EARLY DETECTION OF COMMON CANCERS AND REFERRAL PATHWAYS

First Edition

First Revision

TRAINING MODULES FOR HEALTH CARE PROVIDERS

Kementerian Kesihatan Malaysia

CAWANGAN PENYAKIT TIDAK BERJANGKIT (NCD)
BAHAGIAN KAWALAN PENYAKIT
KEMENTERIAN KESIHATAN MALAYSIA

Kementerian Kesihatan
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CONTENT

PREFACE

Cancer is one of the important Non-Communicable Diseases and feared by most people. It is the second leading cause of death worldwide and was responsible for 9.6 million deaths in 2018. Globally, nearly 1 in 6 deaths is due to cancer. It is a fact that around one third of cancer mortality are due to the 5 leading behavioural and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use.

In Malaysia, cancer has been one of the five most important causes of death in the Ministry of Health Hospital for the past two decades and contributed to 11.82% off all deaths occurred in 2018. Most of cancers in Malaysia are diagnosed at late stages and lead to reduce chances for effective treatment and cure. According to the Malaysia National Cancer Registry Report 2012-2016, around 63% of cancer were diagnosed at stage 3 and 4. This can be due to lack in awareness on the sign and symptoms as well as lack in health seeking behaviour among public. The statistic must be improved where more cancer should be diagnosed at earlier stage.

The health care providers, as the front liner play an important role in educating the public on cancer especially the risk factors and sign and symptoms, and thus, should be equipped with sufficient knowledge and information. With this in mind, the Ministry of Health, together with other related agencies, had developed this training module that will help refresh the knowledge on cancers among health care providers, aware of the early presentation of common cancers in Malaysia and able to recommend referral pathways to appropriate centres. This module is aimed to be used by the front-liners in public, private and NGOs in the country so that the message and information given to all health care providers is uniformed.

I hope, by taking active part in educating the health care providers, recognising the signs and symptoms and aware of the referral pathway, all health care providers will be able to advice the public / patients to take the correct steps and presented them self for further examination or procedure when necessary and to be managed promptly and accordingly.

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1. BACKGROUND

Cancer has become one of the most devastating diseases with more than 18 million new cases each year and is expected to continue rising. Like the other non- communicable diseases, the expected increase is mainly due to the adoption of unhealthy lifestyles and increased in elderly population. The burden of cancer does not only affect the patients, but their families and the societies too.

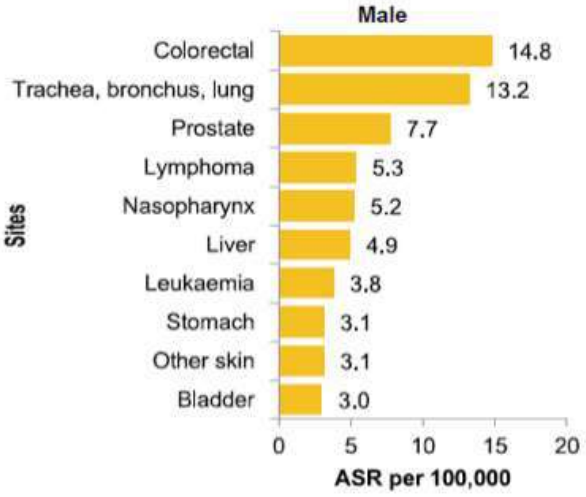
1.1 Cancer Situation Worldwide

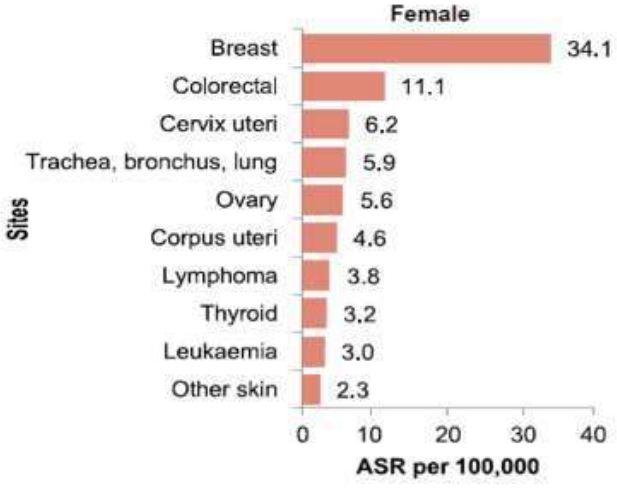
Globocan 2018, published by the World Health Organization (WHO) estimated that globally in 2018 there were 18.1 million new cases and 9.6 million cancer deaths. The three most common cancers reported among male were cancer of the lung (14.5%), prostate (13.5%) and colorectum (10.9%) whilst among female were cancer of the breast (24.2%), colorectum (9.5%) and lung (8.4%).

1.2 Cancer Situation in Malaysia

Cancer persisted as one of the five principal causes of national mortality for the past 20 years and its trend, in terms of absolute numbers, has escalated. According to the MOH Health facts, in 2018, cancer contributed to 11.82 % of all deaths in the Ministry of Health (MOH) hospitals compared to 9.23% in 1998. In private hospitals for the same year, it is the most important cause of deaths and contributed to 30.11% of all deaths occurred in private hospitals.

The ten most frequent cancers in general population, males and females in Malaysia for the period of 2012 – 2016 are as tabulated.





2. HEALTH FACILITIES IN MALAYSIA

Table 1: Health Care Facilities and Human Resources, 2018

GOVERNMENT	NO.	OFFICIAL BEDS
Ministry of Health		
Hospitals	135	37,609
Special Medical Institutions	9	4,815
Total	144	42,424
	No.	**Teams**
Health Clinics	1,090	-
Rural HealthClinics (Klinik Desa)	1,791	-
Mobile Health Clinics (Team)	-	217
Flying Doctor Services (Teams)	4 (helicopters)	10
***Community Clinic**		
Community Clinic	343	-
Community Mobile Clinic (Bus)	7	12
Community Mobile Clinic (Boat)	4	8
Dental Clinics	**No.**	**Dental chairs**
Standalone Dental Clinics	56	540
Dental Clinics in health clinics	586	1,563
Dental Clinics in hospitals	70	429
Dental Clinics in other Institutes	21	21
School Dental Clinics*	924	869
Mobile Dental Clinics**	35	63
Dental Mobile Teams		
Pre-school	136	
Primary and secondary school	461	
Elderly / special children	5	

Community Dental Clinics		
Community Dental Clinics (UTC)	22	44
Community Dental Clinics (RTC)	5	11
Community Dental Mobile Clinics (Bus)	1	1
Community Dental Mobile Clinics (Boat)	2	2
Non-Ministry of Health	**No.**	**Official Beds**
Hospitals	10	4187
Mobile Health Clinics (Team)	-	217
PRIVATE	**No.**	**Official Beds**
Licensed Hospitals	210	19,157
Registered Medical clinics	7,718	-
Registered Dental clinics	2,311	-

*Community Clinic, previously known as 1 Malaysia Clinic

HUMAN RESOURCE					
	MOH	Non-MOH	Private	Total	Profession : Population
Doctors	43,052	3,457	14,649	61,158	1 : 530
Dentists	5,768	687	3,244	9,699	1 : 3,339
Assistant Medical Officers	14,353	523	3,019	17,895	1 : 1,810
Nurses	65,153	6,346	34,874	106,373	1 : 304
Dental Therapist	2,863	n.a	n.a	2,863	1 : 3,488
Community Nurses	23,136	75	279	23,490	1 : 1,379
T&CM Practitioner	n.a	n.a	16,162	16,162	1 : 2,004

3. AIM OF THE MODULE

These training modules aimed to be used by trainers, in public, private and Non-Government Organisations (NGOs) in the country to train the Health Care Providers (frontliners) and ensuring the message and information given to all Health Care Providers are uniformed.

4. OBJECTIVE

The objective of the training is to refresh the knowledge on the signs and symptoms of cancers among Health Care Providers and increase awareness on:

i. Early presentation of common cancers in Malaysia
ii. Recommend referral pathways to appropriate centres (primary/ secondary/tertiary and/or private/public facilities/NGOs)

5. TARGET GROUPS

The target groups for this training modules are the first contact Health Care Providers namely:

i. Medical Officers and Paramedics at Health Clinics (such as MOH and LPPKN)
ii. Dentists and Dental Therapist (Nurses)
ii. General Practitioners
iii. NGO's

6. GOAL

i. To conduct one day training or seminar per state per year (virtual or class room)

7. MODULE CONTENT

This modules described the risk factors, signs and symptoms of the common cancers in Malaysia, namely, cancers of the breast, cervix, lung, colorectum, nasopharynx and oral. It also described the possible referral pathways when certain common signs and symptoms of these cancers are detected in a patient.

7.1 MODUL 1 : BREAST CANCER

7.1.1 Content Summary for Breast Cancer Module

Target Audience • *Healthcare Providers* ***Contents of Learning Module*** • *Instructor's Guide with Pre/ Post Self-Assessment* • *PowerPoint presentation*	***Goals*** *In this session, participants will gain a better understanding on risk factors and signs and symptoms of breast cancer* ***Objective*** *On completion of Module 1, participants will understand:* 1. *Epidemiology of breast cancer* 2. *Anatomy of the breast* 3. *Types of Breast Cancer* 4. *Signs and symptoms of breast cancer* 5. *Risk factors for breast cancer* 6. *Challenges to early detection of breast cancer* 7. *Screening* 8. *Treatment* 9. *Myths of breast cancer* 10. *Referral pathways* 11. *Patient navigation* ***Measures of Objective Accomplishment*** *The presenter will administer a pre self-assessment and a post self- assessment to measure participants' knowledge of the module's objectives. The pre self-assessment measures existing knowledge and the post self-assessment measures what was gained through the learning modul*

7.1.2 Pre/Post Self-Assessment for Breast Cancer Module

No.	Questions	True	False
1.	**Below are the statements on the breast cancer risk factors. Please circle the correct answer**		
	a. The non-modifiable risk factors for breast cancer are gender and age: the younger the woman, the higher her risk.	T	F
	b. Early age of menarche has been associated with decreased risk of breast cancer.	T	F
	c. The older the woman is when she begins childbearing, the lower her risk of breasts cancer.	T	F
	d. Woman who breastfeed reduces their risk compared with women who do not.	T	F
	e. The use of oral contraceptives increases the risk of breast cancer in current and recent users.	T	F
	f. Women taking HRT increases the risk of breast cancer compared to non-users.	T	F
	g. Detection of breast cancer in younger woman with denser breast is difficult.	T	F
	h. A previous diagnosis of breast cancer raises the risk of developing another breast cancer or recurrence.	T	F
	i. A woman with more than one first degree relative (mother or sister) affected with breast cancer has higher risk compared to having one relative affected.	T	F
	j. The risk increases for women who smoke compared to non- smokers.	T	F

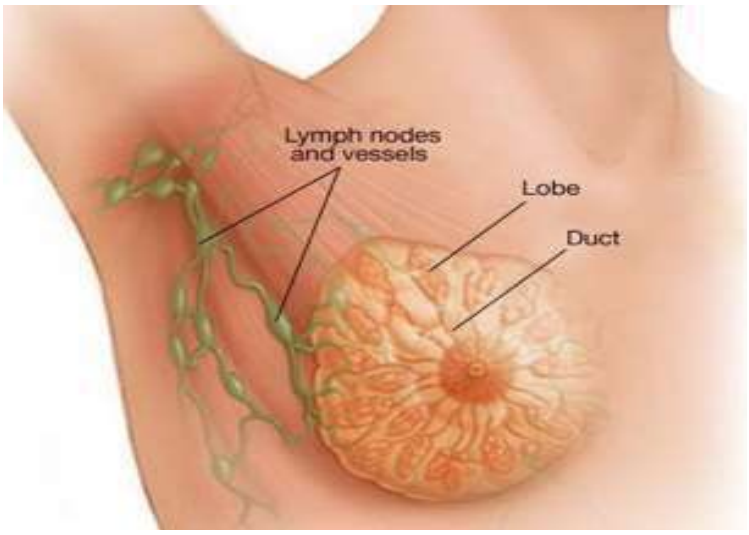
No.	Questions	True	False
2.	**Which are the symptoms of breast cancer? Please circle or underline the best answer** a. Change in the size or shape of the breast b. Nipple discharge or tenderness c. Ridges or pitting of the breast d. All of the above		
3.	**The commonest symptom of breast cancer is: Please circle or underline the correct answer** a. Nipple discharge b. Painless breast-lump c. Ulcer in the nipple d. Breast pain e. Eczema		
4	**What are the example of benign breast condition? Please circle or underline the best answer** a. Cyst b. Calcification c. Fibroadenoma d. Intraductal Papilloma e. All of the above		

7.1.3 Pre/Post Self-Assessment Answer Key for Breast Cancer Module

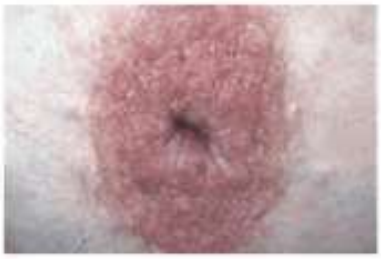
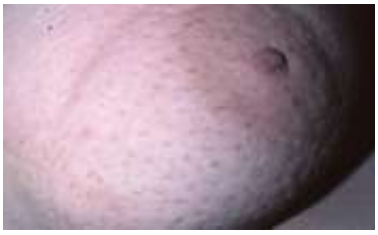
No.	Questions	True	False
1.	**Below are the statements on the breast cancer risk factors. Please circle the correct answer**		
	a. The non-modifiable risk factors for breast cancer are gender and age: the younger the woman, the higher her risk.	T	F
	b. Early age of menarche has been associated with decreased risk of breast cancer.	T	F
	c. The older the woman is when she begins child bearing, the lower her risk of breasts cancer.	T	F
	d. Woman who breastfeed reduces their risk compared with women who do not.	T	E
	e. The use of oral contraceptives increases the risk of breast cancer in current and recent users.	T	F
	f. Women taking HRT increases the risk of breast cancer compared to non-users.	T	F
	g. Detection of breast cancer in younger woman with denser breast is difficult.	T	F
	h. A previous diagnosis of breast cancer raises the risk of developing another breast cancer or recurrence.	T	F
	i. A woman with more than one first degree relative (mother or sister) affected with breast cancer has higher risk compared to having one relative affected.	T	F
	j. The risk increases for women who smoke compared to non- smokers.	T	F

No.	Questions	True	False
2.	**Which are the symptoms of breast cancer? Please circle or underline the best answer** a. Change in the size or shape of the breast b. Nipple discharge or tenderness c. Ridges or pitting of the breast d. <u>All of the above</u>		
3.	**The commonest symptom of breast cancer is: Please circle or underline the correct answer** a. Nipple discharge b. <u>Painless breast-lump</u> c. Ulcer in the nipple d. Breast pain e. Eczema		
4.	**What are the example of benign breast condition? Please circle or underline the best answer** a. Cyst b. Calcification c. Fibroadenoma d. Intraductal Papilloma e. <u>All of the above</u>		

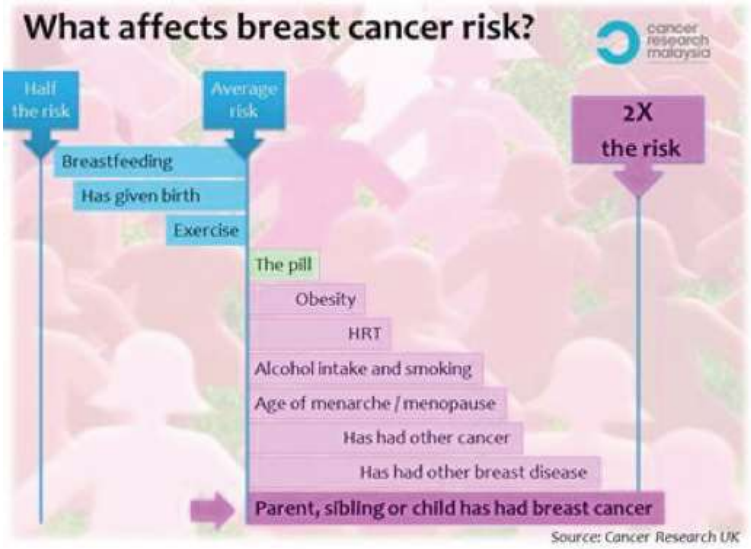
7.1.4. Breast Cancer : The Module

NO.	TOPICS	REMARKS
1.	**EPIDEMIOLOGY OF BREAST CANCER** Breast cancer is the most common form of cancer affecting women in Malaysia accounted for 34.1% from all cancers. The overall Age Standardised Incidence rate (ASR) for breast cancer is 34.1 per 100,000 population, were highest among Chinese (40.7/100,000), followed by Indian (38.1/100,000) and Malays (31.5/100,000). The lifetime risk for Chinese female was 1 in 22, Indian female was 1 in 23 and Malay female was 1 in 30. About one in 27 women in this country are at risk, compared to one in eight in Europe and the United States. Percentage of breast cancer detected at stage I and II was 52.1%.	Source: Malaysia National Cancer Registry (MNCR) Report 2012-2016
2.	**ANATOMY OF THE BREAST**  Woman's breast is made up of glands that make breast milk (lobules), ducts (small tubes that carry milk from lobules to the nipple), fatty and connective tissue, blood vessels, and lymph vessels.	

NO.	TOPICS	REMARKS
3	**TYPES OF BREAST CANCER** **i. Carcinoma in situ** This term is used for early stage cancer, when it is confined to the place where it started. In breast cancer, it means that the cancer is confined to the ducts or the lobules **ii. Ductal carcinoma in situ (DCIS)** This is the most common type of non-invasive breast cancer. DCIS means that the cancer is confined in the ducts. **iii. Lobular carcinoma in situ (LCIS)** This condition begins in the milk-making glands but does not go through the wall of the lobules. **iv. Invasive (infiltrating) ductal carcinoma (IDC)** This is the most common breast cancer. It starts in a milk passage or duct, breaks through the wall of the duct, and invades the tissue of the breast. **v. Invasive (infiltrating) lobular carcinoma (ILC)** This cancer starts in the milk glands or lobules. It can spread to other parts of the body.	
4.	**SIGN AND SYMPTOMS OF BREAST CANCER** The signs and symptoms may vary from person to person. However, having any of the abnormal findings in the list below should lead to a suspicion of breast cancer: a. A **lump** which is hard, fixed or irregular. Sometimes, it appears as a thickening mass in the breast or axilla.	

NO.	TOPICS	REMARKS
	b. **Enlargement** of lymph nodes in the axilla. c. **Nipple** i. **Discharge:** which can be persistent and is of bloody or watery nature; OR ii. **Retraction** of nipple – This is due to the contraction of fibrotic  Retracted nipple iii. Scaly skin around the nipple area d. **Skin** i. **Dimpling** of the skin ii. Has become like the skin of an orange. This is known as **Peau d' orange**  Peau d' orange e. Change in size and shape of breast.	Participants of the training should be given emphasis on the signs and symptoms

NO.	TOPICS	REMARKS
5.	**RISK FACTORS**	



There are different kinds of risk factors which can be divided into non- modifiable and modifiable risk factors.

A) Non-modifiable risk factors

i. Gender

Being a woman is the main risk factor for developing breast cancer. Men can develop breast cancer, but this disease is about 100 times more common among women than men. This is likely because men have less estrogen and progesterone hormones, which can promote breast cancer cell growth.

ii. Aging

Risk of developing breast cancer increases with age. In Malaysia, breast cancer was detected as early as in the twenties, and peaks at 55 years old.

NO.	TOPICS	REMARKS
	iii. Genetic risk factors About 5% to 10% of breast cancer cases are thought to be hereditary, resulting directly from gene defects (called mutations) inherited from a parent. BRCA1 and BRCA2: The most common cause of hereditary breast cancer is an inherited mutation in the BRCA1 and BRCA2 genes. In normal cells, these genes help prevent cancer by making proteins that keep the cells from growing abnormally. For families with BRCA mutation the risk may be as high as 80%. These cancers tend to occur in younger women and affecting both breasts and they also have higher risk of developing ovarian cancer. Changes in other genes: Other gene mutations can also lead to inherited breast cancers. They are not frequent causes of inherited breast cancer. These genes are: • Ataxia-Telangiectasia Mutation (ATM • Tumour Protein p53 (TP53 • Checkpoint Kinase 2 (CHEK2 • Phosphatase and Tensin Homolog (PTEN) • Cadherin 1 (CDH1) • Serine/Threonine Kinase 11 (STK11)	

NO.	TOPICS	REMARKS
	Genetic testing: Genetic tests can be done to look for mutations in the BRCA1 and BRCA2 genes or some other genes linked to breast cancer risk. Although testing may be helpful in some situations, the pros and cons need to be considered carefully. The service is available at selected Government centres such as HKL, PPUM and PPUKM. It is also available in certain private centre (eg. SJMC). The criteria for genetic testing is as outline in the CPG Management for Breast Cancer. **iv. Family history of breast cancer** Women with close relatives who have been diagnosed with breast cancer have a higher risk of developing the disease. Having more than one first degree relative (mother or sister) increases the risk as compared to having only one affected. The exact risk is not known, but women with a family history of breast cancer in a father or brother also have an increased risk of breast cancer. **v. Personal history of breast cancer** A woman with cancer in one breast has increased risk of developing a new cancer in the other breast or in another part of the same breast. This is different from a recurrence of the first cancer **vi. Certain benign breast conditions** Women diagnosed with certain benign breast conditions might have an increased risk of breast cancer. Some of these conditions are more closely linketo breast cancer than others.	

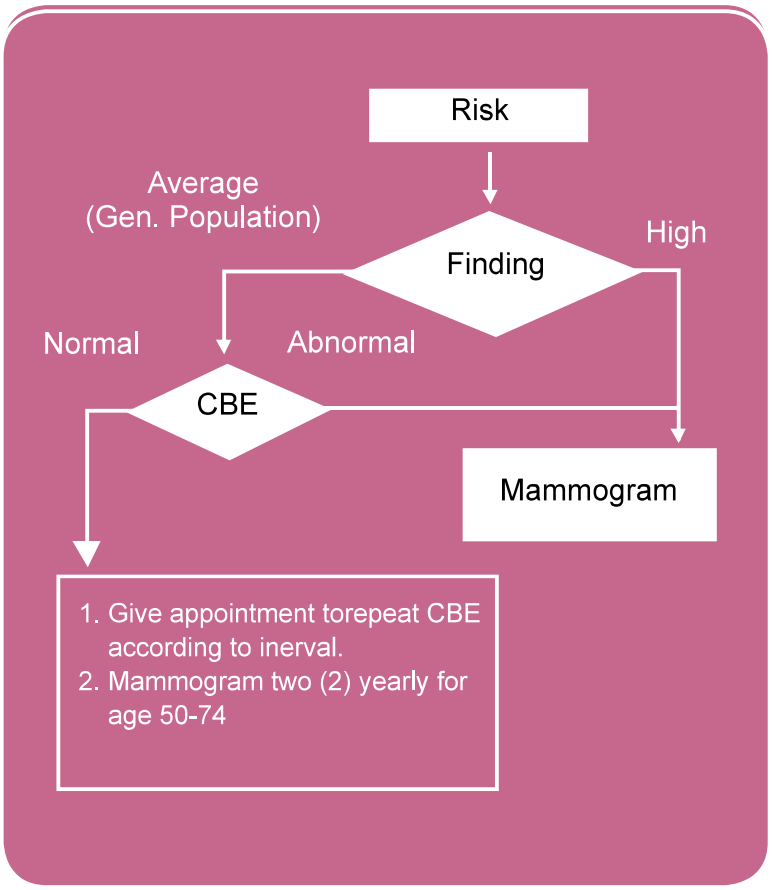
NO.	TOPICS	REMARKS
	There are 3 general groups, depending on how they affect this risk: **Non-proliferative lesions:** These conditions are not associated with overgrowth of breast tissue. They do not seem to affect breast cancer risk, or if they do, it is to a very small extent. They include: • Fibrosis and/or simple cysts (used to be known as fibrocystic disease) • Mild hyperplasia • Adenosis (non-sclerosing) • Ductal ectasia • Phyllodestumor (benign) • A single papilloma • Fat necrosis • Periductal fibrosis • Squamous and apocrine metaplasia • Epithelial-related calcifications • Mastitis (infection of the breast) • Other benign tumors (lipoma, hamartoma, hemangioma, neurofibroma, adenomyoepthelioma) **Proliferative lesions without Atypia:** These conditions show excessive growth of cells in the ducts or lobules of the breast tissue. They seem to raise a woman's risk of breast cancer slightly. They include: • Usual ductal hyperplasia (without atypia) • Fibroadenoma • Sclerosingadenosis • Several papillomas(called papillomatosis) • Radial scar	

NO.	TOPICS	REMARKS
	<u>Proliferative lesions with atypia:</u> In these conditions, there is an overgrowth of cells in the ducts or lobules of the breast tissue, with some of the cells no longer appearing normal. They have a stronger effect on breast cancer risk, higher compared to without atypia. These types of lesions include: • Atypical ductal hyperplasia (ADH) • Atypical lobular hyperplasia (ALH) Women with a family history of breast cancer and either hyperplasia or atypical hyperplasia have an even higher risk of developing a breast cancer. **vii. Menstrual periods** Early menarche (before age 12) and/or late menopause (after age 55) have a slightly higher risk of breast cancer. The increase in risk may be due to a longer lifetime exposure to the hormones estrogen and progesterone **viii. Nulliparous** Nulliparous or those who had their first child after age 30 have a slightly higher breast cancer risk. Having many pregnancies and becoming pregnant at a young age reduce breast cancer risk. Pregnancy reduces a woman's total number of lifetime menstrual cycles, which may be the reason for this effect.	

NO.	TOPICS	REMARKS
	B) Modifiable risk factors **i. Alcohol** Excessive alcohol use is known to increase the risk of developing breast cancer and other types of cancer. The risk increases with the amount of alcohol consumed. According to America Cancer Society, those who have 2 to 5 drinks daily have about 1½ times the risk of women who don't drink alcohol. **ii. Overweight or obese** Overweight or obese after menopause increases breast cancer risk. Obesity increases estrogen and blood insulin levels which have been linked to some cancers, including breast cancer. **iii. Tobacco smoke** Long-term heavy smoking is linked to a higher risk of breast cancer. **iv. Physical inactivity** Evidence is growing that physical inactivity increases breast cancer risk. **v. Breastfeeding** Breastfeeding may slightly lower breast cancer risk, especially if breastfeeding is continued for 1½ to 2 years.	

NO.	TOPICS	REMARKS
	One explanation for this possible effect may be that breastfeeding reduces a woman's total number of lifetime menstrual cycles (similar to starting menstrual periods at a later age or going through early menopause). **vi. Hormone replacement therapy (HRT)** Long term use of HRT (more than 10 years) increases the risk of developing breast cancer.	
6.	**CHALLENGES FOR EARLY DETECTION** • Poor uptake - people not coming for screening • Poor awareness - low education level and literacy leads to poor awareness in available screening. • Fear - Fear of the disease and facing the reality leads to late screening. • Culture & social barriers - shy, myths and society perceptions, poor family support hinder woman from coming forward for screening • Logistic limitation - Limited resources and infrastructure (rural areas eg: Sabah & Sarawak where the health facilities are far away)	

NO.	TOPICS	REMARKS
7.	**SCREENING** To identify asymptomatic individuals who may have the disease. Screening recommendation are as follows:- 1. Clinical Breast Examination (CBE) 2. Mammogram **<u>Breast Self Examination (BSE)</u>** BSE is not a screening modality, however women are encouraged to do BSE monthly to detect any abnormalities in their breast. **<u>Assessment of breast lump :</u>** If lump is suspected through BSE/CBE, radiological assessment is required. • The triple assessment: i) Clinical examination ii) Radiological assessment (mammogram or ultrasound) - Mammogram: Is done before fine needle biopsy to avoid interpretation difficulties should a haematoma result from the biopsy. A normal mammogram does not exclude a diagnosis of cancer. - Ultrasound: If an abnormality is seen on mammogram or felt by physical examination, ultrasound is used to find out if the abnormality is solid or fluid filled. It cannot determine whether the lump is cancerous or not.	

NO.	TOPICS	REMARKS
	iii) Fine needle aspiration cytology and core needle biopsy are the commonest methods of biopsy. Excision biopsy is when the whole lump is removed and sent to the pathology lab. • If all three are indicative of a benign lesion, it is highly probable that it is benign **Flow for breast cancer screening:**  	Source: Clinical Practice Guidelines: Management of Breast Cancer (3rd Edition). 2020

NO.	TOPICS	REMARKS
	Risk Stratification for mammography screening: Two (2) yearly mammography for women aged 50-74 years Screening at the age of 30 years old with mammography and/or MRI	

7.1.5 Power Point Presentation for Breast Cancer

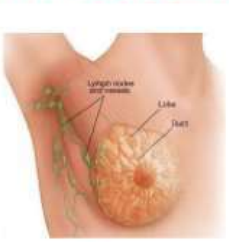
BREAST CANCER

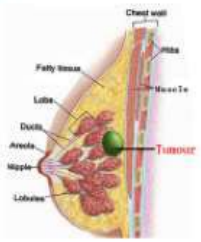
Early Detection of Common Cancers and Referral Pathways:

Module for Health Care Provider

Ministry of Health Malaysia

INTRODUCTION



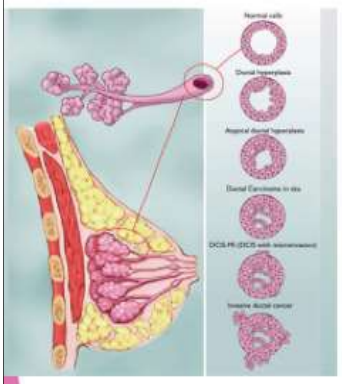


- Woman's breast is made up of:
  - glands (lobules)
  - ducts
  - fatty and connective tissue
  - blood vessels
  - lymph vessels

CONTENT

- INTRODUCTION
- RISK FACTORS
- SIGN AND SYMPTOMS
- CHALLENGES TO EARLY DETECTION
- SCREENING
- MYTHS
- PATHWAY
- NAVIGATION

INTRODUCTION - the types of breast cancer



- Carcinoma in situ
- Ductal carcinoma in situ (DCIS)
- Lobular carcinoma in situ (LCIS)
- Invasive (infiltrating) ductal carcinoma (IDC)
- Invasive (infiltrating) lobular carcinoma (ILC)

INTRODUCTION

- Breast cancer is the **most common cancer** in Malaysia
  - **19% of overall cancers, and**
  - **34.1% from all women cancers** in Malaysia
- The overall incidence rate for breast cancer was 34.1 per 100,000 population, highest among Chinese (40.7/100,000), followed by Indian (38.1/100,000) and Malays (31.5/100,000)
- **1:27 Malaysian women** will develop breast cancer in their lifetime
- Risk for **Chinese female is 1:22**, Indian female is 1:23 and Malay female is 1:30
- Percentage of breast cancer **detected at stage III and IV was 47.9%**
- Source : Malaysia National Cancer Registry (MNCR) 2012-2016

RISK FACTORS

- **Non-modifiable Risk Factors**
  - Gender
  - Aging
  - Genetic risk factors
  - Family history of breast cancer
  - Personal history of breast cancer
  - Certain benign breast conditions
  - Menstrual periods (early menarche or late menopause)
  - Nulliparous

RISK FACTORS

- **Modifiable Risk Factors**
  - Alcohol
  - Overweight or obese
  - Tobacco smoke
  - Lack of physical activity
  - Breastfeeding
  - HRT

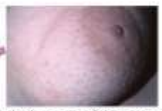
SCREENING
- Clinical Breast Examination (CBE)

- Breast examination by Health Care professional (doctors or certified nurses)
- Targeted for women aged 20 years and above, who attended Health Clinics
- Frequency of CBE performed is based on age group:
  - 20-39 years - every 3 years
  - 40 years and above - every year
  - High risk group (regardless of age) - every year

SIGN AND SYMPTOMS

- A lump which is hard, fixed or irregular. Sometimes, it appears as a thickening mass in the breast or axilla.
- Enlargement of lymph nodes in the axilla.
- Nipple
  - Discharge: can be persistent and is bloody or watery; OR
  - Retraction of nipple (inverted nipple)
    - This is due to the contraction of fibrotic
  - Scaly skin around the nipple area.

- Skin
  - Dimpling of the skin
  - Has become like the skin of an orange. This is known as Peau d' orange



- Change in size and shape of breast.

Breast Self-Examination (BSE)

- Although SBE is not a screening method, it is recommended as to raise awareness of breast cancer and empower women to take responsibility of their own health
- Recommendations:
  - All women age 20 years and above to perform BSE on a monthly basis, at the comfort of their own home
  - Women should be informed about the benefits and limitations of breast self examination
  - The importance of prompt reporting of any new breast symptoms to a health professional should be emphasized

CHALLENGES TO EARLY DETECTION

- **Poor uptake** - people not coming for screening
- **Poor awareness** - low education level and literacy leads to poor awareness in available screening.
- **Fear** - Fear of the disease and facing the reality leads to late screening.
- **Culture & social barriers** - shy, myths and society perceptions, poor family support hinder woman from coming forward for screening
- **Logistic limitation** - Limited resources and infrastructure (rural areas eg: Sabah & Sarawak where the health facilities are far away)

STEPS FOR BSE

Assessment of breast lump

If lump is suspected through BSE/CBE, radiological assessment is required

- The tripe assessment
  1. Clinical examination
  2. Radiological assessment (mammogram or ultrasound)
     i. Mammogram
     ii. Ultrasound: If an abnormality is seen on mammogram or felt by physical examination, ultrasound is used to find out if the abnormality is solid or fluid filled. It cannot determine whether the lump is cancerous or not
  3. Biopsy : Fine needle aspiration cytology and core needle biopsy are the commonest method of biopsy.
- If all three are indicative of a benign lesion, it is highly probable that it is benign

Screening mammography programme for high risk group

- Eligibility criteria:

1. Women age ≥40 years, **AND**
2. Has ≥ 1 risk factor from Criteria A **OR** ≥ 2 risk factors from Criteria B

CRITERIA	INTERVAL FOR MAMMOGRAM
Criteria A : Has at least one (1) of these factors	Yearly
• Family history of breast cancer. First degree relatives (mother / sister / daughter) diagnosed with breast cancer	
• BRCA 1 and BRCA 2 carrier	
• History of breast atypia	
Criteria B : Has at least two (2) of these factors	2 yearly
• Nulliparous OR first baby delivered at age > 30 years	
• Early menarche (< 12 years old)	
• Late menopause (> 55 years old)	
• On Hormone Replacement Therapy (HRT)	
• Obese (Body Mass Index ≥ 27.5)	

Source: *Garispanduan Program Pengesanan Awal Kanser Payudara Kebangsaan KKM, 2011*

Screening - Mammography

Screening mammography are based on risk of developing breast cancer:

A. General population

- NO strong family history of breast cancer
- NO personal history of breast cancer

→ Mammography is performed biennially in women aged 50-74 years old

B. High Risk Group

- BRCA mutation or other known genetic predisposition
- First-degree relatives of BRCA carrier who have not been tested
- History of chest radiation at young age
- Personal history(s) of breast cancer
- Calculated lifetime risk ≥20% by using Tyrer-Cuzick model

→ Screening should be done at the age of 30 years old with mammography and/or MRI

Source: Clinical Practice Guidelines: Management of Breast Cancer (3rd Edition), 202

REFERRAL PATHWAY

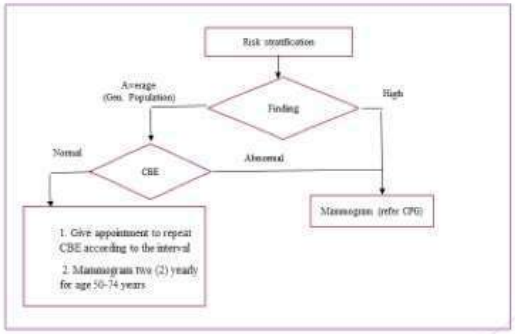
Screening: Patient WITHOUT any signs or symptoms

Self breast examination by patient/ Clinical breast examination (CBE) by doctor or nurse/ Mammogram

CBE can be done in any government clinics, GP, field trip or health screening center

Mammogram can be done in public or private hospital

SCREENING FLOW



REFERRAL PATHWAY

Diagnosis: Patient WITH signs or symptoms

Patient will be referred to hospital (Surgery clinic/ breast cancer clinic in public or private hospital)

History background taken by healthcare professional

Risk factors will be explained by healthcare professionals

Clinical breast examination by doctor or nurse/ Mammogram

MYTHS

1) **Antiperspirants cause breast cancer**
- There is no scientific evidence to support the claim that antiperspirants cause breast cancer, either because of toxin buildup or aluminum exposure.

2) **Bras**
- Underwire bras do not cause breast cancer.

3) **Breast implants increases risk of getting breast cancer**
- Women with breast implants are at no greater risk of getting breast cancer

4) **A mammogram can cause breast cancer to spread.**
- A mammogram of the breast currently remains the gold standard for the early detection of breast cancer. Breast compression while getting a mammogram cannot cause cancer to spread.

THANK YOU

PATIENT NAVIGATION

GP

- To identify the risks, signs and symptoms, explain that they need further evaluation and referral to hospital.
- - Best to alert the referring hospital (Breast Clinic or Surgical
- Outpatient Clinic - SOPD) about the patient particulars.
- Education material should be passed to the patients
- Advice and counsel the patient accordingly
- For further counseling and support, such as from a support group, refer the patient to a nearby NGO, if any (eg. MAKNA, NCSM, Cancer Research Malaysia, etc)

PATIENT NAVIGATION

HEALTH CLINICS

- To identify the risk, signs and symptoms, explain that they need further evaluation and refer to FMS/Breast Clinic/SOPD (refer *Garispanduan Program Pengesanan Awal Kanser Payudara Kebangsaan KKM, 2011)*
- Education material should be passed to the patients
- Health Clinics to follow-up on further management
- Advice and counsel the patient accordingly
- For further counseling and support, such as from a support group, refer the patient to a nearby NGO, if any (eg. MAKNA, NCSM, Cancer Research Malaysia, etc)

7.2 MODULE 2: COLORECTAL CANCER

7.2.1 **Content Summary for Colorectal Cancer Module**

Target Audience • *Healthcare Providers (Doctors and paramedics)* ***Contents of Learning Module*** • *Instructor's Guide with Pre/ Post Self-Assessment* • *PowerPoint presentation*	***Goal*** *At the end of this session, participants will have better knowledge on the risk factors, signs and symptoms of colorectal cancer and have better understanding of the referral pathway.* ***Objective*** *On completion of Module 2, participants will have improved knowledge on:* 1. *Epidemiology of colorectal cancer* 2. *Anatomy of the colon and rectum* 3. *Types of colorectal cancer* 4. *Signs and symptoms of colorectal cancer* 5. *Risk factors for colorectal cancer* 6. *Challenges to early detection of colorectal cancer* 7. *Screening programme – for asymptomatic individuals* 8. *Referral pathways* 9. *Patient navigation* ***Measures of Objective Accomplishment*** *The presenter will administer a pre self-assessment and a post self- assessment to measure participants' knowledge of the module's objectives. The pre self-assessment measures existing knowledge and the post self-assessment measures what was gained through the learning module.*

7.2.2 Content Summary for Colorectal Cancer Module

The correct answer to each question, is underlined

No.	Questions	True	False
1.	**Below are statements on colorectal cancer risk factors. Please underline the correct answer**		
	a. A personal history of colorectal cancer or polyps	T	F
	b. Inflammatory intestinal conditions.	T	F
	c. Inherited syndromes that increase colon cancer risk.	T	F
	d. Family history of colon cancer.	T	F
2.	**What are the contributing risk factors for developing colorectal cancer?**		
	a. Smoking	T	F
	b. Alcohol intake	T	F
	c. High protein and fiber diet	T	F
	d. A sedentary lifestyle	T	F
	e. Diabetes	T	F
	f. Obesity	T	F
	g. Hypertension	T	F
3.	**Which are the symptoms of colorectal cancer? Please circle or underline the best answer**		
	a. A change in bowel habits, including diarrhoea or constipation or a change in the consistency of stool.		
	b. Persistent abdominal discomfort, such as cramps, gas or pain.		
	c. Rectal bleeding or blood in stool.		
	d. A feeling that bowel doesn't empty completely.		
	e. All of the above		
4.	**What is the test to detect the presence of blood in stool? Please circle or underline the correct answer**		
	a. Stool iFOBT		
	b. Stool Ova and Cyst		
	c. Stool FEME		
	d. Stool for C&S		
	e. Rectal swab for C&S		

7.2.3 Pre/Post Self-Assessment Answer Key for Colorectal Cancer Module

The correct answer to each question, is underlined

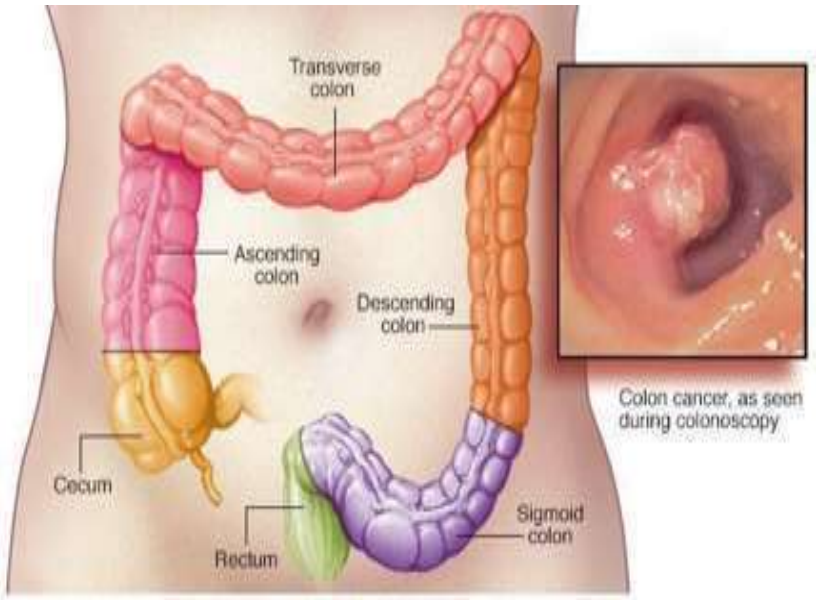
No.	Questions	True	False
1.	**Below are statements on colorectal cancer risk factors. Please underline the correct answer**		
	a. A personal history of colorectal cancer or polyps	T	F
	b. Inflammatory intestinal conditions.	T	F
	c. Inherited syndromes that increase colon cancer risk.	T	F
	d. Family history of colon cancer.	T	F
2	**What are the contributing risk factors for developing colorectal cancer?**		
	a. Smoking	T	F
	b. Alcohol intake	T	F
	c. High protein and fiber diet	T	F
	d. A sedentary lifestyle	T	F
	e. Diabetes	T	F
	f. Obesity	T	F
	g. Hypertension	T	F

No.	Questions	True	False
3.	**Which are the symptoms of colorectal cancer? Please circle or underline the best answer** a. A change in bowel habits, including diarrhoea or constipation or a change in the consistency of stool. b. Persistent abdominal discomfort, such as cramps, gas or pain. c. Rectal bleeding or blood in stool. d. A feeling that bowel doesn't empty completely. e. <u>All of the above</u>		
4.	**What is the test to detect the presence of blood in stool? Please circle or underline the correct answer** a. <u>Stool iFOBT</u> b. Stool Ova and Cyst c. Stool FEME d. Stool for C&S e. Rectal swab for C&S		

7.2.4 Colorectal Cancer : The Module

NO.	TOPICS	REMARKS
1.	**EPIDEMIOLOGY OF COLORECTAL CANCER** **World** The World Health Organisation in their Globocan 2018 reported that worldwide, colorectal cancer was the third most common cancer in men and contributed to 10.9% of the total all men cancer, whilst in women, it was the second most common (9.5%) after breast cancer (24.2%). The Age Standardised Incidence Rate (ASR) is higher in men (11.1 per 100,000 population) compared to in women (8.6 per 100,000 population). **Malaysia** Colorectal cancer is the most common cancer amongst males (16.9%) and the second most common (10.7%) cancers amongst females in Malaysia. The incidence increased with age and was slightly higher in males compared to females. The ASR for male was 14.8 per 100,000 and for female was 11.1 per 100,000. The incidence is highest among the Chinese (19.6/100,000) compared to Malay (12.2/100,000) and Indian (11.0/100,000). Colorectal cancer is one of the cancers which can be detected early through screening. According to MNCR 2012 - 2016 report, only 26.9% of colorectal cancer diagnosed at stage I and II.	

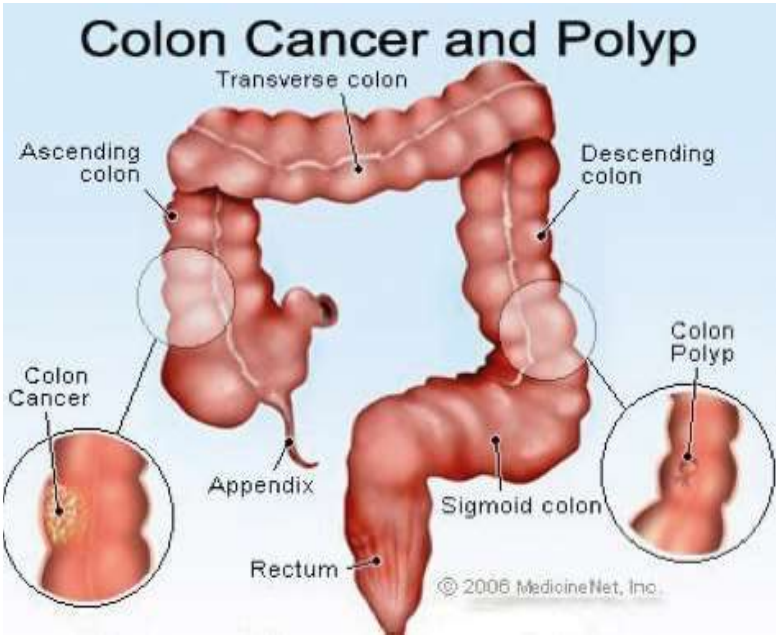
NO.	TOPICS	REMARKS
2.	**ANATOMY**	



The colon is divided into different parts:

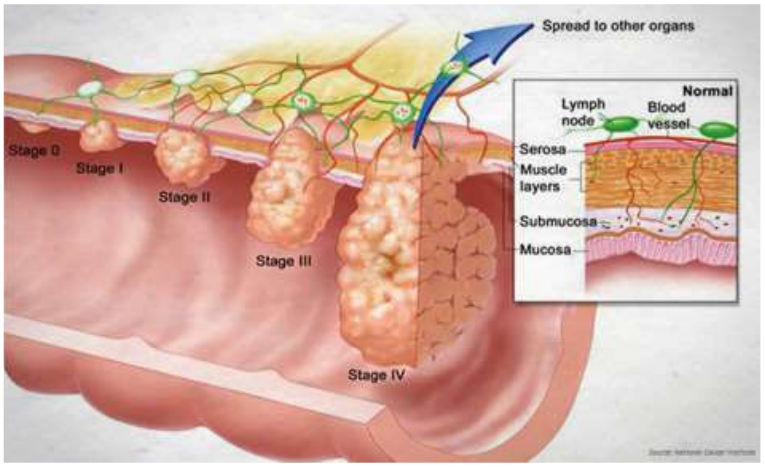
- Ascending colon - runs up the right side of the abdomen. It is connected to the small intestine by a section of bowel called the caecum
- Transverse colon - runs across the body from right to left, under the stomach
- Descending colon - runs down the left side of the abdomen
- Sigmoid colon - an 'S' shaped bend that joins the descending colon to the back passage

NO.	TOPICS	REMARKS
3.	**COLON POLYP - THE PRECANCER LESION**	



The colon is divided into different parts:

Colon polyps are important because they may give rise to colorectal cancer. The most common type of polyp is the adenoma or adenomatous polyp. The likelihood that an adenoma will develop into cancer is partially dependent on its size; the larger the polyp, the more likely it is that the polyp is or will become malignant



NO.	TOPICS	REMARKS
4.	**TYPES OF COLORECTAL CANCER** **1. Adenocarcinoma** Adenocarcinomas represent more than 95% of colon and rectal cancers. “Adeno” is the prefix for gland, and adenocarcinomas typically start within the intestinal gland cells that line the inside of the colon and/or rectum. They tend to start in the inner layer and then spread deeper to other layers. **There are two main subtypes of adenocarcinoma:** • **Mucinous adenocarcinoma** is made up of approximately 60 percent mucus. The mucus can cause cancer cells to spread faster and become more aggressive than typical adenocarcinomas. Mucinous adenocarcinomas account for 10 to 15 percent of all colon and rectal adenocarcinomas. • **Signet ring cell adenocarcinoma** accounts for less than one percent of adenocarcinomas. Named for its appearance under a microscope, signet ring cell adenocarcinoma is typically aggressive and may be more difficult to treat. **Other types of colorectal cancer:** There are many other types of rare colorectal cancers, and combined these types account for just 5 percent of all cases. Below are examples of other colorectal types:	

NO.	TOPICS	REMARKS
.	**2. Gastrointestinal stromal tumors:** Also known as GISTs, this is a rare type of colorectal cancer that starts in a special cell found in the lining of the gastrointestinal (GI) tract called interstitial cells of Cajal (ICCs). More than 50 percent of GISTs start in the stomach. While most of the others start in the small intestine, the rectum is the third most common location. GISTs are classified as sarcomas, cancers that begin in the connective tissues, which include fat, muscle, blood vessels, deep skin tissues, nerves, bones and cartilage. **3. Squamous cell carcinomas:** Some parts of the GI tract, like the upper part of the esophagus and the end of the anus, are lined with flat cells called squamous cells. These are the same type of cells that are found on the surface of the skin. Cancers starting in these cells are called squamous cell carcinoma. **4. Small cell carcinomas:** Small-cell carcinoma is a type of highly malignant cancer that most commonly arises within the lung, although it can occasionally arise in other body sites, such as the cervix, prostate, and gastrointestinal tract. Compared to non- small cell carcinoma, small cell carcinoma has a shorter doubling time, higher growth fraction, and earlier development of metastases. **5. Carcinoid Tumour** Carcinoids are rare tumours which tend to be slow growing. They may not cause any symptoms for several years. Most of these tumours occur in people over the age of 60. Carcinoid tumours are also sometimes just called carcinoid. They are one type of tumour of the neuroendocrine system	

NO.	TOPICS	REMARKS
5.	**SIGNS & SYMPTOMS** Get thorough history if a patient complaint of the following : • A change in bowel habits, including diarrhoea or constipation or a change in the consistency of stool. • Rectal bleeding or blood in stool. • Persistent abdominal discomfort, such as cramps, gas or pain. • A feeling that bowel doesn't empty completely (tenesmus) • Weakness or fatigue. • Unexplained weight loss	Signs and symptoms of the cancer should be given emphasis during the training
6.	**RISK FACTORS** **High Risk individuals for colorectal Cancer:** • **A personal history of colorectal cancer or polyps.** If a patient already had colon cancer or adenomatous polyps, they have a greater risk of colon cancer in the future. • **Inflammatory intestinal conditions.** Chronic inflammatory diseases of the colon, such as ulcerative colitis and Crohn's disease, can increase the risk of colon cancer. • **Inherited syndromes that increase colon cancer risk.** Genetic syndromes passed through generations of the family .These syndromes include familial adenomatous polyposis and hereditary nonpolyposis colorectal cancer, which is also known as Lynch syndrome.	

NO.	TOPICS	REMARKS
.	• **Family history of colon cancer.** If more than one family member has colon cancer or rectal cancer, the risk is even greater. **Among general population, risk of getting colorectal cancer is increase by:** • **Older age.** Majority of people diagnosed with colon cancer are older than 50. Colon cancer can occur in younger people, but it occurs much less frequently. • **Low-fiber, high-fat diet.** Colon cancer and rectal cancer may be associated with a diet low in fiber and high in fat and calories. Some studies have found an increased risk of colon cancer in people who eat diets high in red meat and processed meat. • **A sedentary lifestyle.** If someone is inactive, they are more likely to develop colon cancer. Getting regular physical activity may reduce the risk of colon cancer. • **Diabetes.** People with diabetes and insulin resistance may have an increased risk of colon cancer. • **Obesity.** People who are obese have an increased risk of colon cancer and an increased risk of dying of colon cancer when compared with people considered normal weight. • **Smoking.** People who smoke may have an increased risk of colon cancer. • **Alcohol.** Heavy use of alcohol may increaseyour risk of colon cancer. • **Radiation therapy for cancer.** Radiation therapy directed at the abdomen to treat previous cancers **may** increase the risk of colon cancer.	

NO.	TOPICS	REMARKS
7.	**CHALLENGES IN EARLY DETECTION** Some of the challenges are: • Poor awareness on the colorectal cancer signs and symptoms • Poor screening uptake • Late detection leads to poor prognosis in management of the patient • Logistic limitation – Limited resources and infrastructure (rural areas eg: Sabah & Sarawak where the health facilities are far away)	
8.	**CHALLENGES IN EARLY DIAGNOSIS** **SCREENING – for asymptomatic individuals** • A nation-wide colorectal cancer screening was initiated by the MOH in 2014. Under the MOH, screening service is provided at the health clinics using opportunistic approach. • The colorectal cancer screening is offered to every male and female aged 50-75 years. Asymptomatic individuals attended the clinics are offered / counseled to do the screening. • Immunological Faecal Occult Blood Test (iFOBT), the qualitative test, is used as a tool to detect the presence of blood in stool. The test kit consists of a small bottle (buffer) with sampling stick and a test cassette. • Clients are either requested to send their stool sample to the lab at the health clinic OR are offered to do a self-test at home. Those who are positive iFOBT are referred to hospital for colonoscopy.	For further information, refer to: *i) Buku Panduan Saringan dan Pengesanan Awal Kanser Kolorektal (2020)* ii)CPG Management of Colorectal Carcinoma (2017) published by the Ministry of Health.

NO.	TOPICS	REMARKS

RISK GROUP CATEGORIES (for asymptomatic individuals)

Risk Category	Criteria	Screening recommendation
Average risk	• Age >50 years old • No family history of colorectal cancer	Perform iFOBT test
Moderate risk	• Family history of colorectal cancer: • >1 FDR, or • 1 FDR and >1 SDR • >3 and 1 of them must be FDR * FDR: First Degree Relative, SDR: Second Degree Relative	Refer to hospital for further management
High risk	• Personal histoy of colorectal cancer or polyps • Infalmmatory bowel disease (such as Crohn's disease atau Ulcerative Collitis) • Family histroy with colorectal cancer diagnosed at aged <50 yearss • Family hisotry of hereditary colorectal cancer syndromes such as Familial Adenomatous Polyps (FAP), Hereditary non-polyposis Colorectal Cancer (HNPCC)/ Lynch syndrome, Peutz-Jeghers syndrome, Juvenile Polyposis dan MUTYH-Associated Polyposis (MAP)	Refer to hospital for further management

Following the risk categories,

i) If asymptomatic and aged 50-75 or average risk

► Do iFOBT screening

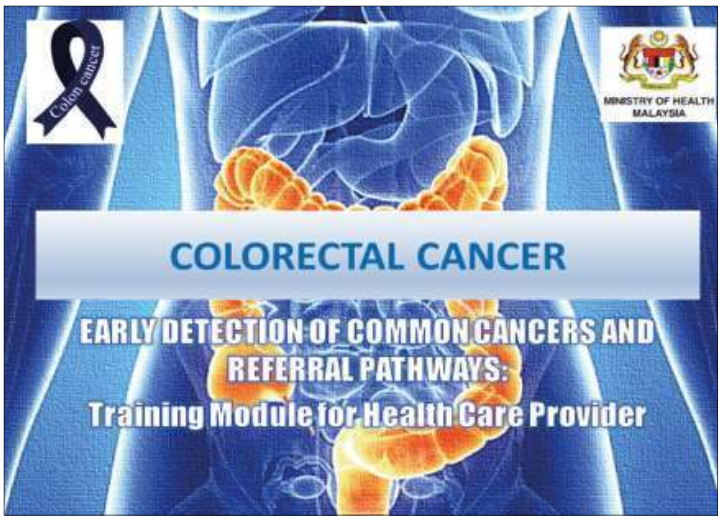
ii) If symptomatic or has moderate/high risk

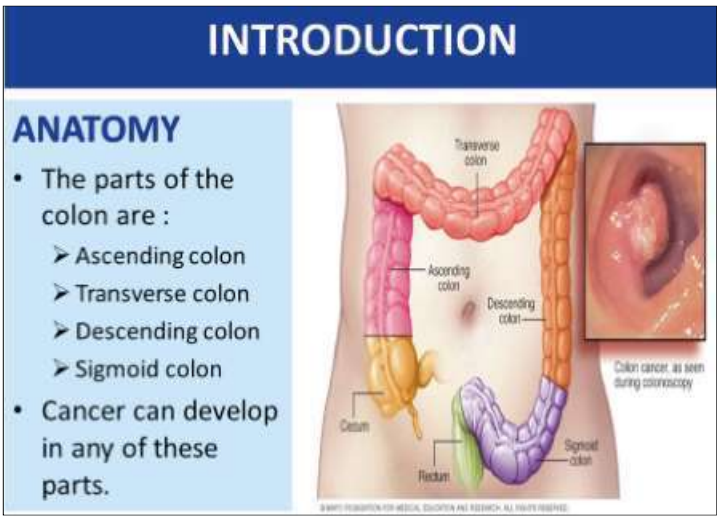
► Immediate referral to hospital for further management (do not perform iFOBT at the clinic)

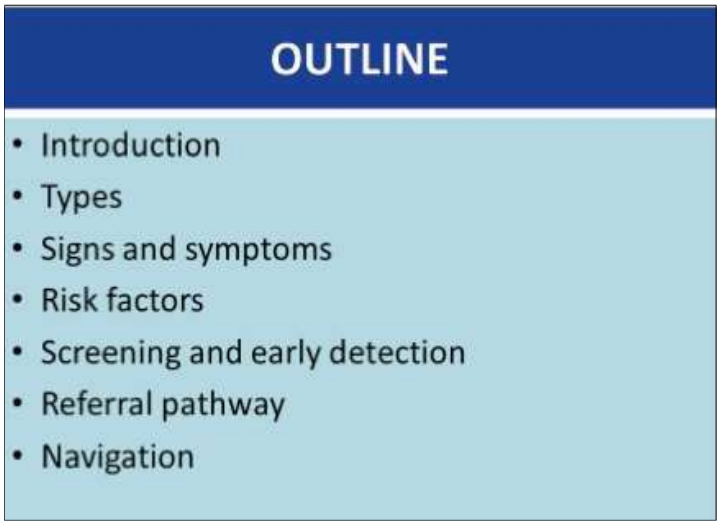
NO.	TOPICS	REMARKS
9.	**REFERRAL PATHWAY** **1. High Risk individuals** **2. Symptomatic individuals** **3. Asymptomatic individuals with positive iFOBT** Identify High Risk Patients / Symptomatic Patients / Asymptomatic with positive iFOBT ↓ Complete history taking and physical examinations ↓ Refer Gastroenterology/ Surgical Outpatient Department ↓ Give Follow up to Review Outcome	
10	**PATIENT NAVIGATION** • **GP** - To identify the risks, signs and symptoms, explain that they need further evaluation and referral to hospital. - Best to alert the referring hospital (Surgical Outpatient Clinic - SOPD / Gastro Clinic) about the patient particulars. - Education material should be passed to the patients. - Advice and counsel the patient accordingly.	

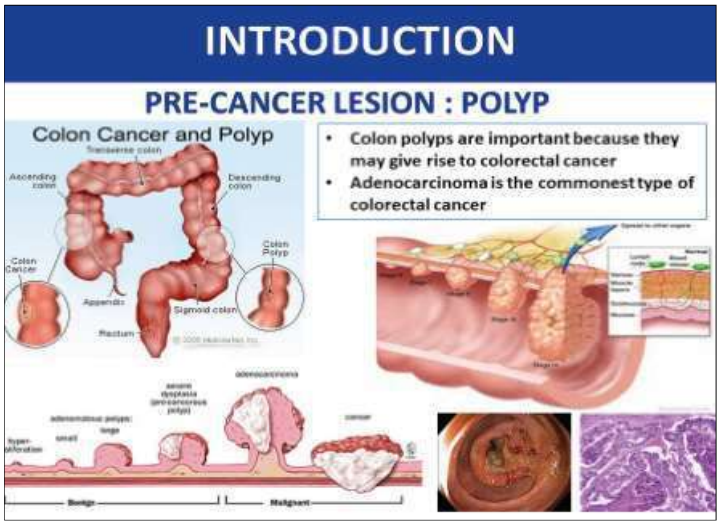
NO.	TOPICS	REMARKS
	- For further counseling and support, such as from a support group, refer the patient to a nearby NGO, if any (eg. MAKNA, NCSM, Corum, etc). • **Health Clinics** - To identify the risks, signs and symptoms, explain that they need further evaluation and referral to hospital. - Best to alert the referring hospital (Surgical Outpatient Clinic – SOPD / Gastro Clinic) about the patient particulars. - Education material should be passed to the patients. - Advice and counsel the patient accordingly. - For further counseling and support, such as from a support group, refer the patient to a nearby NGO, if any (eg. MAKNA, NCSM, Corum, etc)	

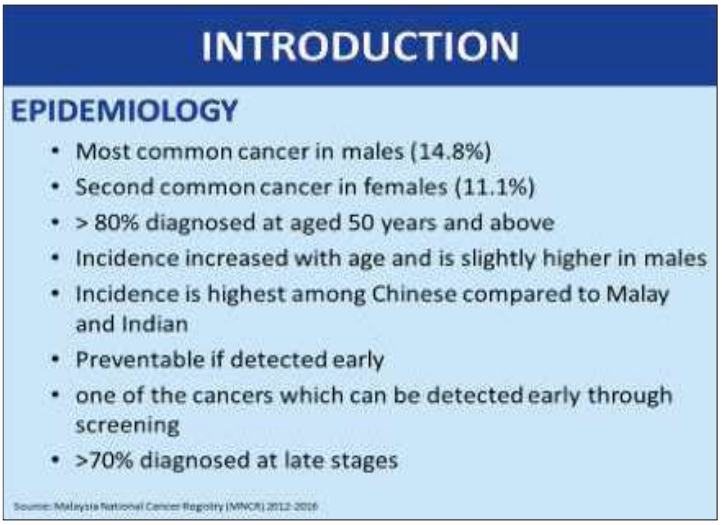
7.2.5 Power Point Presentation for Colorectal Cancer Module

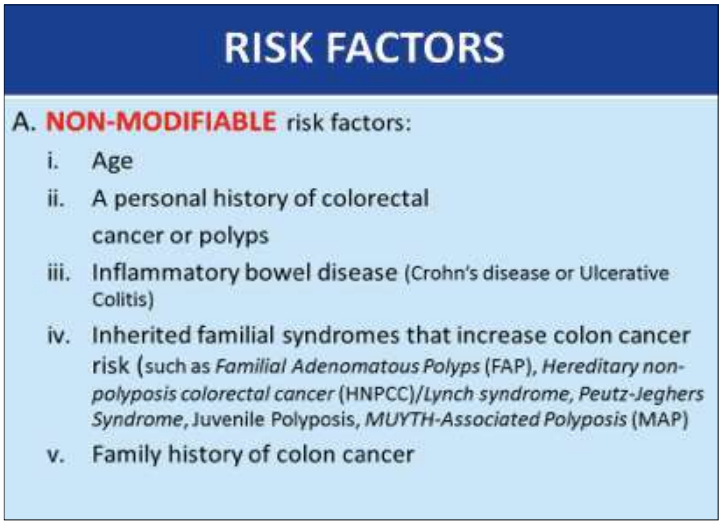












RISK FACTORS

B. **MODIFIABLE** risk factors:


- Sedentary lifestyle
- Low-fiber, high fat diet
- Obesity
- Smoking
- Alcohol



SCREENING

- Offered to,
  - ➢ **Asymptomatic male and female aged 50-75 years**
- There are 2 options given to each clients, either:
  - i. Self-test by giving iFOBT kit to eligible clients to do the test at home and inform medical personnel once result obtain; OR
  - ii. Clients send their stool sample to respective clinic for lab testing
- **Those who are positive iFOBT will be referred for colonoscopy.**

SIGNS & SYMPTOMS

- Altered bowel habits (diarrhoea or constipation or a change in the consistency of stool)
- Per rectal bleeding or blood in stool
- Persistent abdominal discomfort (cramps, gas or pain)
- Tenesmus
- Weakness or fatigue
- Unexplained weight loss
- Anaemia
- Palpable abdominal or anorectal mass

RISK GROUP CATEGORIES (if asymptomatic)

Risk Category	Criteria	Screening recommendation
Average risk	• Age >50 years old • No family history of colorectal cancer	Perform iFOBT test
Moderate risk	Family history of colorectal cancer: • >1 FDR, or • 1 FDR and >1 SDR • >3 and 1 of them must be FDR *FDR: First Degree Relative, SDR: Second Degree Relative	Refer to Hospital for further management
High risk	• Personal histoy of colorectal cancer or polyps • Infalmmatory bowel disease (such as Crohn's disease atau Ulcerative Collitis) • Family histroy with colorectal cancer diagnosed at aged <50 yearss • Family hisotry of hereditary colorectal cancer syndromes such as Familial Adenomatous Polyps (FAP), Hereditary non-polyposis Colorectal Cancer (HNPCC)/Lynch syndrome, Peutz-Jeghers syndrome, Juvenile Polyposis dan MUTYH-Associated Polyposis (MAP)	Refer to Hospital for further management

CHALLENGES IN EARLY DETECTION

- Poor awareness on availability of screening
- Poor awareness on signs and symptoms
- Lack of promotion among healthcare providers and public
- Poor screening uptake
- Late detection

PATHWAY

Identify High Risk Patients / Symptomatic Patients

↓

Complete History Taking and Physical Examinations

↓

Refer Gastroenterology/ Surgical Outpatient Department

↓

Give Follow up To Review Outcome

PATHWAY

If **SYMPTOMATIC** or **MODERATE/HIGH RISK**

↓

Urgent referral to Hospital for further management

PATIENT NAVIGATION

From GP and Health Clinics

- To identify the risk, signs and symptoms
- Explain that they need further evaluation
- Refer the patients to hospital.
- Alert the referring hospital on patients particulars
- Counsel the patients
- For further counselling and support, refer patients to nearby NGO, if any (eg. MAKNA, NCSM, Corum, etc)

PATHWAY

If **ASYMPTOMATIC**

AND

AGED 50-75 YEARS OLD

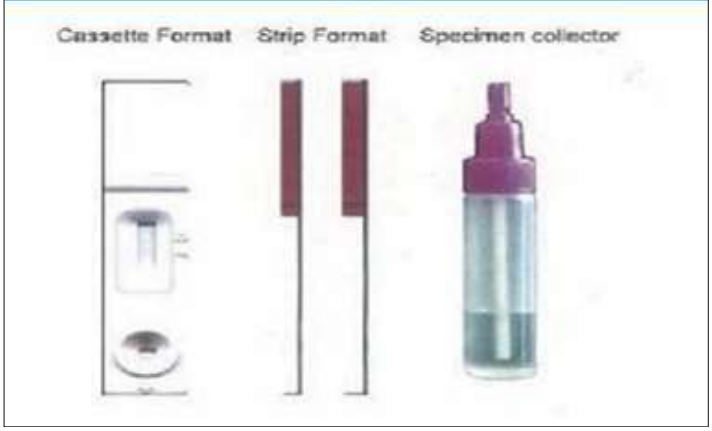
or **AVERAGE RISK**

↓

iFOBT screening

THANK YOU

SAMPLES OF iFOBT KIT



7.3 MODUL 3 : CERVICAL CANCER

7.3.1 Content Summary for Cervical Cancer Module

Target Audience • *Healthcare Providers (Doctors and paramedics)* ***Contents of Learning Module*** • *Instructor's Guide with Pre/ Post Self-Assessment* • *PowerPoint presentation*	***Goal*** *At the end of this session, participants will have better knowledge on the risk factors and sign and symptoms of cervical cancer and better understanding of the referral pathway.* ***Objective*** *On completion of Module 3, participants will have improved knowledge on :* 1. *Epidemiology of cervical cancer* 2. *Anatomy of the cervix* 3. *Types of cervical cancer* 4. *Signs and symptoms* 5. *Risk factors* 6. *Challenges in early detection* 7. *Screening* 8. *Primary prevention – HPV immunization* 9. *Myths of Cervical Cancer* 10. *Referral pathways* 11. *Patient navigation* ***Measures of Objective Accomplishment*** *The presenter will administer a pre self-assessment and a post self- assessment to measure participants' knowledge of the module's objectives. The pre self-assessment measures existing knowledge and the post self-assessment measures what was gained through the learning module.*

7.3.2 Pre/Post Self-Assessment for Cervical Cancer Module

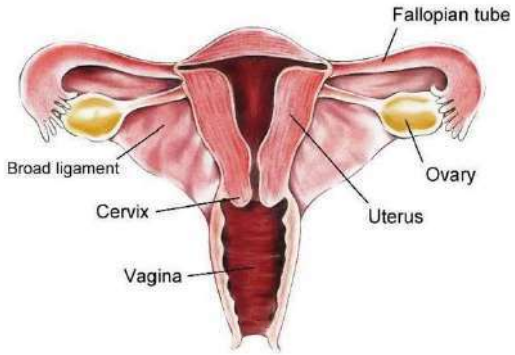
No.	Questions	True	False
1.	**Below are statements on colorectal cancer risk factors. Please underline the correct answer**		
	a. Promiscuous is a risk factor for cervical cancer	T	F
	b. Persistence HPV infection has been associated with decreased risk of cervical cancer.	T	F
	c. Multiparous women have higher risk of cervical cancer.	T	F
2.	**Which are the symptoms of cervical cancer? Please circle T/F or underline the correct answer**		
	a. Abnormal vaginal bleeding in between menstrual cycle	T	F
	b. Abnormal vaginal bleeding after menopause	T	F
	c. Pain during menstruation	T	F
	d. Bleeding during intercourse	T	F
	e. Foul smelling vaginal discharge	T	F
	f. Lower abdominal pain.	T	F
	g. Pelvic pain.	T	F
3.	**Below are statements on HPV Vaccination. Please circle or underline the correct answer**		
	a. HPV type 16 & 18 are the commonest HPV type that causes cervical cancer.	T	F
	b. HPV Vaccination is recommended for girls only.	T	F
	c. Only 1 dose of HPV vaccination is needed for optimum protection.	T	F
	d. For the National HPV Immunisation Programme in Malaysia, the HPV immunization is given to adolescent aged 13 years through the School Health Programme.	T	F

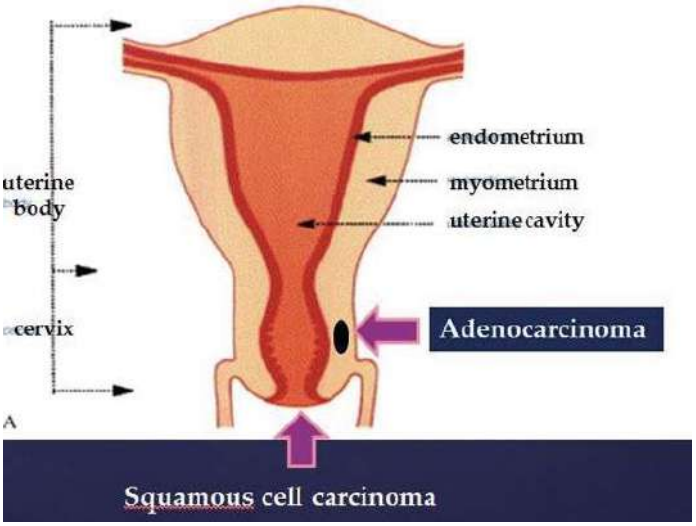
7.3.3 Pre/Post Self-Assessment for Cervical Cancer Module

The correct answer to each question, is underlined

No.	Questions	True	False
1.	**Below are statements on cervical cancer risk factors. Please circle or underline the correct answer**		
	a. Promiscuous is a risk factor for cervical cancer	T	F
	b. Persistence HPV infection has been associated with decreased risk of cervical cancer.	T	F
	c. Multiparous women have higher risk of cervical cancer.	T	F
2.	**What are the contributing risk factors for developing colorectal cancer?**		
	a. Abnormal vaginal bleeding in between menstrual cycle	T	F
	b. Abnormal vaginal bleeding after menopause	T	F
	c. Pain during menstruation	T	F
	d. Bleeding during intercourse	T	F
	e. Foul smelling vaginal discharge	T	F
	f. Lower abdominal pain.	T	F
	g. Pelvic pain.	T	F
3.	**Below are the statements on the HPV Vaccination. Please circle or underline the correct answer**		
	a. HPV type 16 & 18 are the commonest HPV type that causes cervical cancer.	T	F
	b. HPV Vaccination is recommended for girls only.	T	F
	c. Only 1 dose of HPV vaccination is needed for optimum protection.	T	F
	d. For the National HPV Immunisation Programme in Malaysia, the HPV immunization is given to adolescent aged 13 years through School Health Programme.	T	F

7.3.4 Cervical Cancer : The Module

NO.	TOPICS	REMARKS
1.	**EPIDEMIOLOGY OF CERVICAL CANCER** Cervical cancer is one of the deadliest but most easily preventable cancer for women. The Globocan 2018 published by the WHO reported that cervical cancer was the third most common cancers among women worldwide and contributed to 6.6% of all cancers occurred in women with 311 365 deaths occurred annually. In Malaysia, the Malaysia National Cancer Registry (MNCR) 2012-2016 reported that cervical cancer was the third most common cancer among women, and contributed to 6.2% of all cancers among women. The Age-Standardised Rate (ASR) was 6.2 per 100,000. The incidence rate was noted to be higher in Chinese (6.8/100,000) compared to in Indian (5.5/100,000) and in Malay (4.6/1000,000). Around 60% of the cases were detected at Stage I and II. Infection of the cervix by Human Papiloma Virus is the most common causes of cervical cancer. In woman, high risk types of HPV such as type 16, 18, 31 and 45 cause abnormal changes in the cervical cells.	
2.	**ANATOMY OF THE CERVIX**  Cervix is part of a woman's reproductive system. It is the lower, narrow part of the uterus (womb). During pregnancy, the cervix's roles to "hold" the baby in the uterus. During childbirth, uterine contractions will dilate the cervix to allow the baby to pass through.	

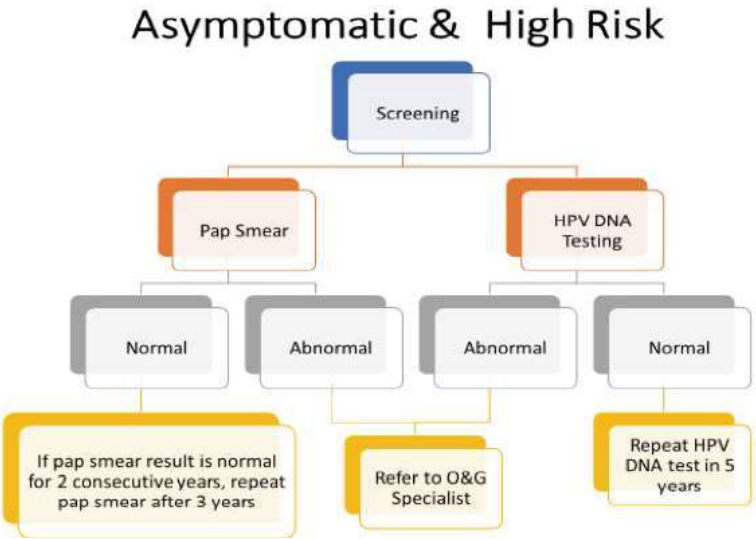
NO.	TOPICS	REMARKS
3.	**TYPES OF CERVICAL CANCER**  **The main types of cervical cancers are:** i. Adenocarcinoma ii. Squamous cell carcinoma	
4.	**SIGNS AND SYMPTOMS** There are rarely any symptoms in the early stages of cervical cancer. As cervical cancer progresses, symptoms begin to appear. Common symptoms : • Abnormal vaginal bleeding of discharge • Bleeding after menopause • Post coital bleeding • Abdominal pain Other possible symptoms : • Pain during sexual intercourse • Painful urination • Lower back pain	Signs and symptoms of the cancer should be given emphasis during the training

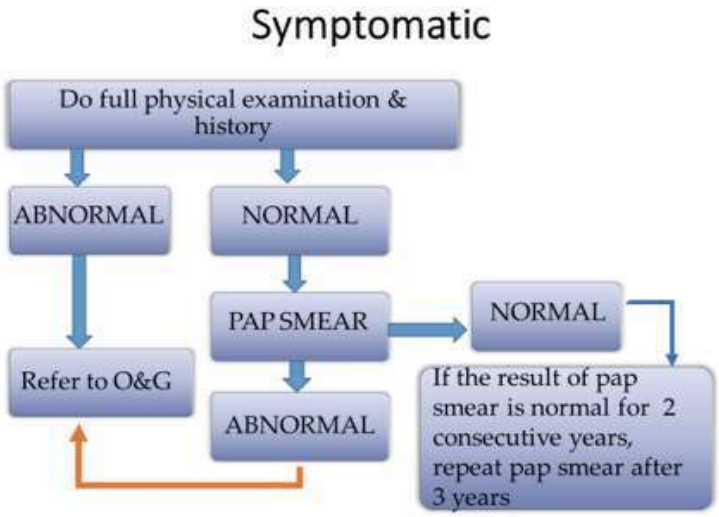
NO.	TOPICS	REMARKS
5.	**RISK FACTORS** The primary cause of cervical cancer is infection with certain types of Human Papilloma Virus (HPV) which is transmitted sexually. Multiple risk factors are associated with the development of the cancer: • >3 sexual partners • early sexual intercourse (<17 years old) • >10 years' use of oral contraceptive • first delivery before age of 17 • high parity (≥7 full term pregnancies) • smoking • lower socioeconomic status	Source : CPG Management of Cervical Cancer (Second Edition) 2015
6.	**CHALLENGES IN SCREENING/EARLY DETECTION** • Poor awareness - low education level and health literacy leads to poor awareness in available screening. • Fear - fear of the disease and facing the reality leads to late screening. • Lack of promotion among Health Care Provider and public. • Poor screening uptake due to limited resources and infrastructure • Late symptoms detection. • Culture & social barriers - shy, myths and society perceptions, hinder woman from coming forward for screening. • Logistic limitation - remote areas, live far from health care facilities.	

NO.	TOPICS	REMARKS
7.	**CERVICAL CANCER SCREENING** Screening is done for secondary prevention and is carried out for early detection of cervical cancer. Screening: • Does not prevent HPV from infecting the cervix • Detects any abnormalities in the cervix so that early treatment can be given[1]. The risk of developing cervical cancer is approximately 3-10 times higher in women who are not regularly screened[2]. Screening is vital but does not detect all pre-cancerous lesions or prevent all cervical cancer[3]. Any woman aged 20-65 years who has had sexual intercourse should be screened for cervical cancer. Types of Cervical Cancer Screening:- a) Cytology : • Conventional Pap Smears • Liquid Base Cytology b) Molecular (currently not available at MOH facilities): • HPV DNA Testing • Onco e6 Protein **Pap Smea**r - Cervical cancer screening using Pap smear was initiated in Malaysia in 1969 and became a national programme in 1995. Pap smears is done yearly, however, if two consecutive smears are negative, it should be repeated every 3 years.	1. Sankaranarayanan R et al. Int J Gynecol Obstet 2005; 89 Suppl 2: S4–12; 2 National Cancer Institute. Screening for cervical cancer. 2005. 3. Prendiville W et al. The Health Professionals HPV Handbook. 2004

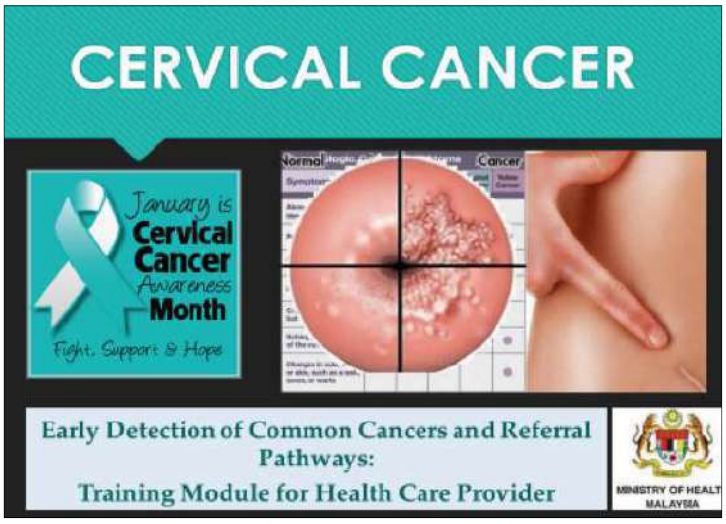
NO.	TOPICS	REMARKS
	HPV DNA testing has been shown to be more effective than cervical cytology in detection of precancerous changes of cervix. Primary HPV testing was initiated in 2019 at selected clinics throughout Malaysia. **Screening criteria:** • All sexually active women aged 30-49 years should be screened for HPV DNA. • Women less than 30 years and 50-65 years are advised for Pap smear screening - screening interval is every 3 years. HPV DNA is done either as self-sampling by women or by health care professional Screening interval for HPV DNA testing is every 5 years for those who are tested HPV negative	
8.	**PRIMARY PREVENTION : HPV IMMUNISATION / VACCINATION** • Vaccination builds up antibodies against HPV • The immune response following immunisation is higher at age of 9 to 15 years compared to later age • Girls aged below 15 years are recommended to be given 2 doses of vaccination (0 and 6 months). • Girls aged above 15 years are recommended to be given 3 doses of vaccination (0, 1 and 6 months). • For Malaysia, under the MOH National HPV Immunisation Programme, Malaysian girls aged 13 years old are given free vaccination.	

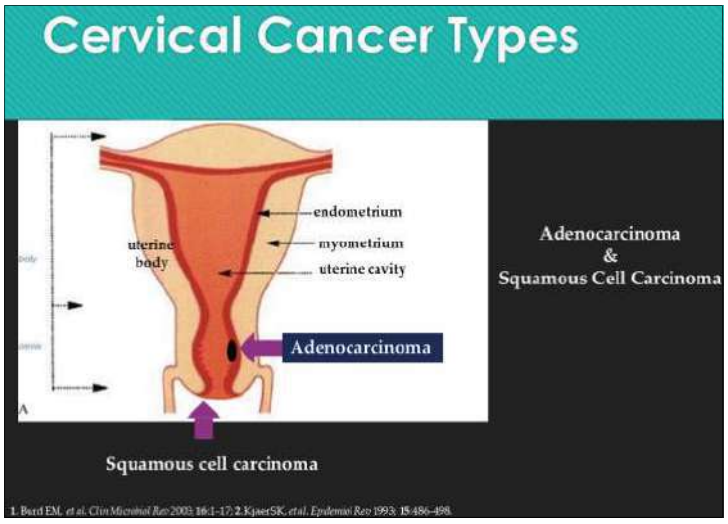
NO.	TOPICS	REMARKS
9.	**MYTHS OF CERVICAL CANCER** 1) Using sanitary pads, panty liners and tampon causes cervical cancer. **FACT:** The wearing is determined by the needs and habits of the individual women. The claim of wearing sanitary pads, panty liners and tampon cause cervical cancer is not true. 2) Only promiscuous women get HPV infection. **FACT:** Any woman who has had sexual intercourse even with a single partner may be exposed to HPV infection. 3) **Regular Pap smear is enough to protect women against cervical cancer.** FACT: A Pap smear is a screening tool. It is not enough to protect women against cervical cancer. 4) **If you are infected with HPV you will probably get cervical cancer.** FACT: HPV infection is very common but cervical cancer is not. Most women are exposed to HPV infection at some point in their life and for most women, the HPV infection will go away on its own without causing any problem. However, in some women, the infection persists over a long period of time and may cause abnormal cell to form which then may develop into cervical cancer. 5) **If a woman gets HPV vaccine she no longer needs to do the Pap smear.** FACT: Girls and women who had received HPV vaccination still need to do Pap smears as recommended.	

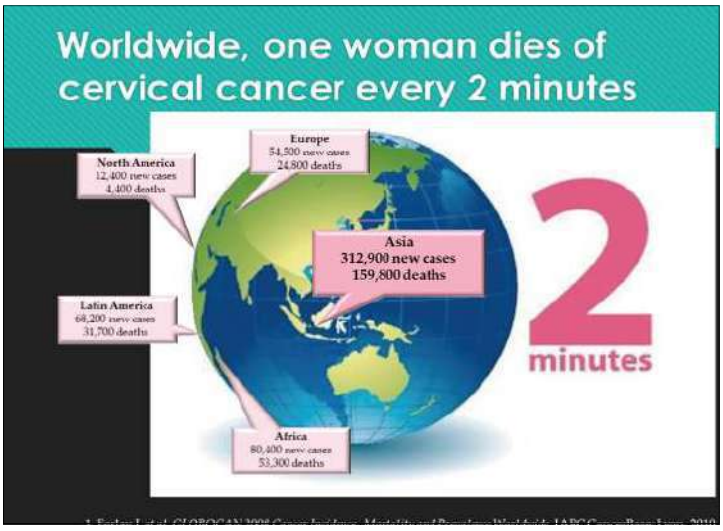
NO.	TOPICS	REMARKS
10.	**REFERRAL PATHWAYS** **<u>Asymptomatic & High Risk Women:</u>** Depending on the Pap smear/HPV DNA result, patient will be managed accordingly. • **For normal result :** educational information and material should be provided and followed-up for repeat Pap smear three yearly if the result of two consecutive year pap smear was normal, or repeat test 5-yearly if HPV DNA test was negative. • **For abnormal result :** patients will be referred immediately to hospital (O&G) for further management. Asymptomatic and High Risk Women:  **Symptomatic women:** Full physical examination and history taking should be conducted, if the findings is **normal**, **Pap smear** will be taken. • If the **Pap smear** result is **normal**, patient should be followed-up accordingly (refer to the flowchart below).	

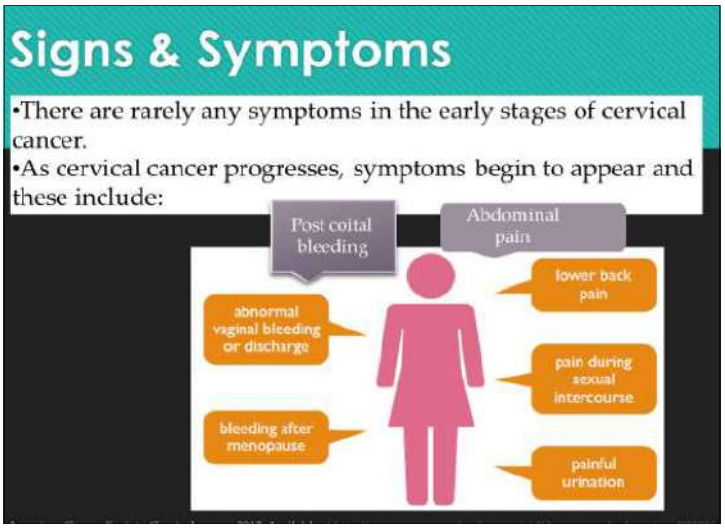
NO.	TOPICS	REMARKS
	• If the **Pap smear** result is **abnormal**, patients should be referred immediately to O&G specialist at the hospital. 	
10.	**PATIENT NAVIGATION FOR ABNORMAL RESULT OF PAP SMEAR** • GP - Counseling to be given to the patients - Refer to O&G (Government & Private) for further management - To notify designated hospital of the referred patients - Refer to NGO for further counseling (e.g support group) if patient refuse for further management (MAKNA, NCSM, Cancer Research Malaysia, etc) • Health Clinics - Counseling to be given to the patients - Refer to O&G for further management - Refer to NGO for counseling (e.g support group) if patient refuse for further management (MAKNA, NCSM, Cancer Research Malaysia, etc)	

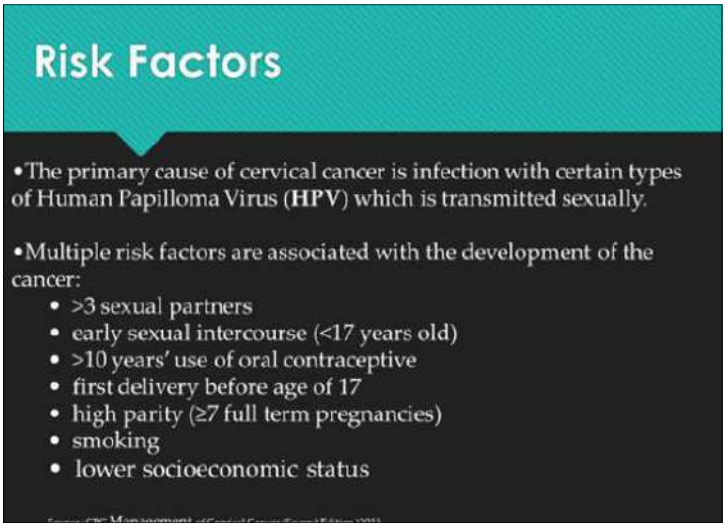
7.3.5 **Power Point Presentation for Cervical Cancer Module**





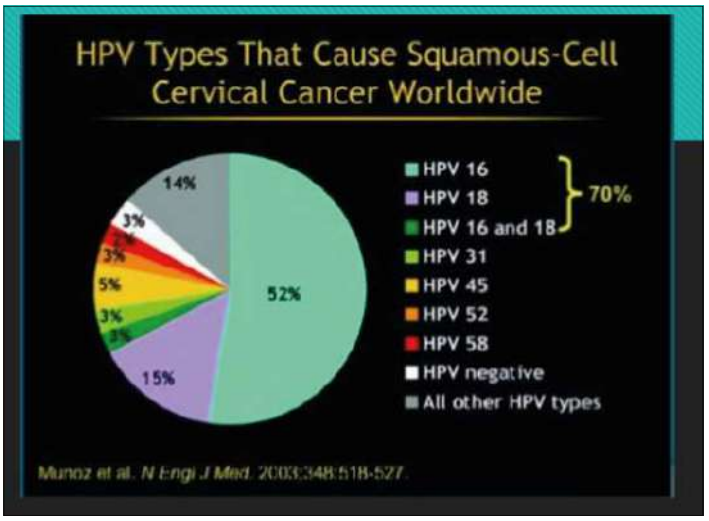






Challenges in Screening/Early Detection

- Poor awareness
- Fear
- Lack of promotion among Health Care Provider and Public
- Poor screening uptake
- Late symptoms detection
- Culture & social barriers
- Logistic limitation



Challenges in Screening/Early Detection

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- Poor screening uptake
- Late symptoms detection
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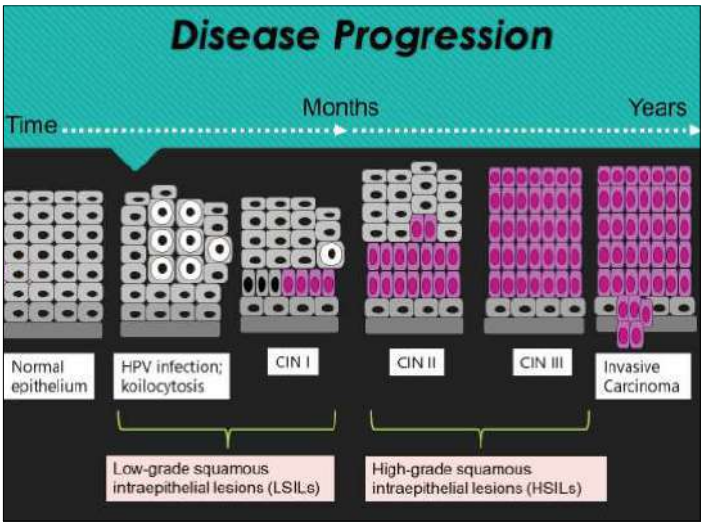
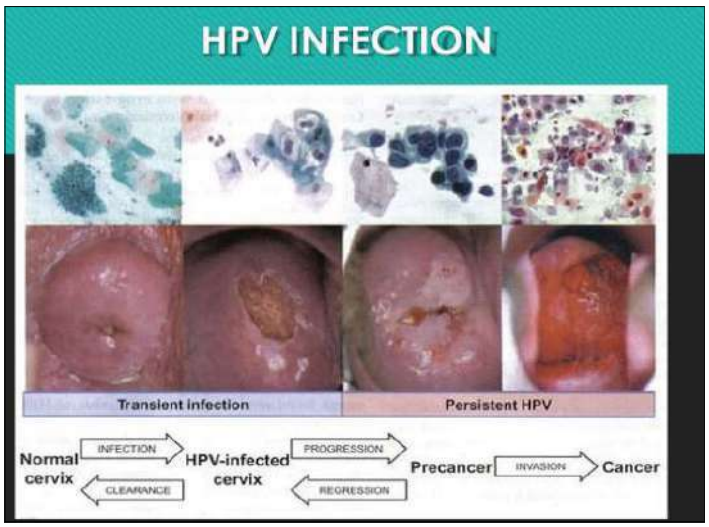
- Logistic limitation





Cervical Cancer Disease Prevention

Primary Prevention:

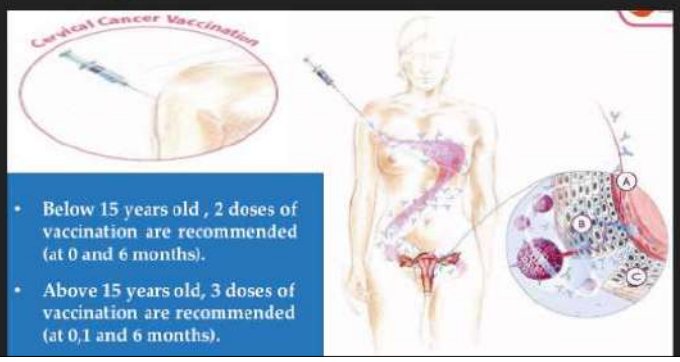
Vaccination is given before infection of HPV occurs. Antibody levels are raised to attack the virus

Secondary Prevention:

Pap smear can detect the changes in the cervix. The earlier it is detected, the better the treatment outcome would be

Primary Prevention: HPV Vaccination

- Vaccination builds up antibodies against HPV
- Antibodies attack the virus, before the virus can attack the *cervix*



- Below 15 years old , 2 doses of vaccination are recommended (at 0 and 6 months).
- Above 15 years old, 3 doses of vaccination are recommended (at 0,1 and 6 months).

Screening

- Screening test are used only in asymptomatic patients.
- Pap Smear and other screening method are used to screen abnormalities

HPV VACCINATION

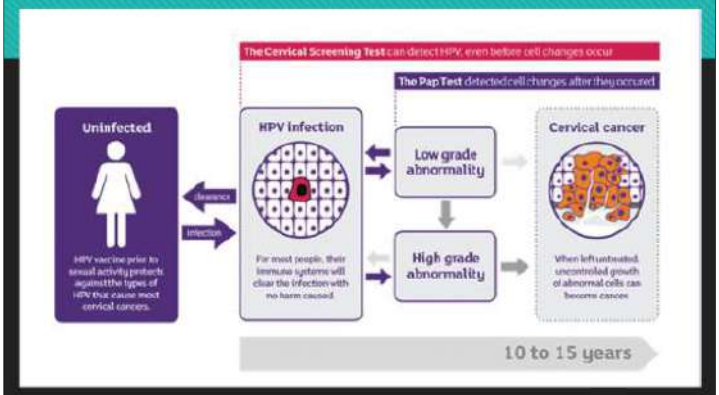
- Target group : 13 years old Malaysian girls are given free vaccination by MOH under National Immunization Program

Cervical Cancer Screening

- Does not prevent HPV from infecting the *cervix*
- Detects any abnormalities in the *cervix* so that early treatment can be given[1]
- The risk of developing cervical cancer is approximately 3-10 times higher in women who are not regularly screened[2]
- Screening is vital but does not detect all pre-cancerous lesions or prevent all cervical cancer [3]

1. Sankaranarayanan R et al. *Int J Gynecol Obstet* 2005; 89 Suppl 2: S4–12.
2. National Cancer Institute. Screening for cervical cancer. 2005.
3. Prendiville W et al. The Health Professionals HPV Handbook. 2004.

Secondary Prevention



National Pap Smear Screening Programme

- Cervical cancer screening using Pap smear was initiated in 1969, which then became a National Programme in 1995
- The main modality used is conventional Pap smear.
- Liquid-based cytology (LBC) was later introduced in 2014

Cervical Cancer Screening - Primary HPV testing

- HPV DNA testing is more effective than cervical cytology in detection of precancerous changes of cervix
- Primary HPV testing was initiated in 2019 at selected clinics in Malaysia

Screening Policy:

- Target group
  - All sexually active women aged **30-49 years**
  - Women less than 30 years and 50-65 years are advised for Pap smear
- Screening interval
  - every 5 years for those who are tested HPV negative
  - every 3 years for those who are tested negative (normal) Pap smear
- Screening Personnel
  - **Self-sampling** by women or by health care professional

*Source: Guidelines for Primary HPV Testing for Cervical Cancer Screening in Malaysia, 2019

Myths of Cervical Cancer – Cont'd

c. **Regular pap smear is enough to protect women against cervical cancer.**

FACT: A Pap smear is a screening tool. It is not enough to protect women against cervical cancer.

Myths of Cervical Cancer

a. **Using sanitary pads, panty liners and tampon causes cervical cancer.**

FACT: The wearing is determined by the needs and habits of the individual women. The claim of wearing sanitary pads, panty liners and tampon cause cervical cancer is not true.

Myths of Cervical Cancer – Cont'd

d. **If you are infected with HPV you will probably get cervical cancer.**

FACT: HPV is very common but cervical cancer is not. Most women will be exposure to HPV at some point in their life and for most women HPV infection will go away on their own without causing any problem. But in some women the infection persists over a long period of time and causes abnormal cell to form which can then develop into cervical cancer.

Myths of Cervical Cancer – Cont'd

b. **Only promiscuous women get HPV infection.**

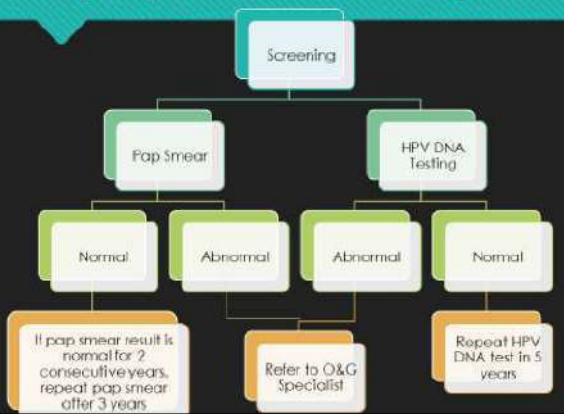
FACT: Any woman who has had sexual intercourse even with a single partner may be exposed to HPV. HPV is very common virus in fact about 8 out of 10 women will have had HPV at some point in time by the age of 50.

Myths of Cervical Cancer – Cont'd

e. **If a woman gets HPV vaccine she no longer needs to do the pap smear.**

FACT: Girls and women who had received HPV vaccination still need to do Pap smears as recommended.

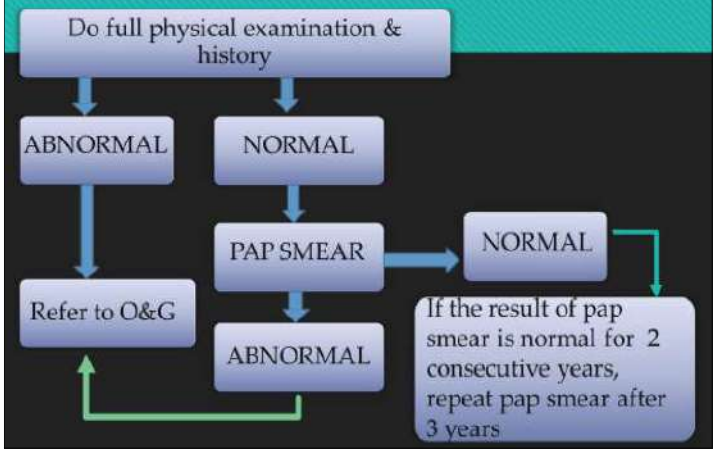
Referral Pathway - Asymptomatic & High Risk



Patient Navigation From KK

- Abnormal result:
  - Counseling to be given to the patients
  - Refer to O&G for further management
  - Refer to NGO for counseling (e.g support group) if patient refuse for further management (MAKNA, NCSM, Cancer Research Malaysia, etc)

Referral Pathway - Symptomatic



THANK YOU

Patient Navigation From GP

- Abnormal result:
  - Counseling to be given to the patients
  - Refer to O&G (Government & Private) for further management
  - To notify designated hospital of the referred patients
  - Refer to NGO for further counseling (e.g support group) if patient refuse for further management (MAKNA, NCSM, Cancer Research Malaysia, etc)

7.4 MODUL 4 : NASOPHARYNGEAL CANCER

7.4.1 Content Summary for Nasopharyngeal Cancer Module

Target Audience • *Healthcare Providers (Doctors and paramedics)* ***Contents of Learning Module*** • *Instructor's Guide with Pre/Post Self-Assessment* • *PowerPoint presentation*	***Goal*** *At the end of this session, participant's knowledge and understanding on risk factors, signs and symptoms of nasopharyngeal cancer will be improved and will have better understanding of the referral pathway.* ***Objective*** *On completion of Module 4, participants will have better knowledge on :* *1. Epidemiology of Nasopharyngeal Cancer* *2. Anatomy of the pharynx* *3. Types of nasopharynx cancer* *4. Signs and symptoms* *5. Risk factors* *6. Challenges in early detection* *7. Referral pathways* *8. Patient navigation* ***Measures of Objective Accomplishment*** *The presenter will administer a pre self-assessment and a post self-assessment to measure participants' knowledge of the module's objectives. The pre self-assessment measures existing knowledge and the post self-assessment measures what was gained through the learning module.*

7.4.2 Content Summary for Nasopharyngeal Cancer Module

No.	Questions	True	False
1.	**Below are statements on *Nasopharyngeal cancer* risk factors. Please circle or underlined the correct answer** a. Diet high in saturated fat b. Tobacco used - People who have ever smoked are at an increased risk of nasopharyngeal cancer. c. Exposure to wood dust through their work, formaldehyde and industrial chemical increases the risk d. Alcohol intake e. Helicobacter pylori infection f. Inherited risk - with close relative getting nasopharyngeal cancer.	T T T T T T	F F F F F F
2.	The incidence in males increased at the age of 25 years old and peaked at the age of 40 years old.	T	F
3.	Nasopharyngeal cancer is a tumour that grows in the cavity behind the nose and palate of the oral cavity.	T	F
4.	A lump at the neck area is a one of the commonest sign of this cancer?	T	F
5.	Which are the symptoms of *Nasopharyngeal cancer*? Please circle or underline the correct answer a. A lump at the neck area b. Unilateral hearing loss c. Tinnitus (pain and ringing in the ear) d. Fluid collection in the ear e. Blocked or stuffy nose - particularly if only blocked on one side f. Numbness of the lower part of the face g. All above		

7.4.3 Pre/Post Self-Assessment for Cervical Cancer Module

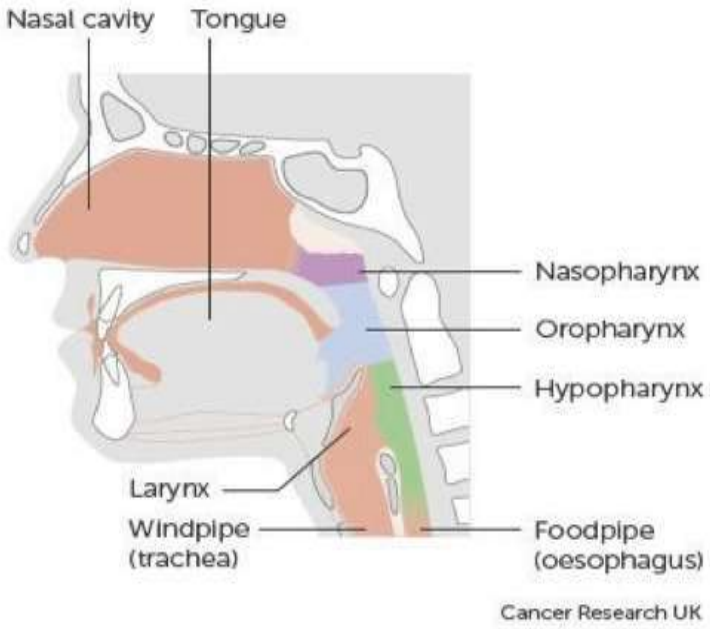
The correct answer to each question, is underlined

No.	Questions	True	False
1.	**Below are statements on *Nasopharyngeal cancer* risk factors. Please circle or underlined the correct answer** a. Diet high in saturated fat b. Tobacco used - People who have ever smoked are at an increased risk of nasopharyngeal cancer. c. Exposure to wood dust through their work, formaldehyde and industrial chemical increases the risk d. Alcohol intake e. Helicobacter pylori infection f. Inherited risk - with close relative getting nasopharyngeal cancer.	T T T T	F F F F
2.	The incidence in males increased at the age of 25 years old and peaked at the age of 40 years old.	T	F
3.	Nasopharyngeal cancer is a tumour that grows in the cavity behind the nose and palate of the oral cavity.	T	F
4.	A lump at the neck area is a one of the commonest sign of this cancer?	T	F
5.	Which are the symptoms of *Nasopharyngeal cancer?* Please circle or underline the correct answer a. A lump at the neck area b. Unilateral hearing loss c. Tinnitus (pain and ringing in the ear) d. Fluid collection in the ear e. Blocked or stuffy nose – particularly if only blocked on one side f. Numbness of the lower part of the face g. All above		

7.4.4 Pre/Post Self-Assessment for Cervical Cancer Module

NO.	TOPICS	REMARKS
1.	**EPIDEMIOLOGY OF NASOPHARYNGEAL CANCER** According to the Malaysia National Cancer Registry (MNCR) 2012-2016 Report, nasopharyngeal cancer (NPC) is the fifth most frequent cancer in Malaysian population. It is more common is males (73.1%) compared to females (26.9%). Amongst males, NPC is the fifth most frequent cancer with Age Standardised Incidence Rate (ASR) of 5.2 per 100,000 population. The incidence in males increased at the age of 25 years old and peaked at the age of 65 years old. The ASR for females is 1.9 per 100,000 population. It is noted that the incidence is higher among Chinese compared to the other major ethnic groups in the country. Among males, the ASR for NPC in was also higher in Chinese population (8.6/100,000 population) compared to in Malay 2.7/100,000 population and in Indian 0.6 /100,000 population.	

NO.	TOPICS	REMARKS
2.	**ANATOMY OF THE PHARYNX**	



Pharynx are divided into 3 parts:

- **Oropharynx**
  The part of the throat at the back of the mouth.

- **Hypopharynx**
  It sits behind and on either side of the larynx (voice box).

- **Nasopharynx**
  It is placed at the base of the skull to the upper surface of the soft palate.

NO.	TOPICS	REMARKS
3.	**TYPES OF NASOPHARYNX CANCER** Several layers of tissues make up the nasopharynx. Each layer contains many different types of cells. The common types of NPC are : **i. Squamous Cell Carcinoma** Most of the NPC are squamous cell carcinomas. Squamous cells are the flat, skin like cells that line the inside of the mouth, nose, larynx and throat. There are different types of squamous cell in NPC. The 3 main types are : • Keratinising squamous cell carcinoma (type 1) • Non keratinising squamous cell carcinoma (type 2) • Undifferentiated carcinomas (type 3) **ii. Adenocarcinoma and Adenoid cystic carcinoma** Adenocarcinoma and adenoid cystic carcinomas can develop in the minor salivary glands within the nasopharynx.	
4.	**SIGNS AND SYMPTOMS** Patients with NPC may or may not present with any signs and symptoms. A complete history and physical examination is important to help come to the diagnosis.	

NO.	TOPICS	REMARKS
	The most common symptoms are: i. A lump at the neck area (most common) ii. Unilateral hearing loss iii. Tinnitus (pain and ringing in the ear) iv. Fluid collection in the ear v. Blocked or stuffy nose - particularly if unilateral vi. Numbness of the lower part of the face Other symptoms includes: i. Frequent nose bleeds ii. Frequent headaches iii. Blurred or double vision iv. Unexplained weight lost v. Fatigue vi. Dysphagia (difficulty in swallowing) vii. Changes in voice – such as hoarseness	

NO.	TOPICS	REMARKS
5.	**RISK FACTORS** **i. Squamous Cell Carcinoma** Most of the NPC are squamous cell carcinomas. Squamous cells are the flat, skin like cells that line the inside of the mouth, nose, larynx and throat. There are different types of squamous cell in NPC. The 3 main types are : i. Family history ii. Infection ▪ Increased risk in those tested positive for Epstein Barr virus (EBV) iii. Lifestyle and environment • Diet - Very high in salt cured meats and fish or pickled foods • Tobacco smoking - the risk rise by 1-2% with each pack-year of smoking • Alcohol • Chemicals - occupational solvent such as Formaldehyde, wood cooking fires	
6.	**CHALLENGES IN EARLY DETECTION** Other symptoms includes: • There is no specific screening programme available • Failure to recognize common presenting symptoms of NPC • Patient comes late to seek advice • Lack of awareness about NPC among the publics	

NO.	TOPICS	REMARKS
7.	**REFERRAL PATHWAY** All patients with neck swelling and others NPC symptoms should be referred to ENT for direct examination and for further management **Identify High Risk Patients / Symptomatic Patients** ▼ **Complete History Taking and Physical Examinations** ▼ **Refer ENT** ▼ **Give Follow up To Review Outcome**	

NO.	TOPICS	REMARKS
8.	**PATIENT NAVIGATION** • **GP** - To identify the risks, signs and symptoms, explain that they need further evaluation and referral to hospital. - Best to alert the referring hospital (ENT) about the patient's particulars. - Give education material to the patients - Advice and counsel the patient accordingly - For further counseling and support, patient should be referred to nearby NGO, if any (eg. MAKNA, NCSM, Cancer Research Malaysia, etc) • **Health Clinics** - To identify the risk, signs and symptoms, explain that they need further evaluation and refer to hospital (ENT clinic) - Education material should be passed to the patients - Advice and counsel the patient accordingly - Health Clinics to follow-up on further management - For further counseling and support (such as support group), patient should be referred to nearby NGO (eg. MAKNA, NCSM, Cancer Research Malaysia,etc).	

7.4.5 Power Point Presentation for Cervical Cancer Module

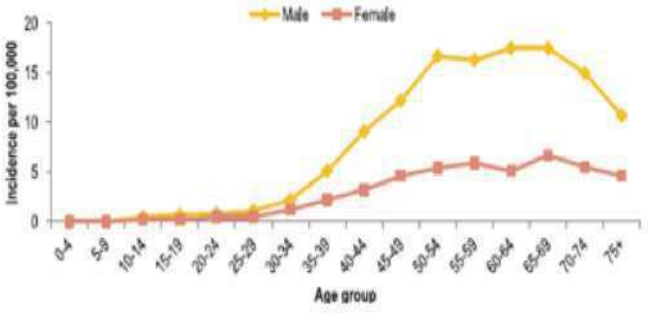
NASOPHARYNGEAL CANCER

EARLY DETECTION OF COMMON CANCERS AND REFERRAL PATHWAYS:
Training Module for Health Care Provider

MINISTRY OF HEALTH MALAYSIA

EPIDEMIOLOGY

Age-specific incidence rate by sex, Malaysia, 2012-2016



EPIDEMIOLOGY

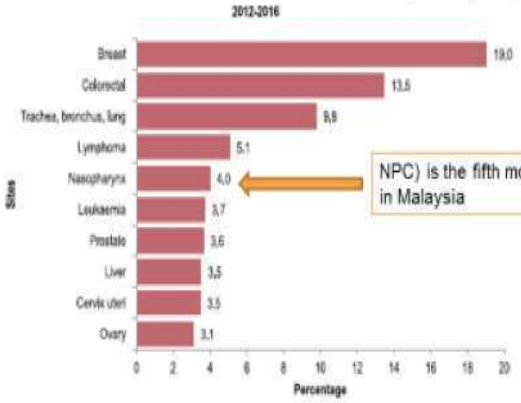
- Globally, nasopharyngeal cancer (NPC) is fairly rare.
- This cancer is, however, much more common in certain parts of Asia and North Africa, particularly in southern China.
- Other countries: Singapore, Vietnam, Malaysia, and the Philippines. It is also fairly common in Northwest Canada and Greenland.

EPIDEMIOLOGY

- The incidence is higher among Chinese compared to the other major ethnic groups in the country
- The incidence rate for NPC among males in Malaysia were higher in Chinese population
  - i.e 8.6 per 100,000 population compared to Malay 2.7 per 100,000 population and Indian 0.6 per 100,000 population.

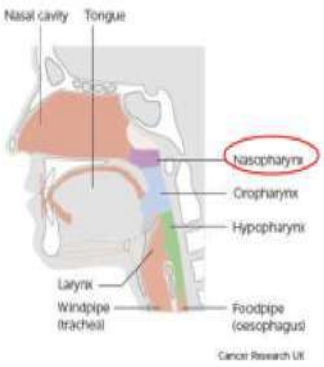
EPIDEMIOLOGY

Ten most common cancers, all residents, Malaysia, 2012-2016



NPC) is the fifth most frequent cancer in Malaysia

ANATOMY

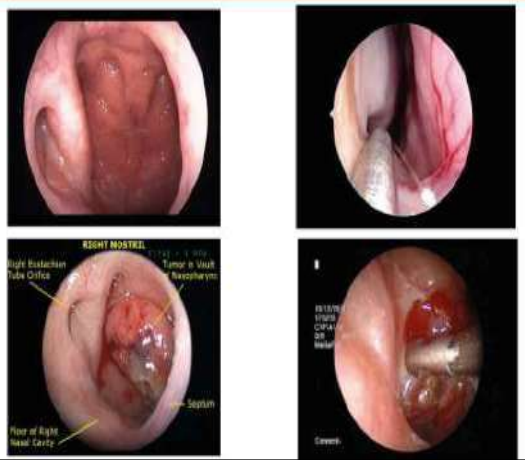


Pharynx are divided into 3 parts:

- Nasopharynx
- Oropharynx
- Hypopharynx

The nasopharynx located at the base of the skull to the upper surface of the soft palate.

NOSE ENDOSCOPY



SIGNS & SYMPTOMS

Commonest symptoms are:

- A lump at the neck area (most common)
- Unilateral hearing loss
- Tinnitus (pain and ringing in the ear)
- Fluid collection in the ear
- Blocked or stuffy nose – particularly if only blocked on one side
- Numbness of the lower part of the face

TYPES OF NPC

There are 3 subtypes of NPC recognised in the WHO 2005 classification:

1. Keratinizing squamous cell carcinoma (SCC)
   - Commonest

2. Non- keratinizing squamous cell carcinoma
   a. Differentiated type
   b. Undifferentiated type
3. Basaloid squamous cell carcinoma - least common

SIGNS & SYMPTOMS

Other symptoms include:

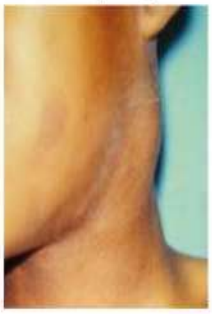
- Frequent headaches
- Blurred or double vision
- Unexplained weight loss
- Fatigue
- Dysphagia
- Changes in voice – such as hoarseness
- Frequent nose bleeds

RISK FACTORS

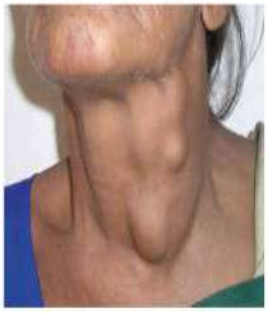
- Family history
- Infection
  - Increased risk in those tested positive for Epstein Barr virus (EBV)
- Lifestyle and environment
  - Diet - Very high in salt cured meats and fish or pickled foods
  - Tobacco smoking
  - Alcohol
  - Chemicals - occupational solvent ie. Formaldehyde, wood cooking fires

LUMP AT NECK

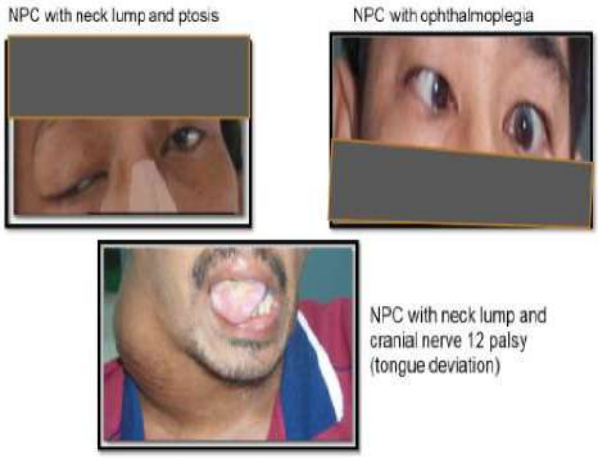
Early stage



Late stage



Courtesy to Dr Vijaya Prakash Rao, ENT Specialist, Hospital Melaka



PATIENT NAVIGATION

General Practitioner (GP)

- To identify the symptoms, explain that they need further evaluation and refer the patients to hospital.
- Best to alert the referring hospital (eg. ENT clinic) on the patient particulars.
- Give education material to the patients
- For counseling and support, patient should be referred to nearby NGO, if any (eg. MAKNA, NCSM, Cancer Research Malaysia, etc)

CHALLENGES IN EARLY DETECTION

- There is no specific screening programme available
  - Screening of NPC in general population could not be recommended due to insufficient evidence for its effectiveness and safety
- **Failure to recognize common presenting symptoms of NPC**
- **Patient comes late to seek advice**
- **Lack of awareness on NPC among the publics**

PATIENT NAVIGATION

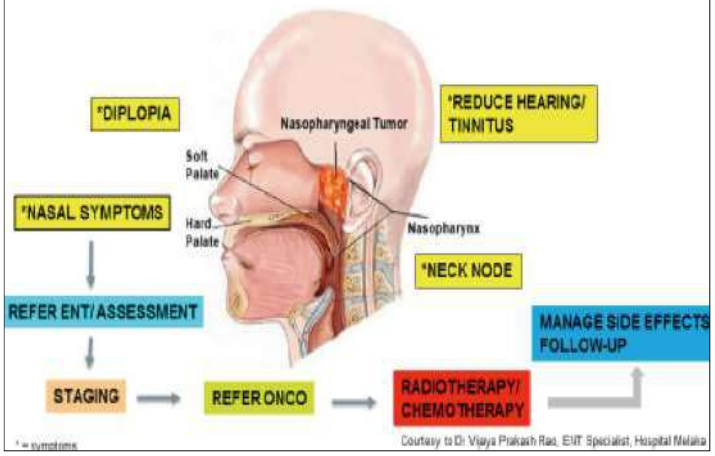
Health Clinics

- To identify the symptoms, explain that they need further evaluation and refer to FMS/ENT clinic
- Give education material to the patients
- Health clinics to do follow-up on the patient's further management after being referred to the hospital
- For counseling and support, patient should be referred to nearby NGO (eg. MAKNA, NCSM, Cancer Research Malaysia, etc)

REFERRAL PATHWAY

- All patients with neck swelling and other NPC symptoms should be referred to ENT department for direct examination and further management.

TAKE HOME MESSAGE



THANK YOU

7.5 MODUL 5 : LUNG CANCER

7.5.1 Content Summary for Lung Cancer Module

Target Audience • *Healthcare Providers* ***Contents of Learning Module*** • *Instructor's Guide with Pre/Post Self-Assessment* • *PowerPoint presentation*	***Goal*** *In this session, participants will gain an understanding on lung cancer, risk factors and signs and symptoms of lung cancer* ***Objective*** *At the completion of Learning Module 5, participants will have better understanding on :* 1. *Epidemiology of lung cancer* 2. *Anatomy of the lung* 3. *Types of lung cancer* 4. *Signs and symptoms of lung cancer* 5. *Risk factors of lung cancer* 6. *Myth on lung cancer* 7. *Challenges to early detection* 8. *Screening tools* 9. *Referral pathways* 10. *Patient Navigation* ***Measures of Objective Accomplishment*** *The presenter will administer a pre self-assessment and a post self-assessment to measure participants' knowledge of the module's objectives. The pre self-assessment measures existing knowledge and the post self-assessment measures what was gained through the learning module.*

7.5.2 Pre/Post Self-Assessment for Lung Cancer Awareness Module

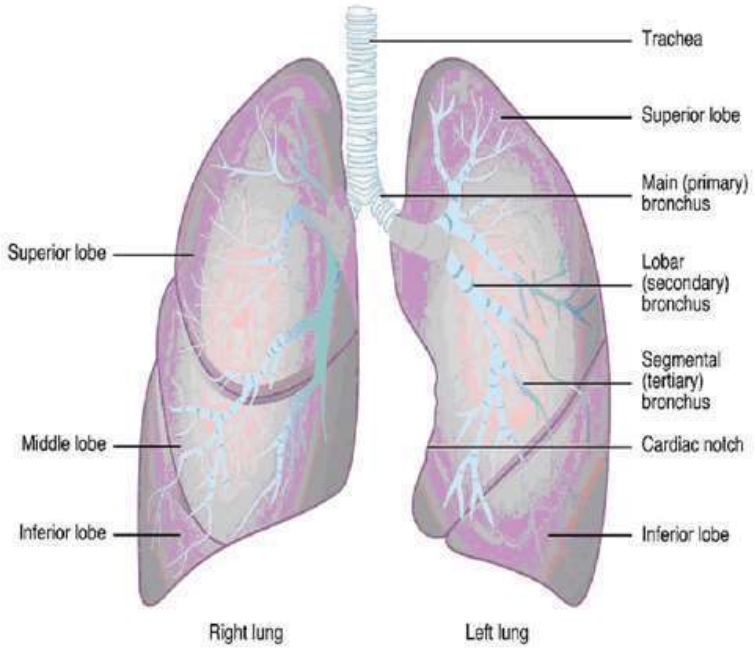
No.	Questions	True	False
1.	More than 60% of lung cancer is detected late	T	F
2.	Adenocarcinoma is the most common type of lung cancer in both men and women.	T	F
3.	The age of peak incidence of lung cancer in Malaysia is the 5th decade of life.	T	F
4.	Signs and Symptoms of lung cancer: a) Coughing up blood or rust-coloured sputum b) Infections such as bronchitis and pneumonia c) Jaundice d) Vomiting e) Chest pain	 T T T T T	 F F F F F
5.	Chest X ray, generally has been found effective in reducing mortality from lung cancer	T	F
6.	Risks factors for lung cancer: a) History of chronic obstructive airway disease b) Exposure to second hand smoke c) History of Asthma d) Silicosis	 T T T T	 F F F F

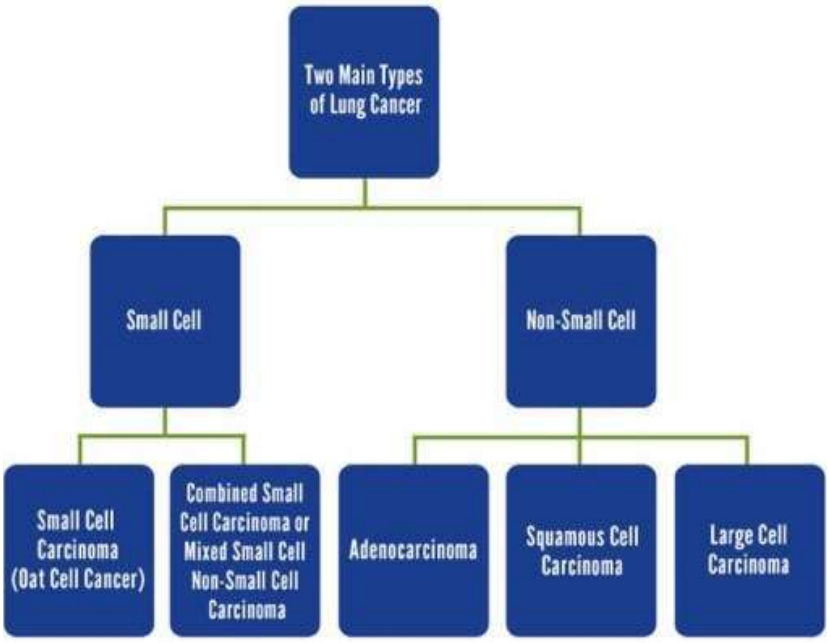
7.5.3 Pre/Post Self-Assessment Key Answer for Lung Cancer Module

The correct answer to each question is underlined

No.	Questions	True	False
1.	More than 60% of lung cancer is detected late	T	F
2.	Adenocarcinoma is the most common type of lung cancer in both men and women.	T	F
3.	The age of peak incidence of lung cancer in Malaysia is the 5th decade of life.	T	F
4.	Signs and Symptoms of lung cancer: a) Coughing up blood or rust-coloured sputum b) Infections such as bronchitis and pneumonia c) Jaundice d) Vomiting e) Chest pain	 T T T T T	 F F F F F
5.	Chest X ray, generally has been found effective in reducing mortality from lung cancer	T	F
6.	Risks factors for lung cancer: a) History of chronic obstructive airway disease b) Exposure to second hand smoke c) History of Asthma d) Silicosis	 T T T T	 F F F F

7.5.4 Lung Cancer : The Module

NO.	TOPICS	REMARKS
1.	**EPIDEMIOLOGY OF LUNG CANCER** **i. Squamous Cell Carcinoma** In Malaysia, lung cancer is the second most common cancer among males and third most common cancer in the general population. The Age Standardised Incidence Rate (ASR) for male was 13.2 per 100,000 population and 5.9 per 100,000 population for female. The incidence was more than 2 folds higher among males when compared to females. The ASR among Chinese was higher (16.0 per 100,000) compared to Malays (12.5 per 100,000) and Indians (5.7 per 100,000). The age of peak incidence of lung cancer in Malaysia is the 7th decade of life. Most of the lung cancer was detected late with more than 70% of the cases detected at stage IV.	Source : Malaysia National Cancer Registry Report (MNCR) 2012-2016
2.		

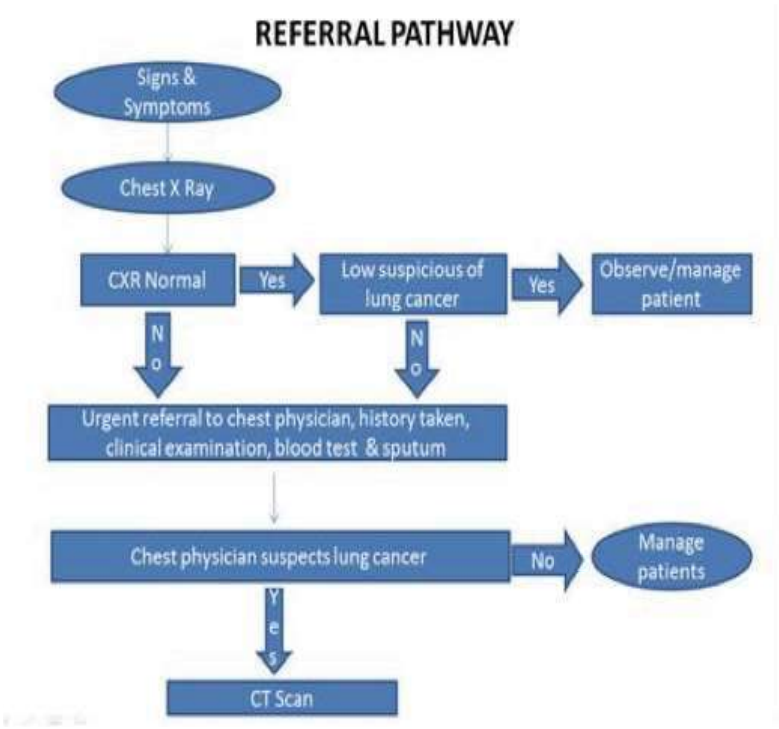
NO.	TOPICS	REMARKS
3.	**TYPES OF LUNG CANCER**  In Malaysia, lung cancer is the second most common cancer among males and third most common cancer in the general population.	
4.	**SIGNS AND SYMPTOMS** Patients with lung cancer commonly present with one of the symptoms listed below but some remain asymptomatic until it has spread. a. Prolonged, unresolved cough b. Coughing up blood or rust-coloured sputum c. Chest pain that is often worse with deep breathing, coughing or laughing d. Hoarseness e. Weight loss f. Loss of appetite g. Shortness of breath h. Feeling tired or weak i. Wheezing j. Chest infections that keep coming back	

NO.	TOPICS	REMARKS
	Late symptoms a. Bone pain (pain in the back or hips) b. Nervous system changes (headaches, weakness or numbness of an arm or leg, dizziness, balance problems or seizures) from cancer spread to brain to spinal cord. c. Yellowing to the skin and eyes (jaundice) from cancer spread to the liver d. Lumps near the surface of the body, due to cancer spreading to the skin or to lymph nodes (collections of immune system cells) such as those in the neck or above the collarbone.	
5.	**RISK FACTORS** Patients with lung cancer commonly present 1. Lifestyle factors • Smoking 2. Environmental factors • Exposure to second hand smoke (passive smoking) • Exposure to occupational hazard (e.g. asbestos, diesel exhaust) • Exposure to Radon • Air pollution • Silicosis 3. Personal factors • Age • History of chronic obstructive airway disease • Family history of lung cancers	

NO.	TOPICS	REMARKS
6.	**MYTHS ON LUNG CANCER** **1. Myth: It's Too Late if You've Smoked for Years** **Fact:** Quitting at any time has its benefits. Blood circulation and gas exchange will improve almost immediately. Lung cancer risk will gradually drop over time. Ten years after kicking the habit, the odds of getting the disease will be half of what it is now. **2. Myth: Low-Tar or 'Light' Cigarettes Are Safer Than Regular** **Fact:** They are just as dangerous. Beware of menthol: Some research suggests that menthol cigarettes may be more dangerous and harder to quit. Their cooling sensation prompts some people to inhale more deeply. **3. Myth: Pipes and Cigars Are Not a Problem** **Fact:** Just like cigarettes, they will put you at risk for cancers of the mouth, throat, esophagus, and lungs. Cigar smoking, in particular, makes you much more likely to get heart disease and lung disease. **4. Myth: Smoking Is the Only Risk** **Fact:** It's the most important risk factor, but there are others. For example, cause of lung cancer is an odorless radioactive gas called radon.	

NO.	TOPICS	REMARKS
	5. Myth: Talcum Powder Is a Cause **Fact:** Research showed no clear link between lung cancer and accidentally breathing in talcum powder. People who work with other chemicals, including asbestos and vinyl chloride, are more likely to get the disease. **6. Myth: If You Have Lung Cancer, Quitting Is Pointless** **Fact:** If you stop, your treatment may work better and your side effects could be milder. And if you need surgery, ex-smokers tend to heal better than smokers. In some cases, quitting makes a second cancer less likely to start.	
7.	**SCREENING** **a. Helical Low-Dose Computed Tomography** Screening test for lung cancer using helical low-dose computed tomography (also called low-dose CT or LDCT) is recommended by CDC Atlanta for persons who are at high risk for lung cancer because of their age and cigarette smoking history. • Health Technology Assessment done by the MOH found that LDCT for lung cancer screening is not cost effective. • Lung cancer screening using LDCT is not available at the MOH facilities. • Certain private hospitals do provide LDCT for lung cancer screening	

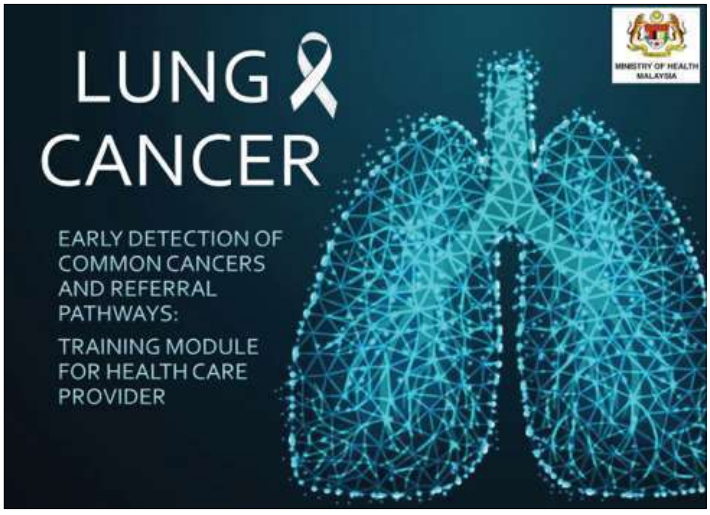
NO.	TOPICS	REMARKS
	b. Other tests • Lung cancer screening using plain chest x-rays (CXR) and sputum cytology have not found to show benefit and generally not been found effective in reducing mortality from lung cancer. • Breath tests and blood test to detect for lung cancer have explored but none thus far have been clinically validated and useful to be applied in screening.	
8.	**CHALLENGES IN EARLY DETECTION** **A. Patient's factor** • Ignorance - of regular health medical checkup, think it is optional - of the sign & symptoms, change in voice, persistent fever & cough • Fear of knowing the disease **B. Screening test factor** - Not yet applicable worldwide (WHO) • Lead time bias • Length time bias • Over-diagnosis bias	

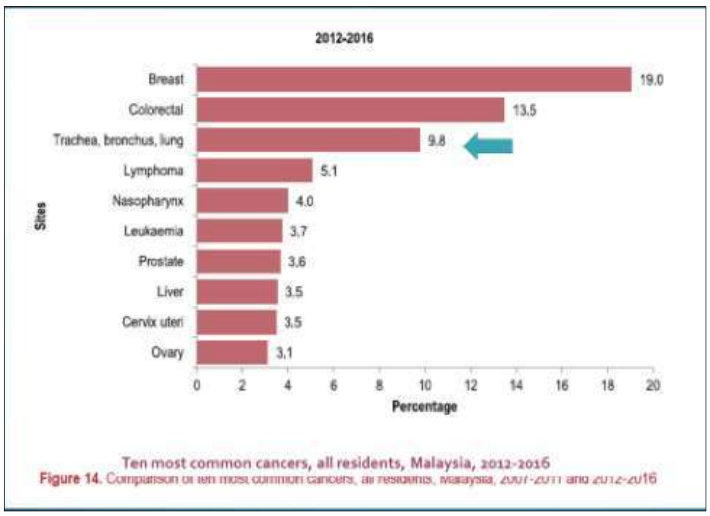
NO.	TOPICS	REMARKS
	C. Nature of the disease factor • Lung cancer typically doesn't cause signs and symptoms in its earliest stages. It typically occurs only when the disease is advanced. Only a third are detected early enough at operable stage and nearly half have progressed to advanced stage at the time of diagnosis. **D. Defining high-risk group factor** • At present, 50% of people who develop lung cancer are former smokers, and 15% have never smoked. • Lung cancer may also occur in young adults, and is actually increasing in younger people, especially young, never-smoking women.	
9.		

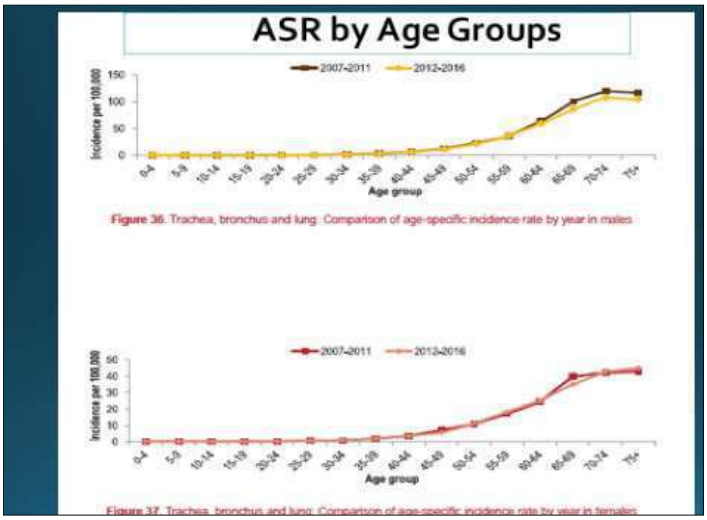
NO.	TOPICS	REMARKS

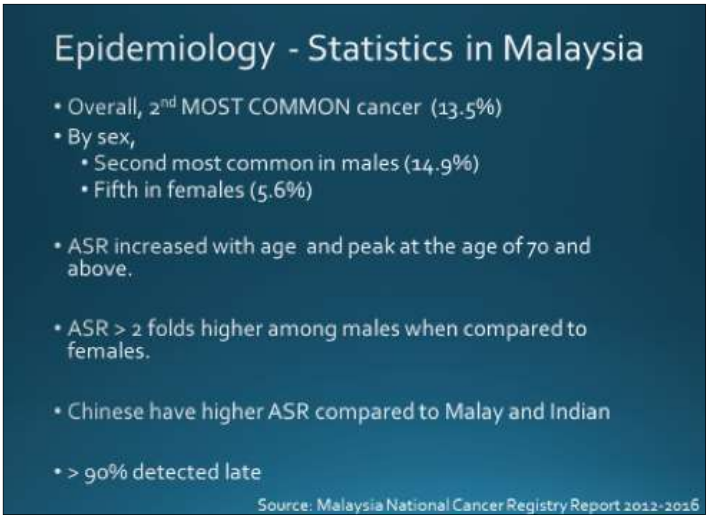
10.	**PATIENT NAVIGATION FOR ABNORMAL RESULT OF CHEST X RAY**
	
	• **GP**
	
	- To identify the symptoms, explain that they need further evaluation
	- Refer the patient to hospital (Chest Clinic / MOPD)
	- Best to alert the referring hospital about the patient particulars
	- Give education material to the patients
	- For further counseling and social support, patient should be referred to nearby NGO, if any (eg. MAKNA, NCSM, Cancer Research Malaysia, etc)
	
	• **Health Clinics**
	
	- To identify the symptoms, explain that they need further evaluation and refer to MOPD/Chest clinic
	- Give education material to the patients
	- Health clinics to do follow-up on the patient's further management after being referred to the hospital
	- For counseling and social support, patient should be referred to nearby NGO (eg. MAKNA, NCSM, Cancer Research Malaysia, etc)
	
	• **Nurse navigator's role**
	
	- Act as liaison between patient & physician
	- Educates patient on:
	  • Smoking cessation
	  • Important of early detection
	  • Further workup or diagnosis
	  • Treatment option	

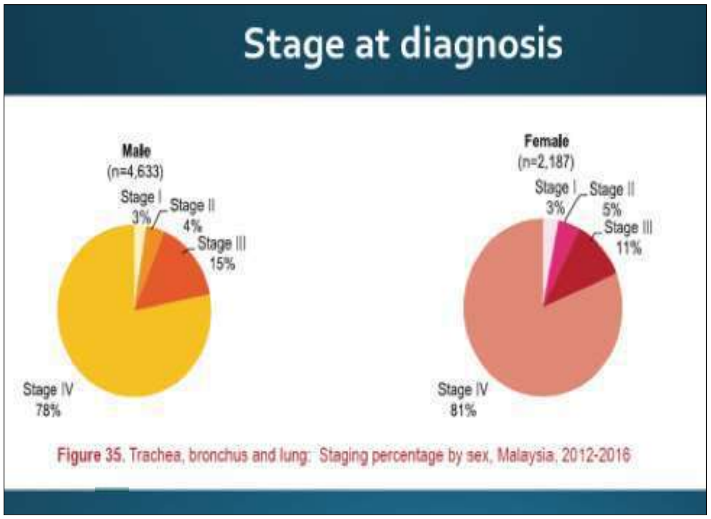
7.5.5 **Power Point Presentation for Cervical Cancer Module**



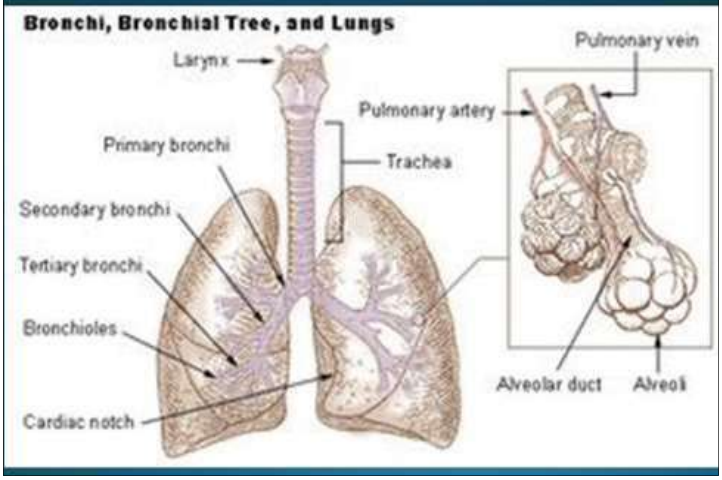








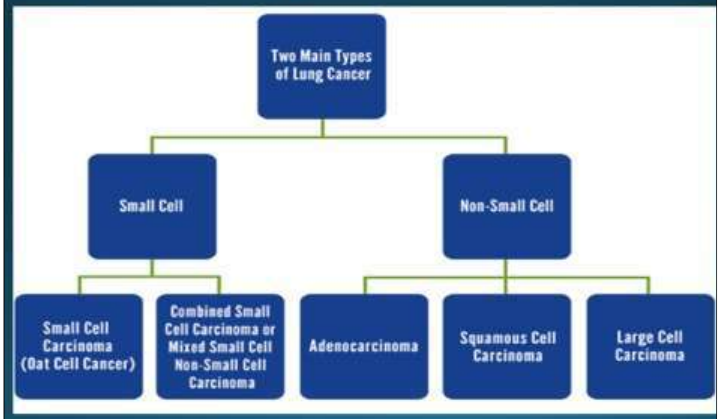
Anatomy of the lungs



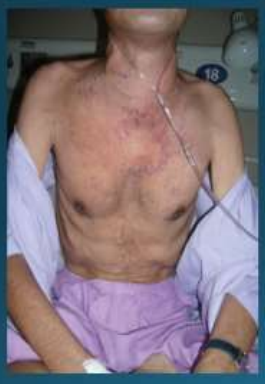
Late symptoms

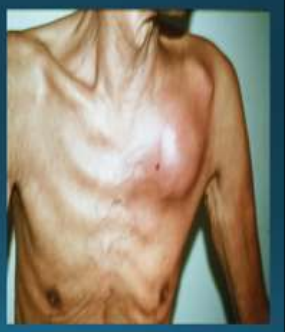
- Bone pain (pain in the back or hips)
- Yellowing to the skin and eyes (jaundice) from cancer spread to the liver
- Nervous system changes (due to cancer spread to brain to spinal cord - headaches, weakness or numbness of an arm or leg, dizziness, balance problems or seizures
- Lumps near the surface of the body (due to cancer spreading to the skin or to lymph nodes) such as those in the neck or above the collarbone

Types of Lung Cancer



Late Symptoms of Lung Cancer





Sign & Symptoms of Lung Cancer

- Cough that does not go away or gets worse
- Shortness of breath
- Wheezing
- Hoarseness
- Weight loss
- Loss of appetite

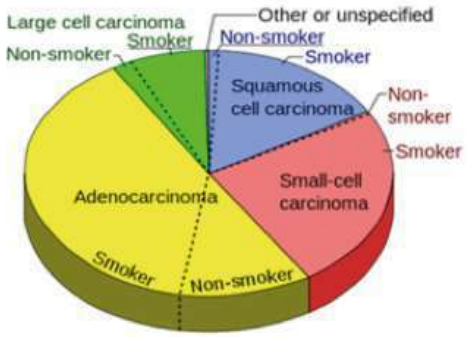
Sign & Symptoms

- Chest pain that is often worse with deep breathing, coughing or laughing
- Feeling tired or weak
- Coughing up blood or rust-colored sputum
- Chest infections that keep coming back

Risk Factors

1. Lifestyle factors
   - Smoking
2. Environmental factors
   - Exposure to second hand smoke (passive smoking)
   - Exposure to occupational hazard (e.g. asbestos, diesel exhaust)
   - Exposure to Radon
   - Air pollution
   - Silicosis
3. Personal factors
   - Age
   - History of chronic obstructive airway disease
   - Family history of lung cancers

Types of lung cancer and relation to smoking



Diagnosis of Lung cancer

- Local symptoms caused by the tumour
- Systemic effects of the tumour
- Abnormal CXR/CT scan

Myths on Lung Cancer

- 1. Myth: It's Too Late if You've Smoked for Years
  → Fact: Quitting has almost-immediate benefits
- 2. Myth: Low-Tar or 'Light' Cigarettes Are Safer Than Regular
  → Fact: They are just as dangerous
- 3. Myth: Pipes and Cigars Are Not a Problem
  → Fact: Just like cigarettes, they will put you at risk for cancers of the mouth, throat, esophagus and lungs.

Lung Cancer Screening Tests

1. **Helical Low-dose Computed Tomography (LDCT)**

- ❖ Health Technology Assessment done by the MOH found that LDCT for lung cancer screening is not cost effective
- ❖ Certain private hospitals do provide LDCT for lung cancer screening

Myths on Lung Cancer

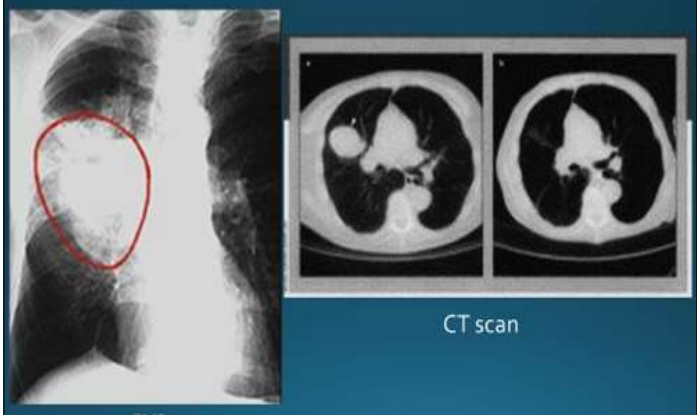
- 4. Myth: Smoking Is the Only Risk
  → Fact: It is the most important risk factor, but there are others. For example, cause of lung cancers is an odorless radioactive gas called radon.
- 5. Myth: Talcum Powder Is a Cause
  → Fact: Research showed no clear link between lung cancer and accidentally breathing in talcum powder.
- 6. Myth: If You Have Lung Cancer, Quitting Is Pointless
  → Fact: If you stop, your treatment may work better and your side effects could be milder.

Lung Cancer Screening Tests

2. **Other tests**

- ❖ Lung cancer screening programs that utilize plain chest x-rays (CXR) and sputum cytology have not found to show benefit and generally not been found effective in reducing mortality from lung cancer.
- ❖ Breath tests and blood test to detect for lung cancer have explored but none thus far have been clinically validated and useful to be applied in screening

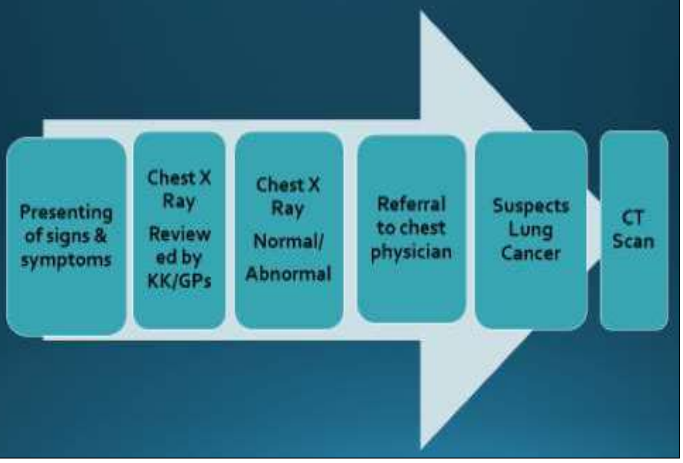
Abnormal Findings on Imaging



CXR

CT scan

Referral Pathway



Challenges on Early Detection

A) Patient's factor

- Ignorance of ,
  - regular health medical check up
    - think it is optional
  - sign & symptoms, change in voice, persistent fever & cough
- Fear of knowing the disease

B) Other factor

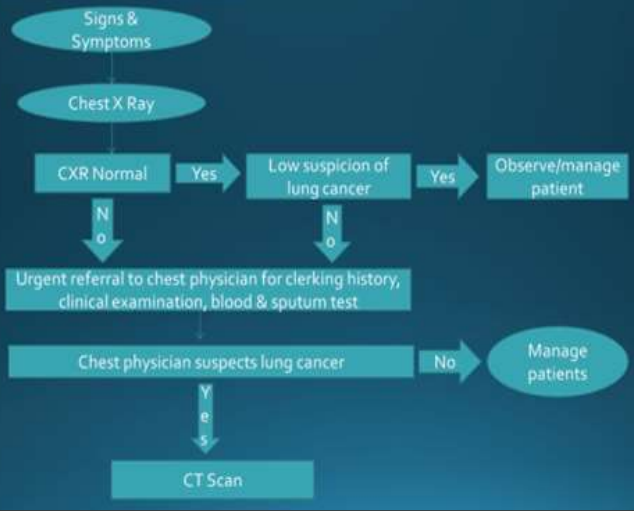
- Lung cancer typically does not cause signs and symptoms in its earliest stages.
- It typically occur only when the disease is advanced.
- Only a third are detected early enough at operable stage and nearly half have progressed to advanced stage at the time of diagnosis

Patient Navigation

GP/Health Clinics

- Identify the symptoms and console the patients
- Refer to Chest Clinic in hospital
- Notify the hospital about the patient particulars
- Refer to nearby NGO for social support
- Do follow-up with hospitals to find out the confirmed diagnosis

REFERRAL PATHWAY



THANK YOU

7.6 MODUL 6 : ORAL CANCER

7.6.1 **Content Summary for Oral Cancer Module**

Target Audience • *Healthcare Providers* ***Contents of Learning Module*** • *Instructor's Guide with Pre/ Post Self-Assessment* • *PowerPoint presentation*	***Goal*** *In this session, participants will gain an understanding on oral cancer, risk factors and signs and symptoms.* ***Objective*** *On completion of Module 6, participants will understand::* *1) Epidemiology of oral cancer* *2) Signs and symptoms of oral cancer* *3) Risk factors/contributing factors of oral cancer* *4) Challenges to early detection of oral cancer* *5) Treatment* *6) Referral pathways* *7) Patient Navigation* ***Measures of Objective Accomplishment*** *The presenter will administer a pre self-assessment and a post self-assessment to measure participants' knowledge of the module's objectives. The pre self-assessment measures existing knowledge and the post self-assessment measures what was gained through the learning module.*

7.6.2 **Content Summary for Oral Cancer Module**

No.	Questions	True	False
1.	**True or false. What are risk factors for oral cancer?**		
	a. Betel quid/bidi chewing	T	F
	b. Smoking	T	F
	c. Tobacco chewing	T	F
	d. Excessive alcohol consumption	T	F
	e. Hot food & beverages consumption	T	F
	f. Spicy food consumption	T	F
	g. Family history of mouth cancer	T	F
	h. HPV infection	T	F
	i. Excessive sun exposure	T	F
	j. Poor fitting dentures	T	F
2.	**True or False. Which are the symptoms of oral cancer?**		
	a. White/red patches in the mouth	T	F
	b. Ulcers that don't heal for more than 2 weeks	T	F
	c. Swelling or lumps in the mouth, face and neck	T	F
	d. Difficulty in chewing or moving jaw or tongue	T	F
	e. Problems or pain when swallowing	T	F
	f. Bleeding gums	T	F

7.6.3 **Content Summary for Oral Cancer Module**

The correct answer to each question, is underlined

No.	Questions	True	False
1.	**True or false. What are risk factors for oral cancer?**		
	a. Betel quid/bidi chewing	T	F
	b. Smoking	T	F
	c. Tobacco chewing	T	F
	d. Excessive alcohol consumption	T	F
	e. Hot food & beverages consumption	T	F
	f. Spicy food consumption	T	F
	g. Family history of mouth cancer	T	F
	h. HPV infection	T	F
	i. Excessive sun exposure	T	F
	j. Poor fitting dentures	T	F
2.	**True or False. Which are the symptoms of oral cancer?**		
	a. White/red patches in the mouth	T	F
	b. Ulcers that don't heal for more than 2 weeks	T	F
	c. Swelling or lumps in the mouth, face and neck	T	F
	d. Difficulty in chewing or moving jaw or tongue	T	F
	e. Problems or pain when swallowing	T	F
	f. Bleeding gums	T	F

7.6.4 Oral Cancer : The Module

NO.	TOPICS	REMARKS
1.	**Epidemiology of Oral Cancer** Oral cancer is a part of head and neck cancer. Most oral cancers begin in the tongue and in the floor of the mouth. Globally, oral cancer is the 16th most common cancer (Globocan 2018) According to the Malaysia National Cancer Registry (MNCR) 2012-2016 report, in Malaysia, oral cancer was the 15th most common cancer in male and female (comprises of lip, tongue, mouth cancers). It contributed to 1.7% of all cancers reported within the year 2012-2016. About 60% of this cancer was diagnosed at late stages (stage III and IV). Oral cancer was noted to be the third most common cancer site for Indian females and 5th most common cancer site for Indian males. It is associated with identifiable risk factors/habits. More than 90% of oral cancers are squamous cell carcinoma (begin in the squamous cells that cover the surfaces of the mouth, tongue and lips)	

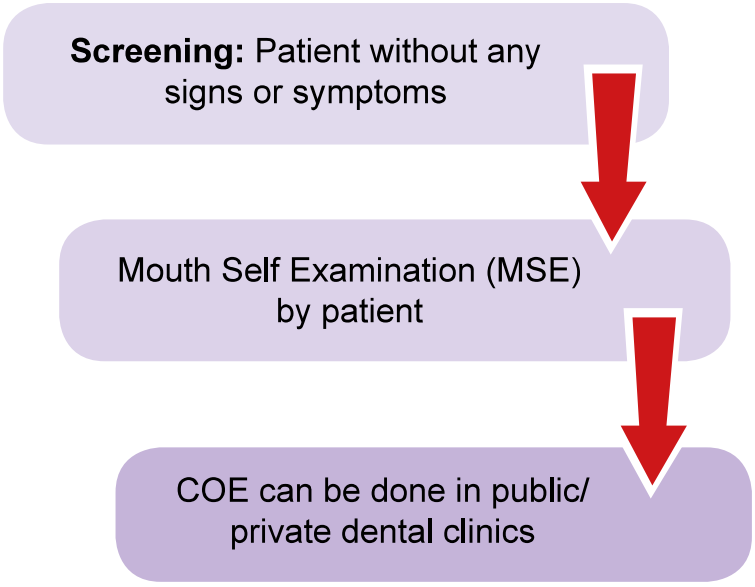
NO.	TOPICS	REMARKS
2.	**Oral Cancer Risks/ Contributing Factors** Risk factors for oral cancer usually related to lifestyle. a. Smoking or chewing tobacco- cigarettes, cigar and pipes Tobacco use accounts for most oral cancers. Smoking cigarettes, cigars, pipes, chewing tobacco, dipping snuff are all linked to oral cancer. Heavy smokers who use tobacco for a long time are most at risk. The risk is even higher for tobacco users who drink alcohol heavily. b. Betel quid/paan/areca nut chewing Quid chewing habit appears to be a dying habit among younger generation and urbanites. However, it is still widely practiced by some sections of the populations including Indians and indigenous people in Sabah and Sarawak. The main ingredients used are areca nut, betel leaf and lime. c. High alcohol consumption (synergistic with tobacco) People who drink alcohol are more likely to develop oral cancer than people who don't drink. The risk increases with the amount of alcohol that a person consumes. The risk increases even more if the person drinks and smokes.	

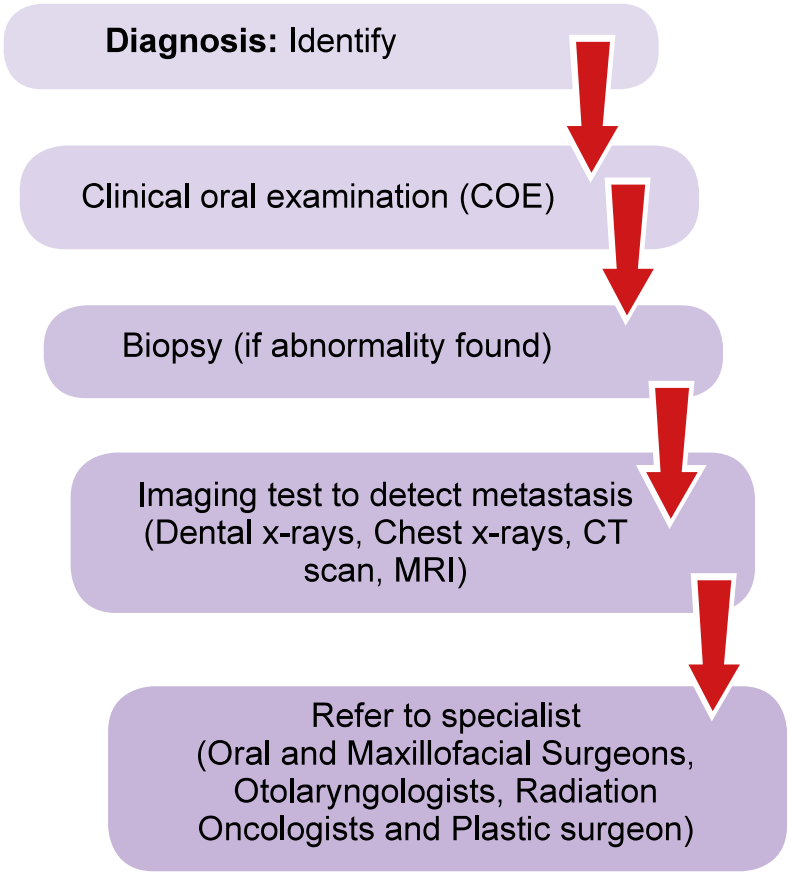
NO.	TOPICS	REMARKS
	d. Human papillomavirus (HPV) infection. The types of HPV found in the mouth are almost entirely sexually transmitted, so it is likely that oral sex is the primary route of getting them. HPV can infect the mouth and throat and cause cancer of oropharynx. HPV is thought to cause 70% of oropharyngeal cancer in the United States. e. A personal history of head and neck cancer People who have had head and neck cancer are at increased risk of developing another primary head and neck cancer. Smoking increases this risk. Other possible risk factors include: a. Exposure to secondary smoke b. Family history of cancer Source: 1. Zain, R. B., &Ghazali, N. (2001). A review of epidemiological studies of oral cancer and precancer in Malaysia. Annals of Dentistry University of Malaya,8, 50-56. 2. Cancer Research Malaysia, info fact sheet	

NO.	TOPICS	REMARKS
3.	**Signs and symptoms** Having any of the abnormal findings in the list below should lead to a suspicion of oral cancer: a. Sore or ulcers in the mouth that does not heal after 2 weeks. b. White or red patches or both in the mouth i. White patches (leukoplakia) are the most common. White patches sometimes become malignant ii. Mixed red and white patches (erythroleukoplakia) are more likely than white patches to become malignant iii. Red patches (erythroplakia) are brightly colored, smooth areas that often become malignant c. Swelling or lumps in the mouth, face or neck d. Problems or pain when swallowing. e. Difficulty in chewing and moving the jaw or tongue f. A persistent unexplained earache g. Unexplained loose or wobbly tooth h. Numbness of the tongue or mouth	Source: US Department of Health and Human Services, National Institute of Health, National Cancer Institute, National Institute of Dental and Craniofacial Research

NO.	TOPICS	REMARKS
4.	**Challenges to early detection** Patients factor: 1. Low uptake of the screening programme 2. Patient failed to come for screening or diagnosis Compliance to referral is only 53.3% however there was an increasing trend shown over the years 3. Logistics issues faced by patients **Services factor** 1. Late referral 2. Long appointment for investigation/treatment, location 3. Effectiveness of Health Education and Promotion activities related to oral cancer and risk habits 4. i) Challenges faced by Community Health care providers:- a. Not clear who are high risk individuals b. Do not regularly examine the mouth and not trained to evaluate lesions c. No system to keep track of patients and access to specialist ii) Challenges faced by Dental Healthcare providers:- a. Lack motivation to refer as there is no quick feedback or referral b. Lack access to specialist iii) Challenges faced by Oncology specialists a. No access to patients unless referred and patients' turn-up b. No effective system to follow up patients and patients are often loss to follow up	

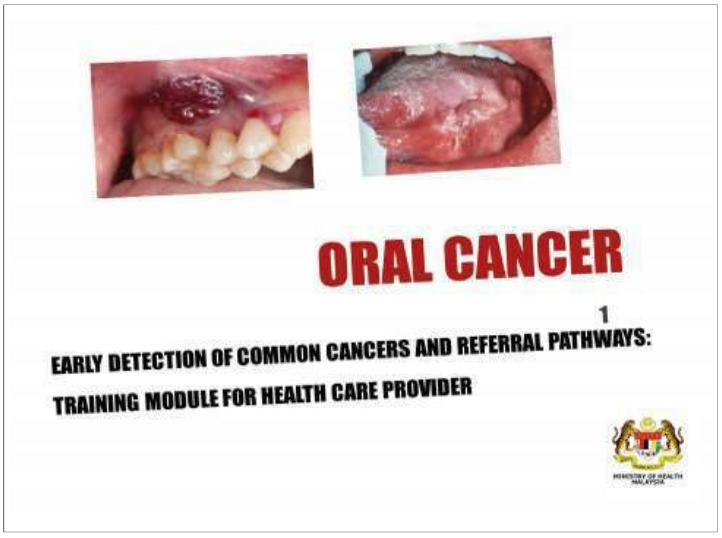
NO.	TOPICS	REMARKS
5.	**Treatment** Oral cancer treatment may include:- a) Surgery Surgery is to remove the tumour in the mouth or throat and is a common treatment for oral cancer. Sometimes, the surgeon also removes lymph nodes in the neck or tissues in the mouth and neck. b) Radiation therapy Radiotherapy is a local therapy. It affects cells only in the treated area. Radiation therapy is used alone for small tumours or for patients who cannot have surgery. It may be used before surgery to kill cancer cells and shrink the tumour. It also may be used after surgery to destroy cancer cells that may remain in the area. Radiation therapy uses high-energy rays to kill cancer cells. There are 2 types of radiation therapy:- i. External radiation: the radiation comes from a machine. Patients go to the hospital or clinic once or twice a day, generally 5 days a week for several weeks ii. Internal radiation (implant radiation): the radiation comes from radioactive material placed in seeds, needles or thin plastic tubes to put directly in the tissue. The patient stays in the hospital. The implants remain in place for several days and removed before patient goes home.	

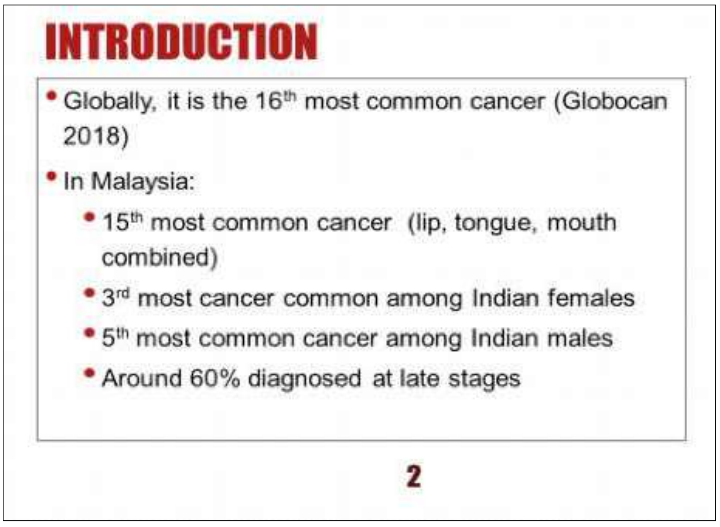
NO.	TOPICS	REMARKS
	c) Chemotherapy Chemotherapy uses anticancer drugs to kill cancer cells. It is called systemic therapy because it enters the blood stream and can affect cancer cells throughout the body. It is usually given by injection. d) Combination of above e) Palliative	
6.	**Referral pathway** **Screening**  	

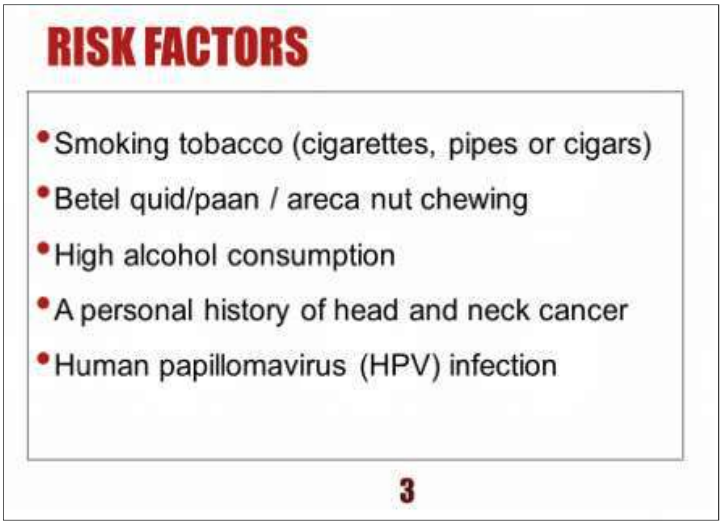
NO.	TOPICS	REMARKS
	Diagnosis 	

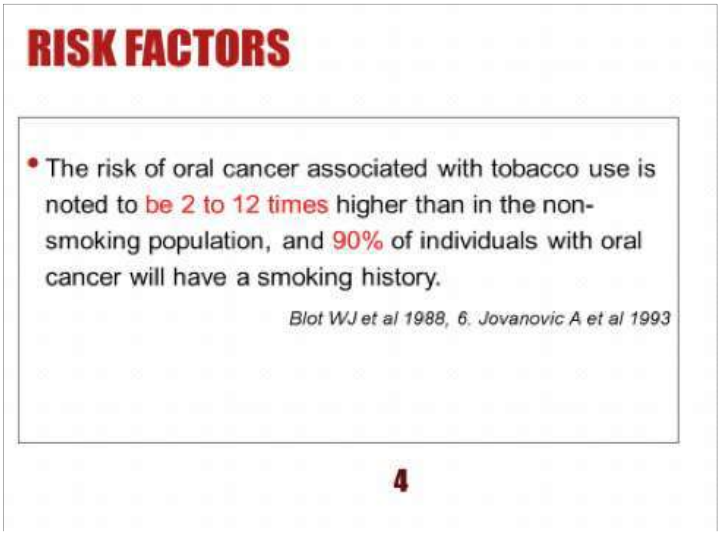
NO.	TOPICS	REMARKS
7.	**Patient Navigation** • Identify symptoms • Console and support • Inform on treatment options • Refer to specialist / hospital for management / Medical Social Services Department • Refer the patients to nearby NGO for social support	

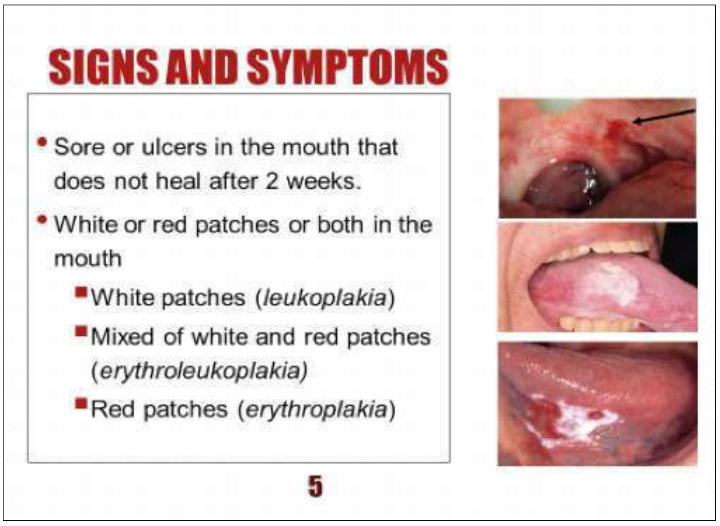
7.6.5 Power Point Presentation for Oral Cancer Module

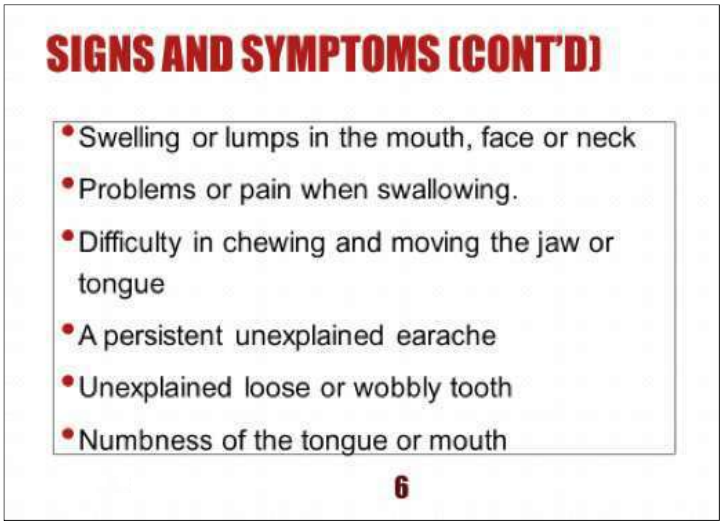












TREATMENT

- Oral cancer treatment may include:
  - Surgery
  - Radiation therapy
  - Chemotherapy
  - Combination
  - Palliative

7

Management of Oral Cancer in Malaysia

Primary care

Prevention
- Mass media
- Health Education
- Community Service
- Campaign
- Common risk factor / approach
- Mouth Self-Examination

Early Detection
- Outreach screening and early detection in community at risk
- Opportunistic screening at clinic or community service for patient a

Secondary Care
- ❑ Diagnosis
- ❑ Treatment
- ❑ Rehabilitative
- ❑ Palliative
- ❑ Traditional Complementary Medicine

Research
- ✓ Oral Cancer Research and Coordinating Center
- ✓ MOH

10

ISSUES AND CHALLENGES (CONT.)

- Late diagnosis and treatment
  - Patient - failed to come for screening / diagnosis appointment
  - Services – late referral, long appointment for investigation / treatment
  - Logistic issue
- Effectiveness of health education and promotion activities related to oral cancer and risk habits

8

REFERRAL PATHWAY

Screening: Patient without any signs or symptoms

Mouth self examination (MSE) by patient

COE can be done in public/private dental clinics

11

Challenges to early detection

Community Health Care Providers
- **ACCESS TO PATIENTS**
- Not clear who are high risk individuals
- Do not regularly examine the mouth and not trained to evaluate lesions
- No system to keep track of patients and access to specialist

Dental Healthcare Providers
- **REGULARLY EXAMINE THE MOUTH AND CAN BE EASILY TRAINED TO EVALUATE LESIONS**
- Lack motivation to refer as there is no quick feedback or referral
- Lack access to specialist

Oncology Specialists (Cancer Centre)
- **EXPERIENCE IN MANAGING OPMD AND OSCC LESIONS**
- No access to patients unless referred and patients turn-up
- No effective system to follow up patients and patients are often loss to follow up

9

REFERRAL PATHWAY

Diagnosis: Identify signs or symptoms

Clinical oral examination (COE)

Biopsy
(if abnormality found)

Imaging test to detect metastasis
(Dental x-rays, Chest x-rays, CT scan, MRI)

Refer to specialist
(Oral and Maxillofacial Surgeons, Otolaryngologists, Radiation Oncologists and Plastic surgeon)

12

PATIENT NAVIGATION

- Identify symptoms
- Console and support
- Inform on treatment options
- Refer to specialist / hospital for management /medical social services department
- Refer the patients to nearby NGO for social support

13

THANK YOU

14

NOTA

Kementerian Kesihatan
Malaysia

CAWANGAN PENYAKIT TIDAK BERJANGKIT (NCD)
BAHAGIAN KAWALAN PENYAKIT
KEMENTERIAN KESIHATAN MALAYSIA