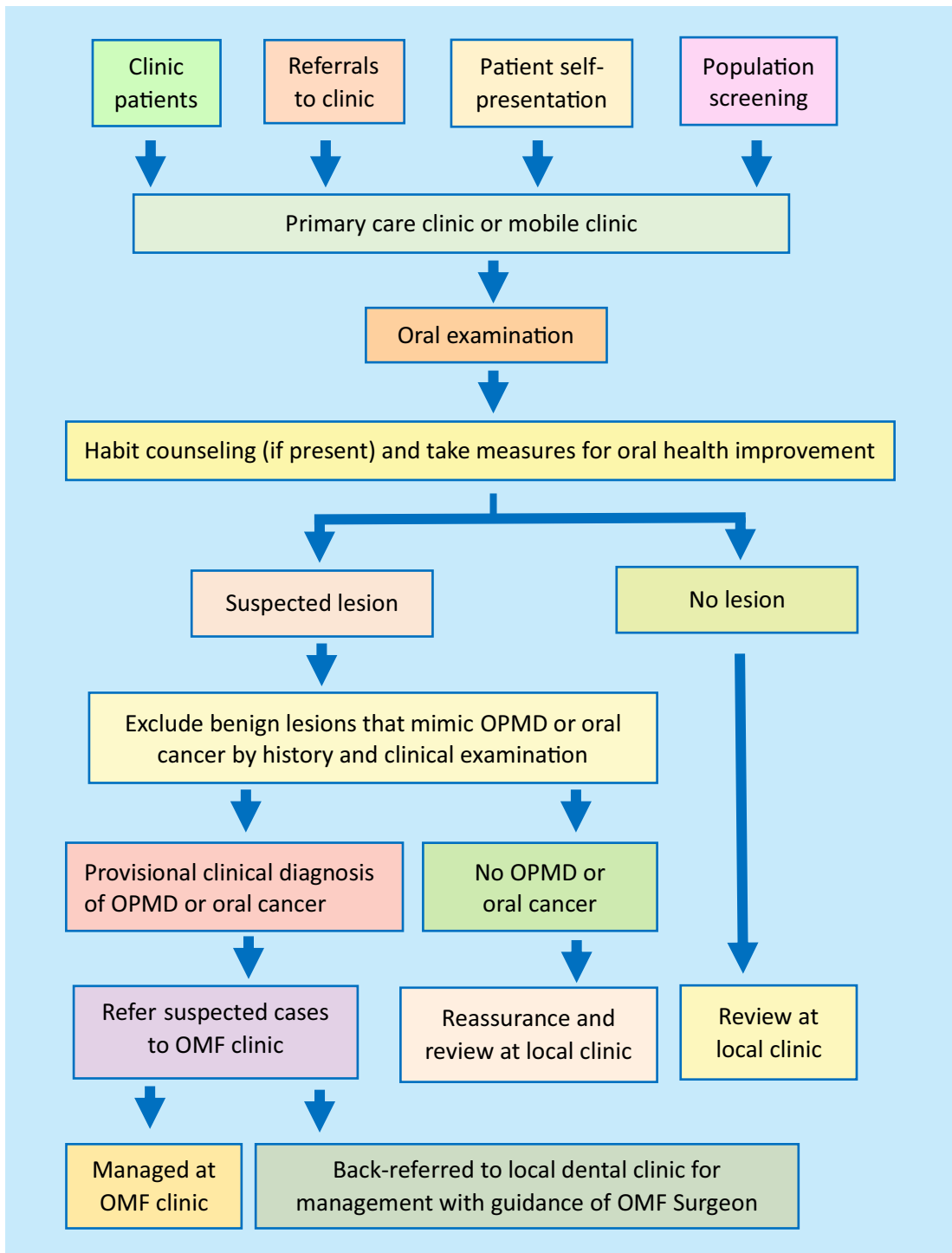


Figure 5.1: Referral pathway of patients

5.2 Roles and responsibilities of dental and medical practitioners

- Effective oral cancer prevention and control activities require multi-sectoral collaboration with the involvement of different categories of health and non-health personnel.
- The roles and responsibilities identified for each category of health staff and institutions are given in General Circular 01-54/2018 (the cover letter is in annexure 3).
- The roles and responsibilities of dental and medical practitioners are given below.

Role of dental practitioners

- Create awareness of public and health staff on risk factors and early signs and symptoms of OPMD and oral cancer.
- Educate and encourage people/patients to do regular self-mouth examinations and emphasize the importance of prompt professional oral examination when in suspicion.
- Perform habit-counselling for people/patients with risk habits for oral cancer.
- Examine all patients attending any clinical setting for OPMD and oral cancer.
- Provide preferential oral examination for clients referred from HLCs.
- Refer identified OPMD and oral cancer patients to the nearest OMF clinic for management after improving their oral health status.
- Manage back-referred OPMD cases as instructed by the OMF Surgeon.
- Maintain relevant registers related to oral cancer surveillance and submit timely returns to relevant authorities.
- Whenever requested, support oral cancer prevention and control activities in the area by participating in active screening programmes, public awareness programmes and in-service training of health staff.

Role of medical practitioners

- Create community awareness on early signs and symptoms of OPMD and oral cancer.
- Educate and encourage people/patients to do regular self-mouth examinations and emphasize the importance of prompt professional oral examination when in suspicion.
- Perform habit-counselling for people/patients with risk habits for oral cancer.
- Conduct OPMD screening for patients with risk habits attending medical clinics.
- Perform oral screening over the 35-year-old age cohort of the empanelled population when working at HLCs. (Refer: *“Manual for screening of Non-Communicable Diseases and Risk factors, Directorate of Non-Communicable Diseases” published by the Ministry of Health*). If dental service is available in the same facility, make arrangements to ensure all of them are screened by the dental surgeon.
- Refer suspected cases to the nearest OMF clinic for management.
- Maintain relevant registers related to oral cancer surveillance and submit timely returns to relevant authorities.
- Support oral cancer prevention and control activities in the area.

Chapter 6

Surveillance

- OPMD and oral cancer-related data are collected at HLCs, OPD dental clinics, mobile dental clinics and OMF clinics.
- For each type of clinic, specific data entry and reporting formats are in place with the necessary instructions. All dental and medical practitioners are expected to adhere to these and send timely returns.
- OPMD and oral cancer information are available in:
 - o “Cancer Registry” and “Annual Report” published by the NCCP.
 - o “Oral Health Report” and “Annual Health Bulletin” published by the Ministry of Health.

6.1 Importance of surveillance

- Surveillance of oral cancer is important to:
 - Estimate OPMD and oral cancer burden in society and forecast the future burden.
 - Plan for resource requirements for management based on the estimates.
 - Plan, implement and evaluate oral cancer prevention and control activities.
 - Provide evidence to initiate clinical, epidemiological and health service research.
- For a successful surveillance system, accurate timely data is required.
- Dental and medical practitioners are expected to support the oral cancer surveillance system as they are the only categories involved in detecting OPMD and oral cancer in Sri Lanka.

6.2 Process of oral cancer surveillance in Sri Lanka

- The OPMD and oral cancer-related data are collected at HLCs, OPD dental clinics, mobile dental clinics and OMF clinics.

At the population level:

- Individuals with risk habits are referred to dental clinics for oral screening by PHC staff using the specific form (annexure 4.1).

At Healthy lifestyle centres:

- With the demographic data of the clients, their risk habits and OPMD status are entered daily into the HLC register. All day entries are summarized to a monthly return (H1239) and sent to the Medical Officer/Non-Communicable Diseases (MO-NCD) at the RDHS office³⁸. A Quarterly return is sent by the MO-NCD to the Directorate of Non-Communicable Diseases, Ministry of Health.

At dental clinics/mobile dental clinics:

- All patients attending dental clinics are screened for OPMD and oral cancer.
- The number of patients with the type of OPMD and oral cancer is entered daily into the register for patients with OPMD and oral cancer (annexure 5.1). Identified cases are referred to OMF clinics using the specific referral form (annexure 4.2).

- All day entries are summarized into a monthly return and sent to the Regional Dental Surgeon (RDS) (annexure 6). With the total clinic performance, a summary count of OPMD patients is sent to the Research and Surveillance Unit, Institute of Oral Health (R&SU/IOH) Maharagama through the “Monthly Report of Hospital Dental Clinics” (H1201).
- A quarterly return on new patients with OPMD and oral cancers detected in the area is sent by RDS to the NCCP (annexure 7) and to the R&SU/IOH annually using a summary format of H 1201.

At OMF clinics:

- The number of patients presented with OPMD, its types, underlying habit histories and follow-up centre of each case are entered daily into the “Register for patients with Oral Potentially Malignant Disorders in Oral and Maxillo-Facial clinics” which contains a duplicate copy (annexure 5.2). The original copy is sent to NCCP quarterly. In addition, the total number of patients with the type of OPMD is summarized with the total work performances of the OMF clinic and sent to R&SU/IOH annually using an “Annual return of Oral and Maxillo-Facial Surgical Units”.
- Data on oral cancer are entered into the e-database (CanReg) and a soft copy is sent to the NCCP annually. It contains three categories of data; namely, socio-demographic information on patients, information on cancer (topographic and morphological) and the type of treatment given. Few centres that still submit paper-based annual return will be transformed to an e-based system in future.

6.3 Publishing OPMD and oral cancer-related information

- Whenever required, data sharing will take place between institutions at the district, provincial and national levels.
- Data on OPMD and oral cancer are published in the “Annual Report” of NCCP.
- Oral cancer incidence is available in the “Cancer Registry” published by the NCCP.
- A summary of OPMD and oral cancer data is also available in the “Oral Health Report” published by the R&SU/IOH and in the Annual Health Bulletin of the Ministry of Health.
- The data flow of the oral cancer surveillance system is elaborated in figure 6.1.

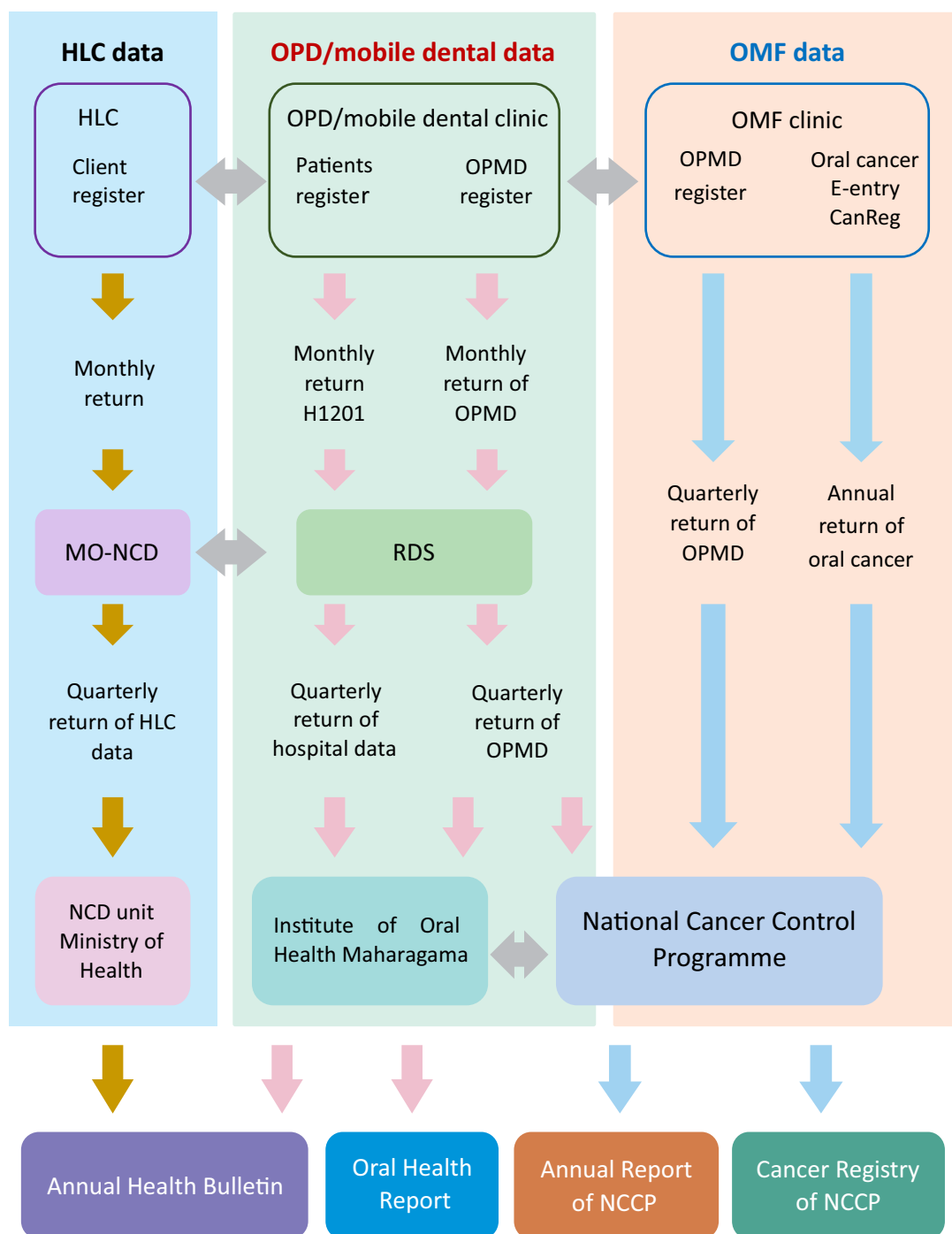


Figure 6.1: Flow-chart for the surveillance system of OPMD and oral cancer

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Annexures

Annexure 1:

Public Administration Circular: 11/2018. Prohibition of using and selling of Betel, Tobacco and Areca-nut related Products in the Premises of State Institutions

Circular is available at: <https://www.nccp.health.gov.lk>

Public Administration Circular : 11/2019

My No : EST-3/DICIP/06/0275
Ministry of Public Administration &
Disaster Management
Independence Square
Colombo 07.

06.05.2019

Secretaries to Ministries
Chief Secretaries of Provinces
Heads of Departments
Heads of Public Corporations and Statutory Boards

**Prohibition of using and selling of Betel, Tobacco and Areca nut related
Products in the Premises of State Institutions**

Further to the Public Administration Circular 08/99 dated 18.03.1999 on Prohibition of Smoking in State Institutions.

02. Since it has been prohibited by the Gazette Extraordinary of Democratic Socialist Republic of Sri Lanka No 1982/33, to produce, import, sale and presenting to sell smokeless tobacco products, it has been decided by the Cabinet of Ministers at the meeting held on 12.03.2019 to take actions as follows as a measure of reducing the risk of mouth cancer which is high among males in Sri Lanka.

03. Accordingly,

- I. Using and selling of betel, tobacco and areca nut related products in the premises of State Institutions is prohibited.
- II. Sale of betel, tobacco and areca nut related products in canteens of these institutions should be prohibited.

04. Heads of the State Institutions should ensure the adherence to these provisions.

Sgd/J.J. Rathnasiri
Secretary
Ministry of Public Administration &
Disaster Management

General Circular No: 1-14/2018. Banning of betel-quid chewing and selling of betel-quid, tobacco and areca-nut products in hospital premises and all other health care facilities

தொலைபேசி Telephone No.	2389477 2389480 2389567		மேல் மாடம் வா.ந. இல Ry.No.	NO. 1/14/14/2018
பேரம் காலம் Time	2389292 2389489		கீழ் மாடம் உட்கா. இல Yard No.	
தொலைபேசி மொத்தம் (கனம்) person	2 person and 10 and 10		பேரம் தாது Date	22/03/2018
மேல் மின்னல் கிணர் (கனம்) website	www.kanar.gov.in			

சுவாமிநாதன்
SUWASIRIPAYA

செலாவியல், மருத்துவம் மற்றும் மருத்துவ அமைச்சு
சுகாதாரம், பேரத்தை மற்றும் சுகாதார அமைச்சு
Ministry of Health, Nutrition & Indigenous Medicine

If you need any further clarifications please contact the Director or Consultant in Community Dentistry of National Cancer Control Programme (Tel: 0112368627).

Oral cancer is traditionally defined as squamous cell carcinoma of the lip, oral cavity and oropharynx. According to cancer incidence data in year 2010, lip, oral cavity and oropharyngeal cancers accounted for 14.3% of all reported cancers in Sri Lanka and it is the commonest cancer among males. Out of new cancer cases reported among males in 2010, 24% were cancers of the lip, oral cavity and pharynx. Apart from being a major risk factor for oral cancer, there are other health and cosmetic effects of betel chewing such as embolised lips and tongue, irritation of teeth, discoloration of mouth and teeth. Such effects may contribute towards personality problems of these betel chewers. The betel spit can make the environment unpleasant and could be considered as a major threat to the cleanliness of the traditional environment.

- cc: Hon. Minister of Health, Nutrition & Indigenous Medicine – for your information please
- Deputy Minister of Health, Nutrition & Indigenous Medicine – for your information please
- All Provincial Health Ministers
- All Provincial Health Secretaries
- Director, General of Health Services
- All Deputy Directors General
- Director - National Cancer Control Programme
- Director - NCD
- Director - Dental Services
- Director - Mental Health
- Director - Primary Care
- Director - Family Health Bureau
- Provincial Consultant Community Physicians/ Consultants in Community Dentistry
- Chief Medical Officer (School Health)
- All Regional Dental Surgeons
- All Medical Officers (Non Communicable Diseases)
- All Medical Officers (Maternal and Child Health)

Annexure 3:

General Circular No: 01-54/2018. Roles and responsibilities of healthcare staff and health institutions

Circular is available at: <https://www.nccp.health.gov.lk>

දුරකථන Telephone	2692473 2692490 2692502	 සුවසිරිපාය சுவசிரிபாய SUWASIRIPAYA	செய்தாங்க வெளியு. இல My No.	NCCP/ADM/26/2018
கனம் கூலர் Fax	2692113 2692119		செலுக்க உடனு. இல Your No.	
மின்னஞ்சல் முகவரி e-mail	postmaster@health.gov.lk		தேதி திகதி Date	27/11/2018
වෙබ් අඩවිය Internet site website	www.health.gov.lk			

සෞඛ්‍ය, පෝෂණ හා දේශීය වෛද්‍ය අමාත්‍යාංශය
சுகாதாரம், போசணை மற்றும் சுதேசவெத்திய அமைச்சு
Ministry of Health, Nutrition & Indigenous Medicine

General Circular No: 01-54/2018

To: All Provincial Directors of Health Services,
All Regional Directors of Health Services,
All Heads of Institutions/ District Medical Officers/Medical Officers In charge,
Medical Officers (Maternal and Child Health/Non Communicable Diseases),
All Regional Dental Surgeons,
All Medical Officers of Health.

Screening programme for Oral Potentially Malignant Disorders and early detection of Oral cancer:

Obtaining services of Public Health Midwives and Public Health Inspectors to identify and refer people at a higher risk for Oral Potentially Malignant Disorders and Oral cancer

"Oral cancer" is traditionally defined as squamous cell carcinoma of the lip, oral cavity and oropharynx. According to cancer incidence data in year 2011, lip, oral cavity and oropharyngeal cancers accounted for 16.4% of all reported cancers in Sri Lanka and it is the commonest cancer among males. Out of new cancer cases reported among males in 2011, 24% were cancers of the lip, oral cavity and pharynx.

Despite numerous advances in treatment of oral cancer, 5-year survival has remained approximately 50% for last 50 years. It has the highest mortality rate among all types of cancers (3 deaths per day) and is largely attributed to patients seeking medical advice only at a very late stage. This is proven by the fact that, of all oral cancer patients whose staging information is available, 76% are in stages III or IV (Cancer Incidence Data, Sri Lanka 2011).

There is sufficient research evidence regarding the aetiology of oral cancer. According to scientific evidence, habits such as betel quid chewing with or without tobacco, chewing of tobacco and areca nut products, smoking

and use of alcohol are considered as major risk factors for oral cancer. It has been shown that there is a high prevalence of above habits among Sri Lankan population.

According to the National Oral Health Survey 2002/2003, prevalence of betel quid chewing was 34% among 34-44 year olds and 47.2% among 65-74 year olds. Betel quid chewing is more prevalent in the rural communities when compared to urban communities. Non Communicable Risk Factor Survey, Sri Lanka 2015 (STEPS Survey) reported that among the adults aged 18-69 years more than one fourth of males (26%) and nearly 5% of females reported as currently using smokeless tobacco. This was more prevalent among older age groups. However, according to the recent scientific evidences, there is an emerging trend of increased usage of commercially self-prepared smokeless tobacco and areca nut products among younger age groups.

Screening of individuals having a higher risk for oral cancer facilitates the identification of Oral Potentially Malignant Disorders (OPMD) and detection of oral cancer in early stages. Early detection will also significantly improve the outcome of treatment and the quality of life of the patient.

Some population sub-groups such as drivers, estate workers, farmers, fishermen, married labourers, construction site workers, rural villagers, etc. are at a high risk of OPMD and oral cancer due to their risk habits in day today living. Hence, more attention should be paid for these population sub-groups when screening for OPMD/oral cancer.

A triad of criteria was developed to identify the individuals who are having a higher risk for OPMD and oral cancer and these individuals need refer to the Dental Surgeons for clinical oral examination and further management.

Triad of criteria:

1. Those who chew betel quid three or more times a day.
2. Those who chew betel quid less than three times a day and additionally smoke/consume alcohol/ smoke and consume alcohol habitually.
3. Those who habitually consume tobacco and areca nut products (like isacul, beeda, pan, panga, mowveta.)

Since Primary Health Care (PHC) staff has a large opportunity to encounter high risk individuals at community level, a decision was made to obtain services of Public Health Midwives (PHMs) and Public Health Inspectors (PHIs) for identification of individuals with a higher risk of having OPMD and oral cancer. Obtaining the services of PHMs for this activity was endorsed at the 19th meeting of the National Advisory Committee on Family Health, held on 7th July 2015. Since this activity is to be done by PHMs and PHIs during their routine home/field visits, it will not add an additional burden over their routine services.

Roles and responsibilities of health care facilities and service providers are identified (Annex I) in order to facilitate identification of people with OPMD and early detection of oral cancer, which will improve oral cancer prevention and control activities.

Public Health Midwives and Public Health Inspectors, either during their regular home visits or during other encounters with the community, should identify high-risk individuals for OPMD and oral cancer according to the triad of criteria given above. They should be referred to the Dental Surgeon in the nearest state hospital using referral forms provided (Annex II). Time slot between 10.30 am to 11.30 am on weekdays is identified as preferable for directing these individuals to hospital dental clinics. This will minimize interruption to routine therapeutic activities at the Dental Clinic and the waiting time. Dental Surgeons should ensure management of referred individuals according to the 'Guideline for Management of OPMDs'. If necessary, these patients should be referred to Oral & Maxillo-Facial Surgery (OMF) units using referral forms provided (Annex III). All referral received by the Dental Surgeon should be back-referred to respective PHM/PHI using the overhead of the referral form (Annex II).

For the purpose of referrals and back-referrals, the National Cancer Control Programme (NCCP) has developed two simple formats (Annex II & III). They will be provided as booklets.

1. Referral form to be used by Primary Health Care (PHC) staff to refer high-risk individuals to Dental Surgeons and the feedback form (Annex II).
2. Referral form to be used by Dental Surgeons to refer patients to Oral & Maxillo-facial Surgery (OMF) units and the feedback form (Annex III).

Overhead of the referral form was designed to provide the feedback from Dental Surgeon at hospital dental clinic to PHM/PHI (Annex II) or from OMF unit to Dental Surgeon who referred the clients (Annex III).

All the Provincial and Regional health authorities are advised to take necessary measures to facilitate and coordinate this initiative in order to reduce oral cancer burden in Sri Lanka.

If you need any further clarifications please contact the Director or Consultant in Community Dentistry of National Cancer Control Programme (Tel: 0112568627).

Dr. Anil Jasinghe
Director General of Health Services
Ministry of Health, Division of Indigenous Medicine,
"Saraswathi"
335, Raw Baddegoda, Wundupera, Bandaranaike,
Colombo 10.

CC: Deputy Director General - Public Health Services (S&I)
Deputy Director General - Non Communicable Disease Bureau
Deputy Director General - Dental Services
Director - National Cancer Control Programme
Director - Maternal and Child Health
Director - Non Communicable Diseases
Director - Dental Services
Director - Primary Care Services

Annexure 4: Referral forms

Annexure 4.1: Referral form for Primary Health Care staff to refer high-risk individuals for OPMD / oral cancer to dental surgeon

இரு சகைகளுக்கான கருவா ஏதாவது கிரேடு சந்தாரை மூலம் சுகாதாரப் பரிசோதனைகள் சம்பந்தமான விண்ணப்பப்படிவம்		உயர்/கிடை
கருவா கடை 21 கடைகளிலிருந்து / கடைகள் குடியிருப்பு	ச.கருவா கடைகளிலிருந்து / பொதுமையிலிருந்து உ.கருவா கடை 21 கடைகளிலிருந்து கட்டுத்திரிப்பு	
காலம் / பெயர்:	பதிவு/பெயர் ☐ கிரேடு/ஆண்டு ☐	
பிள்ளை/பெண்	குறிப்பாகப் பூரணமாக	பூர் ஏதாவது/பெண் பெ. பூரண
கருவா கிரேடு கட்டுவது / பரிசோதனைகளைக் கடைபிடிப்பது		
ஒருகிரேடு கட்டுவது/பெண்/பூரணமாக ☐	கருவா கடை கட்டுவது/பெண்/பூரணமாக ☐	
பூரணமாகப் பூரணமாக ☐	கட்டுவது/பெண்/பூரணமாக ☐	
கருவா கட்டுவது/பெண்/பூரணமாக ☐	கருவா கட்டுவது/பெண்/பூரணமாக ☐	

Annexure 4.2: Referral form of patients to OMF clinics

Referral form to OMF Surgical Unit			
Name of the patient:		Male ☐	Female ☐
Age:	Address:	Telephone number:	
Habits: Betel Chewing ☐ Consuming Alcohol ☐ Smoking ☐ Other ☐			
Reason for referral:			
Dental Surgeon's Signature		Hospital	Date

To be filled by the dental surgeon at OMF Surgical Unit (For feedback)

Diagnosis:

Treatment plan:

.....

To be reviewed in: 3/12 ☐ 6/12 ☐ 1 year ☐

Any comment:

Dental Surgeon's Signature

..... Hospital

..... Date

Annexure 5:
OPMD patients registers

Annexure 5.1: Register for patients with Oral Cancer and Oral Potentially Malignant Disorders –
OPD Dental Clinics (H1289)

H 1289

Name of the Dental Surgeon..... Institution..... Year/Month.....

Date	Reg. No.	Patient's Name	Age/Sex	NIC No.	Address	Site	Referred by	Clinical Diagnosis	Management	
									Treatment	Referred to

Annexure 5.2: Register for new OPMD patients at OMF clinics

H 1289a

Original

Name of the OMF Surgeon..... Institution..... Year/Month.....

Date	Reg. No.	Patient's Name & NIC No.	Age/Sex	Address	Referred by: TS / MD / PHN / FH / SSI	Habits: T- tobacco (AND OR G- PM) AL- alcohol	Site	Clinical Diagnosis	Management	
									Treatment	Followed up at OMF/OPD

Annexure 6:

Monthly return of dental surgeons on new patients with oral cancer and OPMD

Monthly Return for Dental Surgeons on new patients with Oral Cancer and Oral Potentially Malignant Disorders

This monthly return should be compiled by the Dental Surgeon/ Dental Surgeon-in-charge and should be sent to the Regional Dental Surgeon (RDS) of the district on or before 5th day of the subsequent month.

Information on high-risk individuals

Year		Month		RDHS Division	
Name of the Institution					
Number of high-risk individuals referred by (based on the PHC referral booklet)		PHC staff	MO	Self-referral	Other
Number of high-risk individuals reported to the Dental Clinic					

Information on individuals with OPMD/ suspected Oral Cancers

(Please refer the Register for new patients with Oral Cancer and Oral Potentially Malignant Disorders)	Referred by				Total
	Self-referral	PHC staff	GP	Other	
Total number of OPMDs detected at dental clinics					
Total number of suspected Oral Cancers detected at dental clinics					

Details of OPMD and suspected Oral Cancer detected at the Dental Clinic

Condition	Male	Female	Total
1 Leukoplakia			
2 Erythroplakia			
3 Oral sub mucous fibrosis			
4 Oral lichen planus			
5 Other OPMDs			
Total number of OPMDs			
Total number of suspected Oral Cancer			

Special Remarks:

Name of the Dental Surgeon : _____

Date : _____

Signature : _____

Annexure 7:

Quarterly return for RDS on new patients with oral cancer and OPMD

Quarterly return for Regional Dental Surgeons on new patients with Oral Cancer and Oral Potentially Malignant Disorders

This Quarterly Return should be compiled by the Regional Dental Surgeon based on the 'Monthly Return on new patients with Oral Cancer and Oral Potentially Malignant Disorders' by Dental Surgeons.

The quarterly return should be sent to Director, National Cancer Control Programme, Public Health Complex, 355/3, Elvitigala Mawatha, Narahenpita on or before 25th day of the month subsequent to the quarter.

Year _____ Quarter 1 ☐ (Jan-March) Quarter 2 ☐ (April-June) Quarter 3 ☐ (July-Sept) Quarter 4 ☐ (Oct-Dec)

RDHS Division		Under RDHS Division	Line Ministry
No of dental clinics in the District			
No of dental clinics who send all 3 returns at the end of the quarter			

Information on high-risk individuals

Number of high-risk individuals referred to the dental clinics by PHC staff during the quarter (Based on the PHC referral booklet)	PHC staff	MO	Self	Other	Number of high-risk individuals reported to the Dental Clinic during the quarter	

Details of OPMD and suspected Oral Cancer detected at the Dental Clinic

	OPMD Type	Male	Female	Total		OPMD Type	Male	Female	Total
1	Leukoplakia			5		Other OPMD's			
2	Erythroplakia			6		Total No of OPMD's			
3	Oral sub mucous fibrosis			7		Total No of suspected Oral Cancer			
4	Oral lichen planus								

(Please refer the Register for new patients with Oral cancer and Oral Potentially Malignant Disorders)	Referred by				Total
	Self-referral	PHC staff	MO	Other	
Total number of OPMDs detected at dental clinics					
Total number of suspected oral cancers detected at dental clinics					

Special Remarks:

Name of the RDS : _____
 Date : _____
 Signature : _____

Pictures of OPMD

Oral leukoplakia: stages and different sub-types



Oral erythroplakia



Oral lichen planus: different sub-types



Oral submucous fibrosis: early stage to severe stage



Notes

National Cancer Control Programme

555/5, Public Health Complex,
Elvitigala Mawatha, Colombo 05,
Sri Lanka.

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