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CLINICAL PRACTICE GUIDELINES

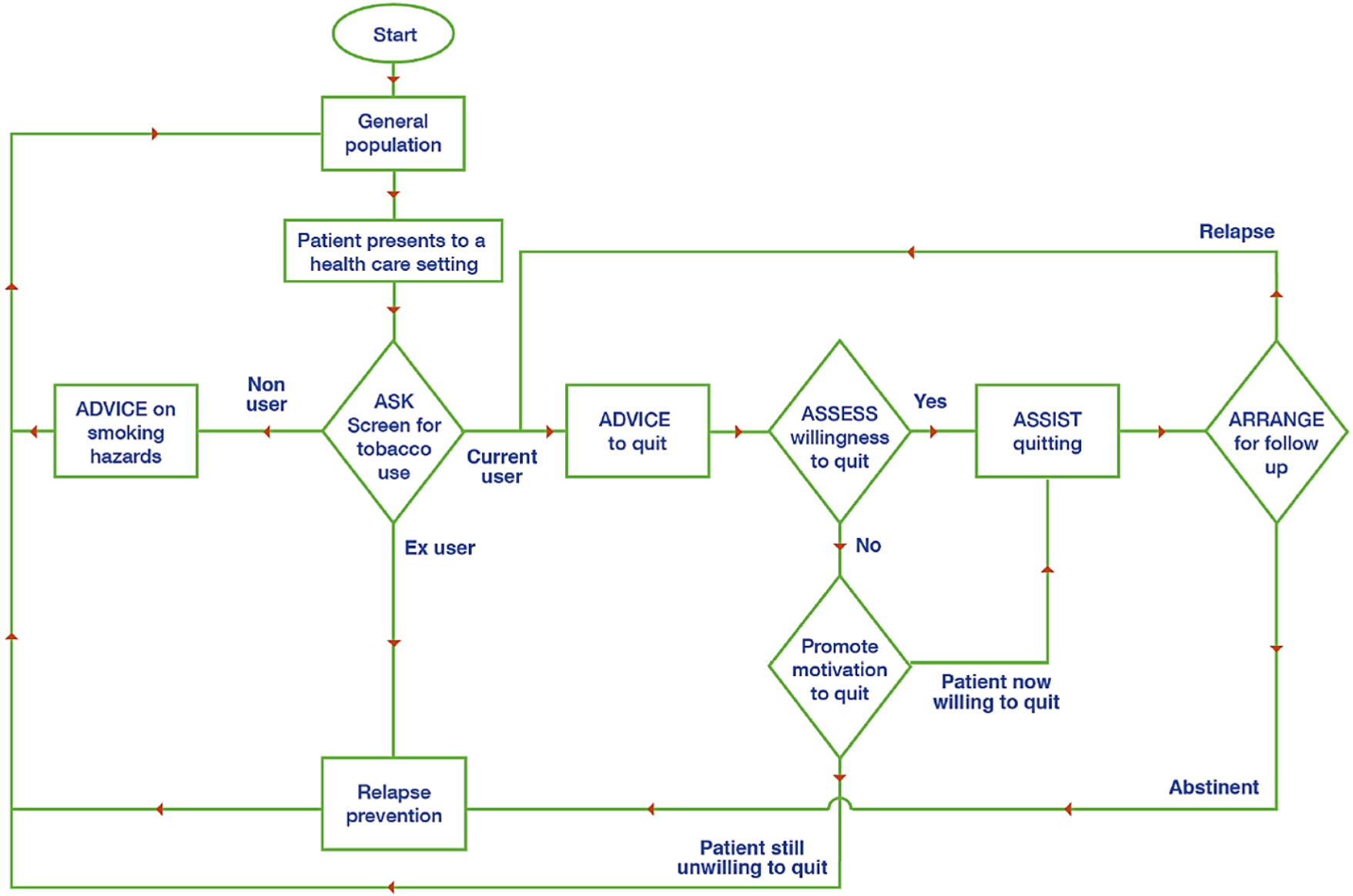
TREATMENT OF TOBACCO USE DISORDER

MINISTRY OF HEALTH MALAYSIA

MALAYSIAN ACADEMY OF PHARMACY

CLINICAL PRACTICE GUIDELINES ON TREATMENT OF TOBACCO USE DISORDER

ALGORITHM FOR TREATMENT OF TOBACCO USE DISORDER



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STATEMENT OF INTENT
This CPG is an update of the CPG on Tobacco Use and Dependence 2003. In this update, the CPG have been renamed as Clinical Practice Guidelines on Treatment of Tobacco Use Disorder 2016. This update is meant to be as guidelines for clinical practice, based on the best available evidence at the time of development. Adherence to these guidelines may not necessarily guarantee the best clinical outcome in every case. This CPG is not meant as a substitute for clinical judgement and clinicians are recommended to individualize the treatment strategy for every smoker. Every healthcare provider is responsible for the management of his/her unique patient based on the clinical picture such as nicotine addiction level, presented by the patient and the management options available locally.

This CPG will be reviewed every four years or sooner and updated with the most recent development as the need arises. Upon the time for next review, the CPG Secretariat will inform the Chairperson of the CPG Committee Members, who will initiate discussion on revision of the CPG. A multidisciplinary team will be formed and the latest systematic review methodology will be employed.

Every care is taken to ensure that this publication is correct in every detail at the time of publication. However, in the events of errors or omissions, corrections will be published in the web version of this document, which is the definitive version at all times. This version can be found on the Ministry of Health website: http://www.moh.gov.my

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FOREWORD

One in two smokers will eventually die as a result of their addiction to nicotine in Malaysia. In absolute numbers, more than 20,000 Malaysians die annually as a result of their smoking habit. It is estimated that 43.0% of men and 1.4% of women, above the age of 15, smoke in Malaysia. These figures are still alarmingly high and more needs to be done to help smokers to quit, especially if Malaysia is to achieve the global World Health Organization Non-Communicable Diseases (WHO NCD) target to achieve smoking prevalence of 15% by the year 2025.

We have now reached a point where the majority of smokers are aware that smoking is not good for their health but have difficulty quitting. Globally and nationally, the majority of current smokers would like to give up smoking. As a party to the WHO Framework Convention on Tobacco Control (FCTC), Malaysia is committed to strengthen the smoking cessation services, as stipulated in Article 14 FCTC. Hence, this Clinical Practice Guideline was developed to ensure smokers gets the latest evidenced-based treatment there are to ensure higher quit smoking success rate. Helping our fellow Malaysian smokers to beat their nicotine addiction is beneficial for both short and long-term personal and national gains. Last but not least, I would like to thank the CPG committee members and many others that have contributed to the development of this CPG.

Towards a healthy and smokefree Malaysian generation!

(DATUK SERI DR. S. SUBRAMANIAM)
Minister of Health Malaysia

FOREWORD

Nicotine addiction is one of the hardest addictions to break but nonetheless, every year, many smokers managed to break away from this addiction. However, a national survey in 2016 revealed that nearly 80% of former smokers quit unaided, without any professional intervention. This figure is worrying, as studies repeatedly show that quitting unaided yield the lowest success rate of being smokefree, hence many smokers needed 7-8 attempts before successfully becoming ex-smokers.

Most government Health Clinics and major hospitals in Malaysia have smoking cessation services and now, with the introduction of mQuit Services, this service is also available in the private sector, through some community pharmacies, general practices or other institutions. Our challenge now is how to attract fellow Malaysians who smoke to visit our smoking cessation services and deliberate on how they can be guided to quit properly. Smoking cessation services should entice as many smokers as possible, who are otherwise coming to health care facilities for other health services anyway.

A national survey conducted in 2016 among Malaysian adolescents aged 10 – 19 years old (Tobacco and Electronic Cigarette Survey among Malaysian Adolescent – TECMA) found that an alarming 78.7% of ever smokers had their first cigarette before the age of 14 years old. The same study also show that 28.5% of the current adolescent smokers have already developed low nicotine dependence. More often than not, their nicotine dependence will only get stronger by the time they enter their working life.

Therefore, it is high time for healthcare providers to promote and attract young adult smokers to think about quitting and to at least discuss about quitting with the help of healthcare professionals. Our data showed that young adults are the least likely to enquire about quitting, while their tobacco disorder is probably easier to treat in comparison to older and more mature smokers. Our smoking cessation services must do more to appeal to younger Malaysian smokers to come to the services.

Malaysia is committed towards our obligations with the World Health Organisation Framework Convention on Tobacco Control (WHO FCTC). We are also committed to achieve the WHO Global Non-Communicable Diseases target which is to achieve smoking prevalence of 15% or less by the year 2025. In the meantime, the Sustainable Development Goals 2016-2030 requires parties to strengthen their implementation of FCTC activities, including helping smokers to quit smoking.

I would like to congratulate the CPG Development Group for updating the older CPG of Treatment of the Tobacco Use and Dependence to the current CPG on Treatment of Tobacco Use Disorder. I hope that all health care providers will utilise this Clinical Guidelines to provide safe and effective smoking cessation services for smokers to quit successfully. Together, we can help to further improving the health of our nation!

Yours sincerely,

(DATUK DR NOOR HISHAM BIN ABDULLAH)
Director General of Health
Ministry of Health Malaysia

EXECUTIVE SUMMARY

Tobacco use is recognized as the main cause of premature and preventable death in our country. It is estimated that 20,000 deaths in Malaysia are attributed to smoking annually. Tobacco dependency does not only cause physical withdrawal, it also causes lifelong addiction. Hence, due recognition should be given to it as a chronic disease. Malaysia has a high prevalence of smokers especially among the males and adolescents. However, despite the high prevalence of tobacco use, healthcare providers are not well trained to manage this problem effectively. Furthermore, health care providers lack the knowledge and awareness that treating tobacco dependence is more cost effective as compared to treating tobacco related diseases.

Since the launch of the Clinical Practice Guideline (CPG) on Treatment of Tobacco Use and Dependence 2003 by the Ministry of Health, there have been several new evidences based developments in the smoking cessation services which are highlighted in this update. For example, there are changes or introduction of new cessation pharmaceutical aids, combination use of pharmaceutical aids, new scientific evidence of behavioural therapies and now the emergence of electronic nicotine and non-nicotine devices, such as Vape. The approach towards tobacco use or nicotine addiction has also changed whereby it is now considered a medical condition that requires medical attention. Hence, it is very timely for the 2003 CPG to be updated to the CPG of Tobacco Use and Disorder 2016.

The objective of this CPG remains the same. It is to provide the latest and updated treatment protocols to assist health care providers in managing tobacco use and dependence effectively.

This guideline was based on a combination of two methods. The first part was where three leading and prominent international CPGs on tobacco cessation were used as references and the second was inclusion of the latest literature based on a systematic search of the evidence. All recommendations in this CPG are graded based on the appropriate level of evidence and are specific and unambiguous. The health benefits, adverse effects and risks of all recommended pharmacological agents are detailed in tables throughout this document. The overall treatment guideline is provided in a clinical pathway format. Furthermore, the effectiveness and health benefits derived from each recommendation in this CPG are taken into consideration.

Both non-pharmacological and pharmacological approaches towards achieving smoking cessation are equally important and the skills involved must be grasped by cessation providers. There are several standardised behavioural approaches such as 5A, 5R and STAR to help cessation providers to assist their clients. When these behavioural approaches are combined with pharmacological intervention,

the quit rate is further increased. Combination pharmacological interventions which might include the combination of NRTs or with a non-NRT medication can further increase the success rate. Therefore, the treatment approach should be tailored to the individual smoker and care be given when treating certain special populations.

It is hoped that clinicians and other allied healthcare providers will adopt this evidence – based guideline to maximize the success rate of tobacco cessation in their respective services. This CPG, however, is not meant as a substitute for clinical judgement and clinicians are recommended to individualize their treatment strategies where appropriate.

Evaluation of this CPG would include an assessment of the number of smoking cessation services and the outcome of smokers treated throughout Malaysia. Studies to look at improvement in standard of practice regarding smoking cessation treatment will be conducted. Local research and analysis of Malaysian smoking and tobacco use scenario should be encouraged to improve our understanding towards improving the smoking cessation in our country.

GUIDELINE DEVELOPMENT AND OBJECTIVES

This guideline is based on a combination of two methods; firstly, three clinical practice guidelines (CPGs) as mentioned below were used as main references and secondly, latest literature review was incorporated in the development of this guideline.

The main references were from:

A. Treating Tobacco Use and Dependence 2008, US Department of Health and Human services (Fiore et al. 2008).

B. The New Zealand Guidelines for Helping People to Stop Smoking. Wellington: Ministry of Health 2014.

C. CAN-ADAPTT. Canadian Smoking Cessation Clinical Practice Guideline, Toronto, Canada: Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment, Centre for Addiction and Mental Health 2011.

GUIDELINES DEVELOPMENT

The members of the Development Group (DG) for these CPG were from the Ministry of Health (MoH), Ministry of Higher Education, private medical hospital and Non-Governmental Organisation. There was active involvement of a multidisciplinary Review Committee (RC) during the process of the CPG development.

A literature search was carried out using the following electronic databases: Guidelines International Network (G-I-N); Medline via Ovid, PubMed and Cochrane Database of Systemic Reviews (CDSR) (refer to Appendix 1 for Example of Search Strategy). The inclusion criteria are all literature on treatment on tobacco use disorder regardless of study designs. The search was limited to literature published in the last 15 years, humans and English. In addition, the reference lists of all retrieved literature and guidelines were searched to further identify relevant studies. Experts in the field were also contacted to identify relevant studies. In certain situations, pivotal papers beyond the scope of search were used in the CPG. All searches were conducted from 30th July 2014 to 30th March 2016. Literature searches were repeated for all clinical questions at the end of the CPG development process allowing any relevant papers published before 30th June 2016 to be included. Future CPG updates will consider evidence published after this cut-off date. The details of the search strategy can be obtained upon request from the CPG Secretariat.

Reference was also made to other CPG on treatment of Tobacco use disorder such as National Institute for Health and Care Excellence (NICE) - Smoking and tobacco: smoking cessation in mental health services, recommendation for all patients with mental illness who smoke from European Psychiatric Association (EPA). The CPG was evaluated using the Appraisal of Guidelines for Research and Evaluation (AGREE) II prior to them being used as references.

A total of 17 clinical questions were developed under different sections. Members of the DG were assigned individual questions within these sections. (Refer to Appendix 2 for Clinical Questions).

The CPG committee members met 14 times throughout the development of these guidelines. The literature retrieved was appraised by at least two DG members using Critical Appraisal Skill Programme checklist, presented in evidence tables and further discussed in each DG meetings. All statements and recommendations formulated after that were agreed upon by the DG. Where evidence was insufficient, the recommendations were made by consensus of the DG. Any differences in opinion were resolved consensually. The CPG was based largely on the findings of systematic reviews, meta-analyses and clinical trials, with local practices taken into consideration.

On completion, the draft of the CPG was reviewed by external reviewers. It was also posted on the MoH Malaysia official website for feedback from any interested parties. The draft was finally presented to the Technical Advisory Committee for CPG, and the HTA and CPG Council MoH Malaysia for review and approval.

This CPG has been developed to serve as a useful tool for doctors and other health professionals and students in Malaysia to treat tobacco use in various settings, including hospitals, clinics or pharmacies.

LEVELS OF EVIDENCE SCALE AND GRADES OF RECOMMENDATION

The literature used in these guidelines was graded using the US/Canadian Preventive Services Task Force Level of Evidence (2001), while the grading of recommendation was based on the US Government Agency for Health Care Policy and Research (AHCPR) ABC Grade of Recommendation. In formulating the recommendations, overall balances of the following aspects are considered in determining the strengths of the recommendations:-

- Overall quality of evidence
- Balance of benefits versus harms and side effects
- Values and preferences
- Resource implications
- Equity, feasibility and acceptability

LEVELS OF EVIDENCE SCALE

I Evidence obtained from at least one properly randomised controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomisation

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one research group.

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments.

III Opinions of respected authorities, based on clinical experienced; descriptive studies and case reports; or reports of expert committees.

Adapted from the US / Canadian Preventive Services Task Force 2001

GRADES OF RECOMMENDATION

A	Data derived from multiple randomized clinical trials or meta analyses
B	Data derived from a single randomized clinical trial or large non-randomized studies
C	Only consensus of opinions of experts, case studies or standard of care

Adapted from the US Government Agency for Health Care Policy and Research (AHCPR)

OBJECTIVE

The objective of the CPG is to provide evidence-based recommendations to assist healthcare providers in the identification, assessment and management of tobacco use disorder in general and specific population to optimise cessation rate.

However, this CPG is not meant as a substitute for clinical judgement and clinicians are recommended to individualize their treatment strategies.

TARGET POPULATION

a. Inclusion criteria
   Individuals with tobacco use disorder

b. Exclusion criteria
   Individuals with other substance disorder

TARGET USERS

This CPG has been developed to serve as a useful tool for doctors and other health professionals and students in Malaysia, to treat tobacco use disorder in various settings, including hospitals, clinics, pharmacies or community settings.

MONITORING FOR TREATMENT OF TOBACCO USE DEPENDENCE

Definition of a quitter - A smoker is considered to have been successfully quit smoking if he has been abstinent without even a single puff of cigarette for at least six months from the last cigarette (which is also his Quit Date).

Six month is a typical period of time for measuring successful smoking cessation. A 'Quit Rate' for any treatment centre is defined as the proportion of tobacco users who managed abstinent from smoking for at least 6 months, among those who attempted to quit smoking.

A typical six month Quit Rate for an institution is calculated using the following formula:

$$\text{Quit rate} : \frac{\text{Number of successful quitters in the current six month period (e.g. Jan – Jun)}}{\text{Number of smokers who have set their quit dates in previous six month period (e.g. previous Jul – Dec)}} \times 100\%$$

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LIST OF REVIEWERS FOR CLINICAL PRACTICE GUIDELINES ON TREATMENT OF TOBACCO USE DISORDER 2016 (in alphabetical order)

The draft guideline was reviewed by a panel of experts from the public and private sectors. Local reviewers were asked to comments on the updates of this CPG, in comparison to the 2003 version and to concentrate on the comprehensiveness and accuracy of the interpretation of evidence supporting the recommendations in this CPG. International reviewers were asked to review 2016 draft CPG. There was also a patient representative in the list of reviewers.

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LIST OF ABBREVIATIONS

1.	CDC	Centres for Disease Control and Prevention
2.	CI	Confidence interval
3.	CPG	Clinical practice guideline
4.	CTPR	Control of tobacco products and regulations
5.	EC	Electronic cigarette
6.	ETS	Environmental tobacco smoke
7.	FDA	Food and Drug Administration
8.	MAO	Monoamine oxidase
9.	MoH	Ministry of Health
10.	NRT	Nicotine replacement therapy
11.	OR	Odds ratio
12.	RACGP	The Royal Australian College of General
13.	RR	Relative risk
14.	SR	Sustained release
15.	TTS	Transdermal therapeutics system

LIST OF TABLES

1.0 INTRODUCTION

Tobacco use is the single greatest preventable cause of death in the world today and the World Health Organization has demonstrated that tobacco use is a contributing risk factor for 6 of the 8 leading causes of death, worldwide[1, Level III]. In Malaysia, smoking kills 20,000 Malaysians every year and will increase to 30,000 by the year 2020 if the pattern of smoking does not change.

Malaysia is a party to the WHO Framework Convention on Tobacco Control (WHO FCTC) since its enforcement in September 2005. Article 14 of the WHO FCTC demands that "each Party shall develop and disseminate appropriate, comprehensive and integrated guidelines based on scientific evidence and best practices, taking into account national circumstances and priorities, and shall take effective measures to promote cessation of tobacco use and adequate treatment for tobacco dependence". Strengthening tobacco cessation is core to the 'O - Offer help to quit tobacco use' component of the MPOWER strategy of the WHO FCTC [2, Level I].

Malaysia is committed to achieve its WHO Global NCD Target 2025, which is to reduce national smoking prevalence by 30% from the baseline in 2011. There are two main strategies to achieve this, which are to reduce smoking initiation among youths and to help existing smokers to beat their nicotine addiction.

A National Strategic Plan on Tobacco Control has been developed by the Ministry of Health in 2015, incorporating the MPOWER strategy for co-ordinating tobacco in Malaysia[3, Level III]. Strengthening tobacco cessation services is given priority, with development of a standardised services across the public and private practices – 'the mQuit Services' as one the activities. This Clinical Practice Guideline is essential for delivery of uniformed tobacco cessation services through the mQuit Services.

Nicotine is highly addictive and some researchers have placed nicotine dependence as comparable to the dependence caused by opiates, cocaine, or other illicit drugs[4, Level I]. Effective pharmacologic and counselling strategies are now the pillars of tobacco cessation programmes, and taken in combination can achieve the highest rates of smoking cessation[5, Level III]. Pharmacotherapy for smoking cessation aims primarily to reduce the intensity of urges to smoke and/or ameliorate the aversive symptoms while counselling or behavioural support aims to boost or support motivation to resist the urge to smoke and develop people's capacity to implement their plans to avoid smoking[6, Level III].

Most smokers believe that stopping smoking is purely a matter of willpower and remain unaware of effective treatments to promote quitting. It is important that health care providers whom often treat smokers to be familiar with available therapies to educate patients of their options for smoking cessation.

2.0 EPIDEMIOLOGY OF TOBACCO USE

The trend of current cigarette smoking among Malaysian adults is summarised as per Table 1 below. Overall, there is a slight downtrend of prevalence of cigarette smoking in Malaysia and this trend is more considerable among males.

Table 1: Trend of smoking among adults (≥18 years) in Malaysia 1996-2015

Study year	1996	2006	2011	2015
Overall prevalence (%)	24.7	22.8	24.6	24.0
Male prevalence (%)	49.1	48.8	46.6	45.1
Female prevalence (%)	3.5	1.9	1.1	1.4

Adapted from Tee et al. 2016[7]

The overall prevalence of smoked any tobacco products for Malaysians aged 15 year old and above was 22.6%; of which 20.1% smoked manufactured cigarette, 2.3% smoked hand-rolled cigarettes and 0.2% smoked other smoked tobacco[8, Level III].

A vast majority of Malaysian smokers were aware of harmful effects of smoking and 78% of these smokers had plans to quit at some point in the future, with 29% having plans to quit in the next six months[9, Level II-3].

Among the Malaysian youths, the 2009 Global Youth Tobacco Survey found that 19.5% of 13 to 15 year olds use some form of tobacco products with 18.2% smoking cigarettes and 9.5% using other tobacco products. In 2016, the prevalence of tobacco use among adolescents age 13-15 year old in Malaysia has reduced to 14.8%[10, Level III].

3.0 ASSESSMENT OF TOBACCO SMOKING

The first step in treating tobacco use disorder is to identify tobacco users. The identification of smokers itself increases rates of clinician intervention. Hospitals provide a good setting to implement smoking cessation intervention. However issues of accessibility and availability of the medication, dedicated staff, operating days and equipment have to be solved[11, 12]. Effective identification of tobacco use status not only opens the door for successful interventions (e.g., clinician advice and treatment), but also guides clinicians to identify appropriate interventions based on patients' tobacco use status and willingness to quit. The Guideline recommends that all health care providers use the opportunity at every encounter to assess and intervene all patients.

The assessments are to look for:

Level of addiction (using Modified Fagerström Test for Cigarette Dependence Questionnaire) (See Appendix 3) and smoking status verified with carbon monoxide (CO) in expired breath air. Exhaled CO was proved to be a useful tool in predicting nicotine dependence and to motivate smokers to quit[13, Level I].

Screening for current or past tobacco use will result in four possible responses:

A. The patient uses tobacco and is now willing to make a quit attempt;

B. The patient uses tobacco but is now not willing to make a quit attempt;

C. The patient once used tobacco but has since quit;

D. The patient never regularly used tobacco.

4.0 CLINICAL INTERVENTIONS FOR TOBACCO USE DISORDER

There are two types of clinical intervention depending on the intensity of intervention and level of service provided. They are:

i. Brief clinical intervention

ii. Intensive clinical intervention

4.1 Brief Clinical Intervention for Tobacco Use Disorder

4.1.1 For All Smokers

Brief clinical intervention by the physician increases quit rates effectively[14, Level I]. It is vital to change clinical culture and practice patterns to ensure that every patient who uses tobacco is identified and offered treatment.

The five major steps (5 A's) for intervention are described below and summarised in Table 1. The strategies are designed to be brief and minimal health care provider's time is required[15,16,17].

These brief opportunistic advices typically involve asking patients about their current smoking, advising them to stop, offering assistance either by providing further advice, a referral to a specialist service or recommendation of or a prescription for pharmacotherapy or arranging a follow up wherever it is appropriate. The focus of this opportunistic advice is to increase smokers' motivation to quit in improving success rate of quitting[18]. This brief intervention has been proven to increase overall tobacco abstinence rates regardless he or she is referred to an intensive intervention[19,20 Level I,21 Level III].

The steps involved in the delivery of brief intervention include:

Step 1: Ask about tobacco smoking

ALL patients should be **asked** about their smoking status and the findings should be documented in the patient's notes. This should be delivered opportunistically during routine consultations to all smokers regardless whether they are seeking help to stop smoking. For people who smoke or have recently stopped smoking, the smoking status should be checked and updated at every visit to prevent relapse. Systems should be in place in *all* health care settings to ensure that smoking status is accurately documented at every visit ([20, Level I; 6, Level I])

Step 2: Advice to quit

Advice to quit should be given clearly to all patients found to be smoking. Studies have shown that advise by health care providers (medical, dental, pharmacist, nurses etc.) increases rates of abstinence. There is a strong dose-response relationship between the session length of person-to-person contact and successful treatment outcomes[20, Level I].

Multiple efforts by health care providers can increase these rates further. Every tobacco user should be offered at least a brief intervention which consists of brief cessation advice from the health care providers. However, intensive interventions are more effective than brief interventions and should be used whenever possible as smokers' motivation, beliefs and feeling about smoking and quitting is always conflicting[18, Level III]. Face to face treatment delivered for four or more sessions appears especially effective in increasing abstinence rates[22, Level I]. Therefore, if feasible, treatment providers should strive to meet four or more times with individuals quitting tobacco use.

Health care workers should be provided with appropriate training to enable them to provide brief advice. This training should include providing the health care worker with information on available evidence-based smoking cessation treatments[19].

Step 3: Assess willingness to make a quit attempt

Health care providers involved with tobacco treatment should **assess** the willingness to begin treatment to quit.

Though there is a lack of evidence for greater effectiveness of stage based approaches[23, Level I], stages of change model provides a useful framework to help health care providers to identify smokers and assist smokers in quitting[24, Level III].

There is some evidence that the likelihood of success in an attempt to quit is unrelated to the smoker's expressed interest in quitting in the period leading up to the attempt – unplanned attempts to quit are as likely (or even more likely) to be as successful as planned attempts[25, Level III; 26, Level III]. Thus, there is benefit in encouraging all smokers to consider quitting whenever the opportunity arises[20, Level I].

Step 4: Assist in quit attempt

All patients should be **assisted** to quit. Brief advice as short as 30 seconds and self-help material have been shown to help[14, Level I]. Brief advice (3-5 minutes) is effective and there is a dose response in treatment provision.

Setting a quit date has been shown to be effective. Ideally the quit date should be within 2 weeks on assessment to quit.

- Individual, group and telephone counselling approaches are effective and should be used in smoking cessation interventions. Smoking cessation interventions that are delivered in multiple approaches increase abstinence rates and should be encouraged. Studies have shown that individual counselling resulted in higher abstinence rates as compared to group or phone counselling and self-help[27, Level II-1; 22, Level I]. There are two forms of telephone counselling which is the 'proactive counselling' and 'reactive counselling. In proactive counselling, smokers receive calls from healthcare providers according to a pre-agreed schedule. In 'reactive counselling', smokers calls a helpline seeking help or advice. Proactive services, compared to reactive services, have been more widely evaluated as they can be more easily controlled. Studies have recommended that proactive telephone counselling as one of the formats for delivering behavioural counselling[20, Level I; 28, Level I; 29, Level I]. For hospitalised patients, a study has shown that high intensive telephone follow-up (4 calls at 48 hours post discharge, 7, 21, 90 days) was more effective than low intensive follow-up (1 call at 48 hours post discharge) in addition to 30 minutes counselling[30, Level I].

Step 5: Arrange follow up

Health care providers wanting to do more intensive counselling will require further appropriate training. Health care providers who are not confident in providing counselling interventions can still assist patients wanting to quit by **arranging** referrals to services that can assist.

Patients who are attempting to quit are at high risk of relapsing. Continuous abstinence is achieved when the patient has not smoked for at least 6 months. The highest risk of relapse is within the first 8 days of quitting. Hence the support has to be given the utmost importance in the first week of quitting cigarette smoking. Evidence has shown that abstinence of 12 months follow up is a good indicator for long term abstinence[31].

The evidence suggests that multiple treatment sessions increase smoking abstinence rate and its effectiveness. More intensive interventions (more than eight sessions in six months) may produce enhanced abstinence rate. However, these interventions may have limited reach (affect fewer smokers) and may not be feasible in some primary care settings[20, Level I].

The steps recommended by the NCSCT for evidence-based behaviour change techniques to assist health care providers in managing smokers who seek clinic help to quit smoking are[32, Level I]:-

Session 1: Pre-quit Assessment (1 or 2 weeks prior to Quit Date)
Session 2: Quit Date
Session 3: 1 week post Quit Date
Session 4: 2 weeks post Quit Date
Session 5: 3 weeks post Quit Date
Session 6: 4 weeks post Quit Date
(See Appendix 4 for details)

Table 2: The "5 A's" for brief intervention

1. Ask about tobacco use: • Identify and document tobacco use status for every patient at every visit, including the adolescents. • Where appropriate, ask the caretaker of the patient about tobacco use or exposure to tobacco smoke. **What needs to be done?** Expand the vital signs to include tobacco use or use an alternative universal identification system (e.g. stickers on patient charts).
2. Advise to quit: In a clear, strong and personalized manner urge every tobacco user to quit. **Advice should be:** • Clear—"I think it is important for you to quit smoking now and I can help you." "Cutting down while you are ill is not enough." • Strong—"As your clinician, I need you to know that quitting smoking is the most important thing you can do to protect your health now and in the future. The clinic staff and I will help you." • Personalised —Tie tobacco use to current health/illness, and/or its social and economic costs, motivation level/readiness to quit, and/or the impact of tobacco use on children and others in the household.
3. Assess willingness to make a quit attempt: **Is the tobacco user willing to make a quit attempt at this time?** • If the patient is willing to make a quit attempt at this time, provide assistance.

- If the patient will participate in an intensive treatment, deliver such a treatment or refer to an intensive intervention.
- If the patient clearly states he or she is unwilling to make a quit attempt at this time, provide a motivational intervention built around the "5 R's": relevance, risks, rewards, roadblocks, and repetition. (Refer to section Smokers unwilling to quit, page 32)

If the patient is a member of a special population (e.g., adolescent, pregnant smoker), consider providing additional information (refer to section Special Population, page 39).

4. Assist in quit attempt:

- For the patient willing to make a quit attempt, use counselling with pharmacotherapy (when indicated) to help him or her quit.

Preparations for quitting: (STAR)

- **S**et a quit date. Ideally, the quit date should be within 2 weeks. Reduce the number of cigarettes gradually before the set date.
- **T**ell family, friends, and co-workers about quitting and request understanding and support. Also, help patient obtain extra-treatment social support from self-help groups. Other smokers in the household. Patients should encourage household members to quit with them or not smoke in their presence to minimize risk of treatment failure and exposure to second-hand smoking.
- **A**nticipate challenges to planned quit attempt, particularly during the critical first few weeks. These include nicotine withdrawal symptoms. Discuss challenges/triggers and how patient will successfully overcome them. Provide patients with problem solving/skills training.
- **R**emove tobacco products from his or her environment. Prior to quitting, avoid smoking in places where a lot of patient's time is spent (e.g., work, home, car).
- Provide a supportive healthcare environment while encouraging the patient in his or her quit attempt.
- Abstinence. Total abstinence is essential. Not even a single puff after the quit date.
- Past quit experience. Identify what helped and what hurt in previous quit attempts.
- Alcohol. Since alcohol can cause relapse, the patient should consider limiting/abstaining from alcohol while quitting.

- Recommend the use of approved pharmacotherapies, if indicated. Explain how these medications increase smoking cessation success and reduce withdrawal symptoms.
- Provide supplementary materials.

5. Arrange follow-up:

Schedule follow-up, preferably within the first week after the quit date.

- **Timing**. Follow-up should occur soon after the quit date, preferably during the first week. Subsequent follow-ups are recommended weekly within the first month, and then every two weeks for the 2nd and 3rd month, and monthly after that up to 6 months.
- For those who successfully quit, schedule follow-up, either in person or via telephone. Actions during follow-up:
  - Congratulate success
  - If tobacco use has occurred, review circumstances and elicit commitment to total abstinence.
  - Remind patient that a lapse can be used as a learning experience. Identify problems already encountered and anticipate challenges in the immediate future.
  - Assess pharmacotherapy use and problems. Consider using more intensive treatment, if not available, referral is indicated.

Adapted from Fiore et al. 2008[20, Level I]*.*

Recommendation 1	**Grade of Recommendation**
Ask and document smoking status for **all** patients. Provide brief advice on quit smoking at every visit to all smokers.	**C**
Use individual, group and telephone counselling approaches, or in combination for smoking cessation interventions.	**A**
Arrange a minimum of six to eight face to face follow-up sessions for smoking cessation interventions in six months.	**A**

4.1.2 ABC for Smoking Cessation

Alternatively, another approach is the ABC approach to help smokers to quit smoking (see Appendix 5).

The steps are as follows:

A. **Ask all people** about their smoking status and document this.
B. Provide **Brief advice to stop smoking** to all people who smoke, regardless of their desire or motivation to quit.
C. Make an offer of, and refer to or provide, evidence based **Cessation treatment**.

(Implementing the ABC Approach for Smoking Cessation Framework and work programme, [19])

Physicians may be more effective in promoting attempts to stop smoking by offering assistance to all smokers than by advising smokers to quit and offering assistance only to those who express an interest in doing so[6].

4.2 Intensive Clinical Interventions for Tobacco Use Disorders

Evidence shows that intensive tobacco dependence treatment is more effective than brief treatment. This could be achieved by increasing the length of individual treatment sessions, the number of treatment sessions and specialized behavioural therapies. Intensive clinical interventions could be provided by any suitably trained doctors and other health care providers who have the resources available to give intensive interventions and are appropriate for any tobacco user willing to participate in them[20, Level I].

Table 3: Components of an intensive tobacco dependence intervention

Assessment	• Assessments should determine whether tobacco users are willing to make a quit attempt using an intensive treatment programme. • Other assessments can provide information useful in counselling (e.g., stress level, dependence).
Programme clinicians	• Multiple types of clinicians are effective and should be used. • One counselling strategy would be to have a medical/health care clinician deliver a strong message to quit and information about health risks and benefits, and recommend and prescribe medications recommended in this Guideline update.

	• Nonmedical clinicians could then deliver additional counselling interventions.
Programme intensity	There is evidence of a strong dose-response relation; therefore, when possible, the intensity of the programme should be: • Session length – longer than 10 minutes • Number of sessions – 4 or more
Programme format	• Either individual or group counselling may be used. • Telephone counselling also is effective and can supplement treatments provided in the clinical setting. • Use of self-help materials and cessation Web sites is optional. • Follow up interventions should be scheduled.
Type of counselling and behavioural therapies	Counselling should include practical counselling (problem solving/skills training) and intra-treatment social support.
Medication	• Every smoker should be offered medications endorsed in this Guideline, except when contraindicated or for specific populations for which there is insufficient evidence of effectiveness (i.e., pregnant women, smokeless tobacco users, light smokers, and adolescents). • The clinician should explain how medications increase smoking cessation success and reduce withdrawal symptoms. • Certain combinations of cessation medications also are effective. • Combining counselling and medication increases abstinence rates.
Population	Intensive intervention programmes may be used with all tobacco users willing to participate in such efforts.

Adapted from Fiore et al. 2008 (Level I).

4.3 Pharmacological Intervention

All smokers attempting to quit should be offered pharmacotherapy unless contraindicated[21, Level I].

Agents recommended for pharmacotherapy are divided into:

1. Nicotine based – e.g. nicotine replacement therapies (NRT), e.g., gum, patch, lozenge and inhaler
2. Non-nicotine based – e.g. varenicline, sustained release (SR) bupropion, and nortriptyline.

Choice of a specific first-line pharmacotherapy should be guided by four main factors; efficacy, safety, suitability and cost.

NRT helps to reduce withdrawal symptoms associated with stopping smoking by replacing the nicotine from cigarettes. NRT is available as skin patches that deliver nicotine slowly, and chewing gum, inhalers/inhalators, oral mouth sprays, microtabs, nasal sprays and lozenges, all of which deliver nicotine to the brain more quickly than from skin patches, but less rapidly than from smoking cigarettes.

Evidence shows that all forms of NRT made it more likely that a person's quit attempt to succeed. The chances of stopping smoking were increased by 50 to 70%. The evidence suggests no overall difference in effectiveness between different forms of NRT[33, Level I].

NRT products work with or without additional counselling. NRT products do not need a doctor's prescription as they are Group C medications under the Poisons Act 1952. Heavier smokers usually need higher doses of NRT. People who use NRT during a quit attempt are likely to further increase their chances of success by using a combination of two NRT products. Nicotine patch with short-acting nicotine-replacement therapy (e.g., NRT gum) appears safe and increases abstinence versus nicotine-replacement monotherapy (OR=1.63, 95% CI 1.06 to 3.03) [34, Level I].

Data suggest that starting to use NRT patches shortly before the planned quit date may increase the chance of success[22, Level I].

Adverse effects from using NRT are related to the type of product, and include skin irritation from patches and irritation to the inside of the mouth from gum and lozenge. There is no evidence that NRT increases the risk of heart attacks.

- NRT provides some of the nicotine that a person would have otherwise received from tobacco, and in doing so reduces the person's urge to smoke.
- All NRT products roughly double a person's chance of stopping compared with a placebo.
- People should use NRT for at least eight to twelve weeks.
- Using two NRT products (for example, patches and gum) is more effective than using one.
- People who need NRT for longer than 12 weeks can continue to use it.
- If the person is not ready to stop smoking straight away, NRT can be used to help reduce their smoking before they stop.
- There are four different NRT products available in Malaysia, including the patch, gum, lozenges and inhalator.

Varenicline, a specific nicotine receptor partial agonist, may help people stop smoking by a combination of maintaining moderate levels of dopamine to counteract withdrawal symptoms (acting as an agonist) and reducing smoking satisfaction (acting as an antagonist). The odds of quitting were between two and three times higher with varenicline than that with placebo. Varenicline was about 50% more effective than any single formulation of NRT (patches, gum, lozenges, and inhalers), but similar in efficacy to combining two types of NRT[33, Level I].

The pooled RR from high-quality evidence for continuous or sustained abstinence at six months or longer for varenicline at standard dosage versus placebo was 2.24 (95% CI 2.06 to 2.43). Varenicline at lower or variable doses was also shown to be effective, with an RR of 2.08 (95% CI 1.56 to 2.78). The RR for varenicline versus NRT for abstinence at 24 weeks was 1.25 (95% CI 1.14 to 1.37). The pooled RR for varenicline versus bupropion at six months was 1.39 (95% CI 1.25 to 1.54) [35, Level I].

Trials which tested the use of varenicline beyond the 12-week standard regimen found the drug to be well-tolerated during long-term use. The number needed to treat with varenicline for an additional beneficial outcome, based on the weighted mean control rate, is 11 (95% CI 9 to 13)[35, Level I].

The most commonly reported adverse effect of varenicline was nausea, which was mostly at mild to moderate levels and usually subsided over time. Serious adverse events (SAE) such as neuropsychiatric occurring during or after active treatment suggests there may be a 25% increase in the chance of SAEs among people using varenicline (RR=1.25; 95% CI 1.04 to 1.49)[35, Level I].

However, subsequent observational cohort studies and meta-analyses have not confirmed these fears. The findings of the largest trial to date on varenicline and bupropion in comparison with NRT and placebo in subjects with and without psychiatric disorders do not support a causal link between varenicline and neuropsychiatric disorders, including suicidal ideation and suicidal behaviour. [36],(Anthenelli et al. 2016 Level I). Concerns have also been raised that varenicline may slightly increase cardiovascular events in people already at increased risk of those illnesses. Current evidence neither supports nor refutes such an association[35, Level I].

- Varenicline reduces a person's urge to smoke, as well as the 'reward' they get from smoking, and at least doubles a person's chance of stopping smoking.
- Before prescribing or recommending varenicline, check the contraindications and cautions that apply.
- Pregnant or breastfeeding women and people under the age of 18 cannot use varenicline.
- Patients should use it for 12 weeks.
- Common adverse effects include nausea, abnormal dreams and sleep disturbance. More serious adverse events – such as cardiovascular events, depression, suicidal ideation and suicide – have been reported, although these are uncommon.
- If someone using varenicline experiences changes in mood or behaviour, advise them to stop taking varenicline and contact a health care provider immediately.

The antidepressants bupropion and nortriptyline also aid long-term smoking cessation. The odds of quitting were about 80% higher with bupropion than with placebo. Evidence suggests that the mode of action of bupropion and nortriptyline is independent of their antidepressant effect and that they are of similar efficacy to nicotine replacement. Evidence also suggests that bupropion is less effective than varenicline, but further research is needed to confirm this finding[37, Level I]. Nortriptyline was more effective than placebo, but did not offer any additional improvement when combined with NRT. Evidence suggests that neither selective serotonin reuptake inhibitors (e.g. fluoxetine) nor monoamine oxidase inhibitors aid cessation[37, Level I].

The side effects of bupropion include insomnia, dry mouth and nausea and rarely (1:1000) seizures and perhaps psychiatric problems, but the last is unclear. There is also moderate quality evidence, limited by a relatively small number of included studies and participants, that the antidepressant nortriptyline increases quit rates (six trials, 975 participants). The side effects of nortriptyline include dry mouth, constipation, nausea, and sedation, and it can be dangerous in overdose[37, Level I].

- Bupropion is an atypical antidepressant that reduces the severity of tobacco withdrawal and approximately doubles a person's chance of stopping smoking.
- People should start bupropion at least one week before their quit date and use it for at least seven weeks.
- Before prescribing or recommending bupropion, check the contraindications and cautions that apply.
- Pregnant or breastfeeding women and people under the age of 18 cannot use bupropion.
- Common adverse effects include dry mouth, insomnia and headache. Seizure has been rarely reported and depression has been reported in some people.

There are no fixed algorithms to guide optimal selection among these first-line medications. Cost may become the predominant factor when the smoker is paying out-of-pocket, as in buying the medication from a community pharmacist or private quit smoking cessation service. Suitability factors (e.g. nature of job, preference, etc.) should be considered to fit the medication to the lifestyle of the smoker. For instance, the NRT patch is the most discreet among the NRT products since it can be worn under the clothing. Conversely, some smokers prefer an oral form of the NRT products (e.g., gum, lozenge or inhaler) since it addresses the hand and/or mouth fixation, to a certain extent, associated with smoking. Others prefer the simplicity of taking a tablet, as in the case of varenicline or bupropion.

- Nortriptyline is an antidepressant medicine that also helps people stop smoking.
- Nortriptyline reduces the severity of tobacco withdrawal symptoms and roughly doubles a person's chance of stopping smoking long term.
- People should start nortriptyline at least one week before their quit date and use it for 12 weeks. The dose should be tapered at the end of treatment to avoid withdrawal symptoms that may occur.
- Before prescribing or recommending nortriptyline, check the contraindications and cautions that apply.
- Pregnant or breastfeeding women and people under the age of 18 cannot use nortriptyline.
- Common adverse effects include drowsiness and dry mouth.

Healthcare providers should discuss the pertinent details of the available medications with each smoker (Tables 1 to 6). Some smokers may prefer to sample a few preparations before finding the one most suitable for them. NRT preferences based on explanations has been shown to change after sampling. NRT sampling may also lead to better choice and treatment compliance[38, Level II-2]).

Prior successful experience (sustained abstinence with the medication) suggests that the medication may be helpful to the patient in a subsequent quit attempt, especially if the patient finds the medication to be tolerable and/or easy to use. However, some evidence suggest that re-treating relapsed smokers with the same medication produces small or no benefit, while other evidences suggest that it may be of substantial benefit[20, Level I].

The recommended duration of treatment is 12 weeks. The use of NRT for less than 4 weeks was associated with reduced likelihood of cessation. NRT use for longer periods of time has been associated with a higher likelihood of cessation However, data suggest no overall benefit for using patches beyond eight weeks[39, Level II-2].

Dosing of each medication is detailed in Appendix 6.

Recommendation 2	**Grade of Recommendation**
All smokers who are attempting to quit should be offered pharmacotherapy, unless contraindicated.	**A**

4.3.1 Combination of pharmacological agents

Monotherapy of NRT provides lower level of plasma nicotine as compared to that produced by cigarette smoking (Fig 1.) While monotherapy has been shown to be effective in majority of smokers, others, especially those who are hard-to-treat, may require combination strategy.

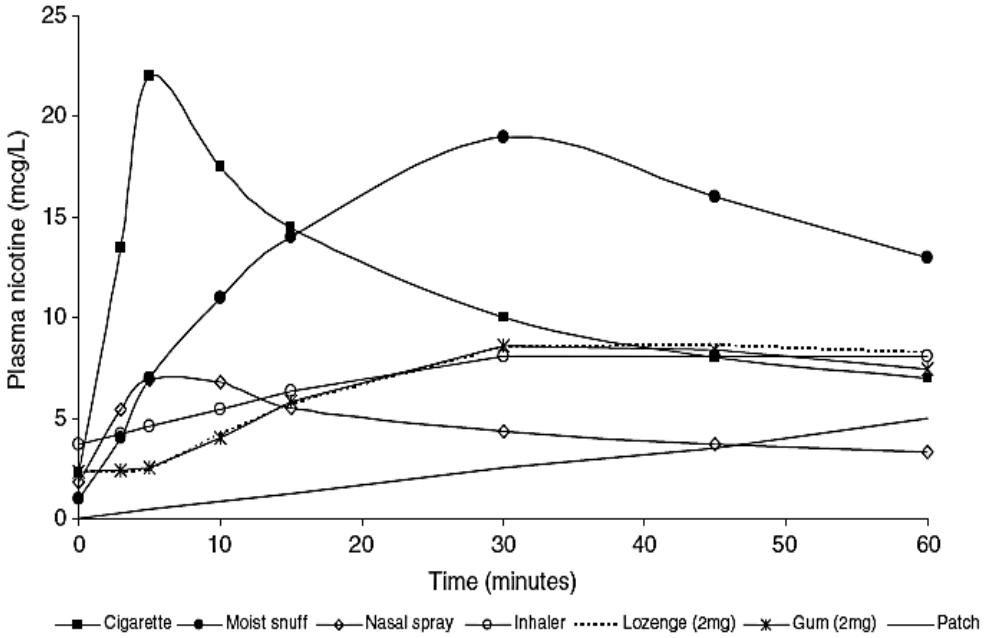

Figure 1. Plasma nicotine concentration for various nicotine containing products. Data from Fant et al. 1999[40]; Choi et al. 2003; Schneider et al. 2001[41]. (From Rx for Change: Clinician-Assisted Tobacco Cessation. The Regents of the University of California, University of Southern California and Western University of Health Sciences © 1999-2005: with permission)

Certain combinations of first-line medications have been shown to be effective smoking cessation treatment. Therefore, clinicians should consider using these combinations of medications in their patients who are willing to quit. Effective combination medications are[20, Level I]:

(1) Long-term (>14 weeks) nicotine patch + other NRT (gum and spray)
(2) Nicotine patch + nicotine inhaler
(3) Nicotine patch + bupropion SR

Strategies of combining agents available (e.g., two NRTs, a non-NRT, e.g. bupropion with a NRT) may be more efficacious. For example, combining the nicotine patch with a self - administered form of nicotine replacement therapy (either the nicotine gum or nicotine inhaler) is more efficacious than a single form of nicotine replacement, and patients should be encouraged to use such combined

treatments if they are unable to quit using a single type of first-line pharmacotherapy[42 Level I; 43; 44].

Current literature indicates that combination therapy is statistically better than monotherapy in smoking cessation treatment. Adverse effects and adherence to combination therapy are similar to monotherapy and placebo[45].

Combination therapy may be most useful for those smokers at highest risk of relapse, e.g. heavy smokers, smokers who have relapsed multiple times, or smokers with psychiatric co-morbidities. However, cost is an important consideration [46].

Combining varenicline with NRT agents has been associated with higher rates of side effects (eg nausea, headache)[20, Level I].

4.3.2 Other pharmacological agents

a) **Cytisine**

Cytisine increases the chances of quitting, although absolute quit rates were modest. Two trials of low-quality evidence involving cytisine found that more participants taking cytisine stopped smoking compared with placebo at longest follow-up, with a pooled risk ratio (RR) of 3.98 (95%CI 2.01 to 7.87). One more recent trial comparing cytisine with NRT in 1310 people found a benefit for cytisine at six months (RR=1.43, 95% CI 1.13 to 1.80)[35, Level I].

b) Anti Nicotine Vaccines

The rationale for immunization against nicotine is to induce antibodies that bind nicotine in the blood, thereby preventing it from crossing the blood brain barrier. It is postulated that with less nicotine reaching the brain immediately after smoking, the vicious cycle between smoking and nicotine related gratification will be broken. (RACGP 2011). There are no nicotine vaccines currently licensed for public use, but there are a few in development. Studies have not shown that vaccines help people to stop smoking in the long term. Trials showed nicotine vaccines to be generally safe, with most side effects being mild or moderate, including flu-like symptoms. There were no trials testing whether nicotine vaccines helped keep people who had stopped smoking from starting to smoke again[47, Level I].

4.3.3 Combination of pharmacological agents with behavioural intervention

There is high quality evidence that using a combination of behavioural support and medication increases the chances of successfully quitting after at least six months. Combined results of these studies suggest that the chance of success is increased by 70 to 100 percent compared to just brief advice or support. There was some evidence that the effect tended to be larger when participants were recruited in healthcare settings. There was no clear evidence that providing more contact increased the number of people who quit smoking at six months or longer[48, Level I].

4.4 Other Treatments and Interventions

There are many other treatments and interventions that people may ask about or want to use, such as hypnosis and acupuncture. However, there is evidence that some of these interventions do not help people to stop smoking, and for other interventions, there is insufficient evidence as to their effectiveness.

4.4.1 Hypnosis

There is evidence that hypnosis **does not** improve long-term abstinence rates over any intervention providing the same amount of time and attention to the participant[49, Level I].

4.4.2 Acupuncture

Acupuncture, acupressure, laser therapy and electrostimulation **do not** improve long-term abstinence rates over that of a placebo effect[50, Level I].

Although pooled estimates suggest possible short-term effects there is no consistent, bias-free evidence that acupuncture, acupressure, or laser therapy have a sustained benefit on smoking cessation for six months or more. However, no firm conclusions can be drawn due lack of evidence and methodological flaws. Well-designed research into acupuncture, acupressure and laser stimulation is justified since these are popular interventions and safe when correctly applied, though these interventions alone are likely to be less effective than evidence-based interventions [51, Level I].

- Hypnosis, acupuncture, acupressure, laser therapy and electrostimulation do not improve the long term abstinence rate in smoking cessation

4.4.3 Quitlines

Quitlines are defined as telephone counselling in which at least some of the contacts are initiated by the quitline counsellor to deliver tobacco use interventions, including call-back counselling. Adding Quitline counselling to pharmacotherapy and minimal intervention increases abstinence rates (RR=1.29; 95% CI 1.20 to 1.38)[52, Level I] .

These analyses suggest a robust effect of quitline counselling and are consistent with the guideline released by Centres for Disease Control and Prevention's: *Guide to Community Preventive Services* (CDC 2004).

4.4.4 Electronic cigarette / Vape

Electronic cigarette (EC) use is a very hot topic that has generated considerable global debate. ECs are electronic devices that heat a liquid into an aerosol for inhalation. The liquid usually comprises propylene glycol and glycerol, nicotine and flavours, and stored in disposable or refillable cartridges or a reservoir. In Malaysia, the term vape is used instead of EC when the liquid used is without nicotine. Since ECs appeared on the market in 2006 smokers report using ECs to reduce risks of smoking and for quitting, but some healthcare organizations, tobacco control advocacy groups and policy makers have been reluctant to encourage smokers to switch to ECs, citing lack of evidence of efficacy and safety. Furthermore, there are concerns of health hazards from the usage of electronic cigarette / vape; from nicotine poisoning, hazards of flavourings, risk of exposure to carcinogens, as well as threat to de-normalisation of smoking (WHO 2014).

Results from two earlier studies found that participants using an EC were more likely to have abstained from smoking for at least 6 months compared with participants using placebo EC (RR=2.29; 95% CI 1.05 to 4.96; placebo 4% versus EC 9%). The one study that compared EC to nicotine patch found no significant difference in six-month abstinence rates (RR=1.26; 95% CI 0.68 to 2.34). However, it was noted that these 2 studies were rated low and very low, respectively, based on GRADE standards[53, Level I].

Despite having the potential to decrease cigarette consumption, ECs role in smoking cessation remains unclear (Malas et al. 2016). A meta-analysis by Kalkhoran & Glantz (2016) showed that smokers who use ECs are 28% (OR=0·72; 95% CI 0·57 to 0·91) less likely to quit smoking compared to those who did not use them[54, Level I].

None of the included studies (short- to mid-term, up to two years) detected serious adverse events considered possibly related to EC use. The most commonly reported adverse effects were irritation of the mouth and throat. The long-term safety of ECs is still unknown[53, Level I].

4.4.5 Online smoking cessation interventions

Two studies have found that text message mobile phone support programmes are effective in the short term (6 weeks) and long term[55, Level I; 56, Level I]. Combined internet/ mobile telephone programmes can be effective for up to 12 months for assisting smokers to quit[57, Level I; 58, Level I].

Online smoking cessation interventions are low cost and have the potential to reach a large number of smokers[59, Level I; 60, Level I]. Web based programmes are a promising delivery system for assisting smokers to quit, but further research is needed to identify their most effective use.

4.4.6 Aversive smoking for smoking cessation

The existing studies provide insufficient evidence to determine the efficacy of rapid smoking, or whether there is a dose-response to aversive stimulation. Milder versions of aversive smoking seem to lack specific efficacy. Rapid smoking is an unproven method with sufficient indications of promise to warrant evaluation using modern rigorous methodology[61, Level I].

5.0 FOR PATIENTS WHO ARE UNWILLING TO QUIT

Motivational interviewing (MI) techniques may assist with smoking cessation when the health care providers are empathetic, promotes patient autonomy (e.g., choice among options), avoids arguments, and supports the patient's self-efficacy (e.g., by identifying previous successes in behaviour change efforts)[62, Level III; 63 , Level I]. Table 10 highlights the strategies that can be used in motivational interviewing technique.

Patients unwilling to make a quit attempt during a visit may be due to:

- Lack of information about the harmful effects of tobacco,
- May be demoralized because of previous relapse.
- Lack the required financial resources
- May have fears or concerns about quitting

Such patients may respond to a motivational intervention built around the "5R's": Relevance, Risks, Rewards, Roadblocks and Repetition (Table 5).

Table 4: Strategy B1. Motivational interviewing strategies

Express empathy	• Use open-ended questions to explore:
	  ○ The importance of addressing smoking or other tobacco use (e.g., "How important do you think it is for you to quit smoking?")
	  ○ Concerns and benefits of quitting (e.g., "What might happen if you quit?")
	• Use reflective listening to seek shared understanding:
	  ○ Reflect words or meaning (e.g., "So you think smoking helps you to maintain your weight.").
	  ○ Summarize (e.g., "What I have heard so far is that smoking is something you enjoy. On the other hand, your boyfriend hates your smoking, and you are worried you might develop a serious disease.").
	• Normalize feelings and concerns (e.g., "Many people worry about managing without cigarettes.").
	• Support the patient's autonomy and right to choose or reject change (e.g., "I hear you saying you are not ready to quit smoking right now. I'm here to help you when you are ready.").

Develop discrepancy	• Highlight the discrepancy between the patient's present behaviour and expressed priorities, values, and goals (e.g.,

	"It sounds like you are very devoted to your family. How do you think your smoking is affecting your children?").
	• Reinforce and support "change talk" and "commitment" language:
	  ○ "So, you realize how smoking is affecting your breathing and making it hard to keep up with your kids."
	  ○ "It's great that you are going to quit when you get through this busy time at work."
	• Build and deepen commitment to change:
	  ○ "There are effective treatments that will ease the pain of quitting, including counselling and many medication options."
	  ○ "We would like to help you avoid a stroke like the one your father had."

Roll with resistance	• Back off and use reflection when the patient expresses resistance:
	  ○ "Sounds like you are feeling pressured about your smoking."
	• Express empathy:
	  ○ "You are worried about how you would manage withdrawal symptoms."
	• Ask permission to provide information:
	  ○ "Would you like to hear about some strategies that can help you address that concern when you quit?"

Support self-efficacy	• Help the patient to identify and build on past successes:
	  ○ "So you were fairly successful the last time you tried to quit."
	• Offer options for achievable small steps toward change:
	  ○ Read about quitting benefits and strategies.
	  ○ Change smoking patterns (e.g., no smoking in the home).
	  ○ Ask the patient to share his or her ideas about quitting strategies.

Adapted from Fiore et al. 2008 [20, Level I]

Table 5: Enhancing motivation to quit tobacco—the "5 R's"

Relevance	• Encourage the patient to indicate why quitting is personally relevant, being as specific as possible. • Motivational information has the greatest impact if it is relevant to a patient's disease status or risk, family or social situation (e.g. having children in the home), health concerns, age, gender, and other important patient characteristics (e.g. prior quitting experience, personal barriers to cessation).
Risks	The clinician should ask the patient to identify potential negative consequences of tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. The clinician should emphasize that smoking low-tar/low-nicotine cigarettes or use of other forms of tobacco (e.g., smokeless tobacco, cigars, and pipes) will not eliminate these risks. Examples of risks are: **Acute risks**: Shortness of breath, exacerbation of asthma, increased risk of respiratory infections, harm to pregnancy, impotence, and infertility. **Long-term risks**: Heart attacks and strokes, lung and other cancers (e.g., larynx, oral cavity, pharynx, oesophagus, pancreas, stomach, kidney, bladder, cervix, and acute myelocytic leukemia), chronic obstructive pulmonary diseases (chronic bronchitis and emphysema), osteoporosis, long-term disability, and need for extended care. **Environmental risks**: Increased risk of lung cancer and heart disease in spouses; increased risk for low birth-weight, sudden infant death syndrome (SIDS), asthma, middle ear disease, and respiratory infections in children of smokers.
Rewards	The clinician should ask the patient to identify potential benefits of stopping tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. Examples of rewards follow: • Improved health • Food will taste better • Improved sense of smell • Saving money • Feeling better about oneself • Home, car, clothing, breath will smell better • Setting a good example for children and decreasing the likelihood that they will smoke • Having healthier babies and children • Feeling better physically

	• Performing better in physical activities • Improved appearance, including reduced wrinkling/aging of skin and whiter teeth
Road-blocks	The clinician should ask the patient to identify barriers or impediments to quitting and provide treatment (problem solving counselling, medication) that could address barriers. Typical barriers might include: • Withdrawal symptoms • Fear of failure • Weight gain • Lack of support • Depression • Enjoyment of tobacco • Being around other tobacco users • Limited knowledge of effective treatment options
Repetition	The motivational intervention should be repeated every time an unmotivated patient visits the clinic setting. Tobacco users who have failed in previous quit attempts should be told that most people make repeated quit attempts before they are successful.

Adapted from Fiore et al. 2008[20, Level I].

Recommendations 3	**Grades of Recommendations**
Motivational intervention (incorporating 5R technique – Relevance, Risks, Rewards, Roadblocks & Repetition) should be used for patients who are unwilling to make a quit attempt.	**A**

6.0 PATIENTS WHO HAVE RECENTLY QUIT (RELAPSE PREVENTION)

For smokers who have recently quit, relapse prevention intervention may focus on identifying and resolving tempting situations or smoking cues[64, Level I]. Most interventions have tried a skills-based approach, where recent quitters are taught to recognise high-risk situations and acquire the skills to withstand the temptation to smoke. However, trained health care providers should provide targeted and effective relapse prevention interventions due to the chronic relapsing nature of tobacco dependence [65, Level III; 66, Level III; 67,Level III].

When clinicians encounter a patient who has quit tobacco use recently, they should:

a. Reinforce the patient's decision to quit
b. Review with patient the benefits of quitting
c. Assist the patient in resolving any residual problems arising from quitting.

Almost all lapses occur during the first 3 months after treatment and half of those who have their first lapse smoke their second cigarette within 24 hours of the first cigarette or immediately following treatment[68, Level I]. The annual incidence of relapse was around 20% to 25%[69, Level I].

Relapse prevention interventions can be delivered by means of scheduled clinic visits, telephone calls, use of quitline or any time the clinician encounters an ex-tobacco user. There are two practices of relapse prevention, either minimal or intensive.

6.1 Minimal Practice Relapse Prevention

This is appropriate for most recent quitters and can be addressed briefly during a coincident clinic visit or a scheduled follow-up visit. Similarly, the "5 R's" strategy should be used to prevent relapse. Patients should be encouraged to report difficulties promptly (e.g. lapses, depression, medication side-effects) while continuing efforts to remain abstinent. The simple D.E.A.D. pointer technique can be applied to refrain oneself from smoking:

Delay – Deliberately delay the act of lighting up cigarette by doing something else

Escape – Escape any situation / environment that induce smoking

Avoid – Plan to avoid situation / environment that induce smoking

Distract – Distract the intention to smoke by doing relaxation techniques, housework, spending time with family, etc.

Strategy: Intervening with the patient who has recently quit

Former tobacco user should be congratulated on ANY success and strong encouragement to remain abstinent.

When encountering a recent quitter, use open-ended questions relevant to the topics below to discover if the patient wishes to discuss issues related to quitting (e.g., How has stopping tobacco use helped you?):

- The benefits, including potential health benefits, the patient may derive from cessation
- Any success the patient has had in quitting (duration of abstinence, reduction in withdrawal, etc.)
- The problems encountered or anticipated threats to maintaining abstinence (e.g. depression, weight gain, alcohol, other tobacco users in the household, significant stressors)
- A medication check-in, including effectiveness and side effects if the patient is still taking medication

Adapted from Fiore et al. 2008[20, Level I]*.*

6.2 Intensive Practice Relapse Prevention

Intensive relapse prevention components are individualized based on information obtained on what causes relapse and problems encountered by patients in maintaining abstinence. This intervention has place important in behaviour modification through imparting skills in counselling and monitoring[70, Level III]). These interventions may be delivered during a dedicated follow-up contact (in-person or by telephone) or through a specialized clinic or programme. Specific interventions recommended for problems related to maintaining smoking cessation are listed in the strategy table below. Long-term smoking cessation pharmacotherapy should be considered as a strategy to reduce the likelihood of relapse.

Strategy: Addressing problems encountered by former smokers

A patient who previously smoked might identify a problem that negatively affects health or quality of life. Specific problems likely to be reported by former smokers and potential responses follow:

Problems	Responses
Lack of support for cessation	• Schedule follow-up visits or telephone calls with the patient. • Help the patient identify sources of support within his or her environment.

	• Refer the patient to an appropriate organization that offers counselling or support.
Negative mood or depression	• If significant, provide counselling, prescribe appropriate medication, or refer the patient to a specialist.
Strong or prolonged withdrawal symptoms	• If the patient reports prolonged craving or other withdrawal symptoms, consider extending the use of an approved medication or adding/combining medications to reduce strong withdrawal symptoms.
Weight gain	• Recommend starting or increasing physical activity. • Reassure the patient that some weight gain after quitting is common and usually is self-limiting. • Emphasize the health benefits of quitting relative to the health risks of modest weight gain. • Emphasize the importance of a healthy diet and active lifestyle. • Suggest low-calorie substitutes such as sugarless chewing gum, vegetables, or mints. • Refer the patient to a nutritional counsellor or programme.
Smoking lapses	• Suggest continued use of medications, which can reduce the likelihood that a lapse will lead to a full relapse. • Encourage another quit attempt or a commitment to total abstinence. • Reassure that quitting may take multiple attempts, and use the lapse as a learning experience. • Provide or refer for intensive counselling.

Adapted from Fiore et al. 2008[20, Level I]

Recommendation 4	**Grades of Recommendations**
Effective relapse prevention interventions should be provided to all smokers who have recently quit.	**A**

7.0 SPECIAL POPULATIONS

7.1 Female Smokers

Smoking cessation clinical trials reveal that the same treatments benefit both men and women[71, Level II-2; 72, Level II-2]. However, research suggests that some treatments are less efficacious in women than in men (e.g., NRTs) [73, Level I] due to lack of documented data on smoking status among women and lack of intervention[74, Level I] as well as different brain system modulated by noradrenergic activity in women[75, Level II-2]. Women found to be less likely to stop[76, Level II-3], may have more difficulty to quit smoking[77, Level I] and less likely to be abstinent compared to men[78, Level I].

Although research shows that women benefit from the same interventions as men, women may face different stressors and barriers to quitting that should be addressed in treatment. These stressors and barriers include greater weight control concerns[79, Level II-2], hormonal cycles[80, Level II-2] and stress smoking[77, 2015 Level I]). Women who are considering pregnancy may be especially receptive to tobacco cessation.

Other documented evidence which improve female smokers to quit are social support[81, Level I], physical activity[82, Level II-2; 83, Level II-3] and customised intervention programme for women especially pregnant smokers who are coming for antenatal follow up[84, Level I].

7.2 Pregnant and Lactating Women

Smoking in pregnancy imparts risks to both the mother and the foetus. Cigarette smoking by pregnant women has been shown to cause adverse foetal outcomes, including stillbirths, spontaneous abortions, decreased foetal growth, premature births[85, Level II-2], low birth-weight, placental abruption, decrease psychomotor development[82, Level II-2] and sudden infant death syndrome (SIDS); and has been linked to cognitive, emotional, and behavioural problems in children such as hyperactivity/inattention[86, Level II; 87; Level II-2; 88, Level III].

Many women are motivated to quit during pregnancy, and health care professionals can take advantage of this motivation by reinforcing the knowledge that cessation will reduce health risks to the foetus and that there are postpartum benefits for both the mother and child. Successful quitting will not only benefit a mother's long term health by reducing the risk of disease development[89, Level II-2] and there is evidence that quitting smoking during pregnancy reduces the risk of unfavourable pregnancy outcomes[90, Level I].

Evidence shows psychosocial intervention is effective in supporting pregnant smokers to quit[91, Level I] however there is no serious side effect found for NRT use among pregnant smokers[92, Level I] and lactating smokers[93]. Intermittent, short-acting

forms of NRT, such as gum and lozenge are recommended to deliver a lower total daily nicotine dose. For lactating woman, using intermittent, short-acting forms of NRT are preferable and the woman should be advised to avoid using the products for at least one hour before breastfeeding[94, Level I].

Effective psychosocial interventions for pregnant patients
Physician advice regarding smoking-related risks (2–3 minutes); video messages with information on risks, barriers, and tips for quitting; midwife counselling in one 10-minute session; self-help manual; and follow up letters.
Pregnancy-specific self-help materials (Pregnant Woman's Self-Help Guide to Quit Smoking) and one 10-minute counselling session with a health educator.
Counsellor provided one 90-minute counselling session plus bimonthly telephone follow up calls during pregnancy and monthly telephone calls after delivery.

Adapted from Fiore et al. 2008 [20, Level I]

Recommendation 5	**Grades of Recommendations**
Offer multi-sessions behavioural smoking cessation interventions to all pregnant and breastfeeding women who smoke.	**A**

7.3 Hospitalised Smokers

Hospitalisation provides a powerful opportunity to quit smoking. It is vital that they attempt to quit smoking, as smoking may interfere with their recovery. Augmented smoking cessation treatments e.g. self-help via brochure or audio/videotape, chart, prompt reminding physician to advise smoking cessation, pharmacotherapy, hospital counselling, and post-discharge counselling telephone calls have been shown to be effective. Among cardiac patients, second heart attacks are more common in those who continue to smoke[95]. Lung, head, and neck cancer patients who are successfully treated, but who continue to smoke, are at higher risk for a second cancer[96, Level I; 97, Level II-3; 98, Level I; 99, Level I; 100; 99, Level I]. Additionally, smoking delays bone and wound healing[101; 102; 103].

Hospitalised patients may be particularly motivated to make a quit attempt for two reasons. Firstly, the illness causing the hospitalisation may have been due to or exacerbated by smoking, highlighting the patient's personal vulnerability to the health risks of smoking[104; 105]. Secondly, all hospitals in Malaysia are designated smoke-free areas[106]. Patients in long-term care facilities such as mental health

institution, old folks home, rehabilitation centres should also receive tobacco cessation interventions.

Suggested interventions for hospitalised patients are as follows:

a. Ask each patient on admission if he or she uses tobacco and document tobacco use status.
b. For current tobacco users, record tobacco use status on the admission problem list and as a discharge diagnosis.
c. Use counselling and pharmacotherapy to assist all tobacco users to maintain abstinence and to treat withdrawal symptoms accordingly.
d. Provide advice and assistance on how to quit during hospitalisation and remain abstinent after discharge.

7.4 Psychiatric Patients

Introduction

It is estimated that 11.2% of Malaysians have some form of mental illness[107, Level II-3]). Studies have shown that the prevalence of smoking amongst psychiatric patients can be as high as two to three times that of the general population[108, Level II-3; 109, Level II-1]. Often, these same smokers smoke at higher rates, on average 25 cigarettes per day[110, Level II-1]; are highly addicted and it is estimated that they consume 43.9% of all cigarettes sold in the US[111, Level II-2]. These same patients have higher health morbidity and mortality, dying 25 years earlier compared to the persons who do not smoke[112, Level II-2].

Despite these startling numbers, psychiatric patients often do not receive advice or treatment to quit smoking[19, Level II-3]. In a study, a total of 105 psychiatric patients who were identified as current smokers, only 1 patient was encouraged to quit smoking, referred for cessation treatment, and provided with nicotine replacement therapy on discharge[113, Level II-2].

Studies have shown that psychiatric patients can quit and want to quit [114; 115, Level II-3] and those who do quit often receive similar health benefits as those without psychiatric illness. The American Psychiatry Association (APA) also recommends that psychiatrists assess the smoking status of all patients, including readiness to quit, previous quitting history and level of nicotine dependence[116, Level II-2]. Therefore, it is important that **ALL** patients be asked to quit when seen in psychiatric services.

Despite the very good and extensive database on the safety and efficacy of pharmacological treatment of tobacco dependence, only a few studies have examined their use in mentally ill patients. Depression and schizophrenia have been the most studied amongst the various mental illnesses. The combination of pharmacological and behavioural measure is deemed to be the gold standard in the treatment of tobacco dependence.

A recent recommendation for all patients with mental illness who smoke from European Psychiatric Association (EPA)[117, Level III], are as follows:

1. Record the smoking status:

Smoking status should be evaluated and documented for every psychiatric patient and the degree of dependence should be documented (preferentially with the FTND).

2. Set the time of the intervention

The best time for cessation would be when the patient is in a stable phase, with no recent or planned changes in medications and no urgent problems take precedence

3. Give counselling

'5 As Intervention' is recommended for the short-term intervention by physicians. To increase the quit rate, established programmes (individual therapy, group therapy, telephone coaching) should be employed wherever available

4. Offer drug treatment with a first-line product

NRT, varenicline, bupropion should be given for even a mild degree of tobacco dependence. Attention must be paid on the severity of tobacco dependence, possible psychiatric side effects, drug-drug interactions and contraindications.

5. Contact within first days after quit day

6. Perform follow-up visits

7. Relapse prevention and management

The patient should be made aware that lapses and relapses are fine and a new attempt with different procedures (e.g. psychotherapy, medication) should be discussed with the patient.

7.4.1 Schizophrenia

There are limited smoking cessation pharmacological clinical trials conducted on persons suffering from schizophrenia. The most investigated smoking cessation pharmacological treatments are nicotine replacement therapy (NRT), sustained release bupropion (bupropion SR) and varenicline.

The effectiveness of NRT in this group of patients is unclear owing to the few trials with small sample size. One trial compared the use of high dose transdermal nicotine patch (42 mg) with regular dose transdermal nicotine patch (21 mg) in 51 patients with schizophrenia who wanted to quit smoking. In this trial, seven-day point prevalence abstinence rates at eight weeks were not significantly different between the high dose group (32%) and the regular dose group (23%)[118 , Level II-1].

Bupropion has been found to be effective for smoking cessation in schizophrenia patients. A meta-analyses[119, Level I] reported that the cessation rates after using bupropion was significantly higher than placebo at the end of treatment (seven trials, N = 340; RR=3.03; 95% CI 1.69 to 5.42) and after six months (five trials, N = 214, RR=2.78; 95% CI 1.02 to 7.58). At the end of treatment, smokers with schizophrenia who received bupropion smoked about 11 fewer cigarettes per day than those who took placebo. There were no significant differences in positive, negative and depressive symptoms between bupropion and placebo groups. There were no reports of major adverse events such as seizures with bupropion.

The effectiveness of combination of different smoking cessation treatments is unclear in treating schizophrenia. Nevertheless, a 10-week, double-blind, placebo-controlled trial of bupropion (300 mg/day) in combination with transdermal nicotine patch (21 mg/24h) for 58 outpatient smokers with schizophrenia found that the combination of bupropion and transdermal nicotine patch was well-tolerated and significantly improved short-term smoking abstinence in this group of patients[120, Level II-2]. Another small randomized controlled trial by [121, Level II-1] found that patients taking bupropion and NRT had a significant increase in smoking reduction at 3 and 6 months (60% vs. 31%; P = 0.036), and a greater continuous abstinence rate at week 8, (52% vs. 19%; P = 0.014) over patients taking placebo and NRT.

For varenicline, the information that varenicline increased smoking cessation rates higher than placebo in individuals with schizophrenia was based on two studies. These studies found that smokers with schizophrenia were nearly 5 times more likely to quit compared to placebo at the end of the treatment (N = 137; RR=4.74, 95% CI 1.34 to 16.71)[119, Level I]. This information, however, need to take into consideration that it was based on only two studies. There is no sufficient direct evidence presently to know whether the benefit of varenicline is maintained for six months or more. Nevertheless, there were no significant differences in reported psychiatric symptoms between the varenicline and placebo groups[122, Level I].

7.4.2 Depression

Depression is one of the commonest mental health conditions worldwide and is estimated to be the second leading cause of health morbidity by 2020[123, Level II-3]. Smoking and smoking cessation has been linked to both depressed mood and depression, however, the relationship is unclear.

A recent review by Gierisch (2012)[124, Level I] looking at smoking cessation interventions for patients with depression identified only 3 RCT's out of the 16 studies reviewed which included patients with current depression. This review found small, but positive findings for the use of antidepressant (RR=1.31; 95% CI 0.73 to 2.34), NRT and addition of behavioural mood management (RR=1.41; 95% CI 1.01 to 1.96).

The Cochrane group reviewed the use of antidepressants and smoking cessation and found positive results for both bupropion (44 trials and almost 13,000 participants, RR=1.62, 95% CI 1.49 to 1.76) and nortryptyline (9 trials, 975 participants, RR=2.03, 95% CI 1.48 to 2.79)[37, Level I]. Both medications increase the likelihood to quit, however, for bupropion this is seen for at least six weeks. This review did not find any added advantage of the serotonin selective reuptake inhibitors (SSRIs) as a quit smoking agent (RR = 0.93, 95% CI 0.71 to 1.22). International guidelines have suggested that individuals with depression and wanting to quit smoking can be started on these two treatments.

Varenicline has been found to be the most effective agent for smoking cessation (RR=2.31) and probably equally effective for both individuals with and without depression. Risk of suicidal behaviour has not been found to be true in the community[37, Level I]. However, caution is still recommended as a result of previous concerns.

Anxiolytics have not been found to be useful for smoking cessation.

7.4.3 Bipolar Disorder

There are only four published controlled smoking cessation treatment studies in smokers with bipolar disorder using pharmacological agents such as nicotine replacement therapy, bupropion, and varenicline.

An open-label, pilot study suggested that NRT (nicotine patch) may be an effective treatment for tobacco dependence in bipolar smokers[125, Level II-3].

One small study on smoking cessation using sustained-release bupropion involved only five patients. In this randomized, double-blind, placebo-controlled trial study, two smokers in the bupropion group either quit or reduced their smoking compared to placebo treatment which was associated with early dropout from the study and occurrence of symptoms of hypomania[126, Level I].

In a recent randomized, double-blind, placebo-controlled, parallel-group, relapse-prevention clinical trial conducted in 10 community mental-health centres, 247 smokers with schizophrenia or bipolar disorder were enrolled. Two hundred and three received 12-week treatment with varenicline and cognitive behavioural therapy or cognitive behavioural therapy alone. After a period of a year, the point-prevalence abstinence rates was 60% with varenicline treatment and 19% with placebo (OR = 6.2; 95% CI 2.2 to 19.2). Varenicline was also found to be efficacious for maintenance treatment in the study and furthermore there were no impact on psychiatric symptoms reported[127, Level I].

In another study by Chengappa et al. (2014)[128, Level I], varenicline added to CBT, tripled 4-week continuous abstinence rates at the end of a standard 12-week course

of treatment in smokers with bipolar disorder. There were significantly more subjects with bipolar who quit smoking with varenicline (n/n = 15/31, 48.4%) compared to placebo (n/n = 3/29, 10.3%) (OR=8.1; 95% CI 2.03 to 32.5) at 3 months. At 6 months, 6 of 31 varenicline-treated subjects (19.4%) remained abstinent compared to 2 of 29 (6.90%) assigned to placebo (OR=3.2; 95%CI 0.60 to 17.6). Psychopathology scores remained stable throughout the study. Ten serious adverse events occurred (N = 6, varenicline; n = 4, placebo) with the most common reported as abnormal dreams occurred significantly more often in varenicline-treated subjects (n/n = 18/31, 61.3%) than in those receiving placebo (n/n = 9/29, 31%; P = .04). Eight people treated with varenicline and 5 placebo-assigned subjects expressed fleeting suicidal ideation, a non-significant difference.

With only two published RCT adequately powered to detect treatment efficacy in this population, the data is currently inadequate to form a consensus guideline for treating nicotine dependence in people with bipolar disorder. However, as currently available treatments have been reported to be safe, all patients with bipolar should be given pharmacological aid should they want to quit smoking.

7.4.4 Substance use disorder

7.4.4.1 Alcohol use disorder

In an open trial of the transdermal nicotine replacement therapies for smoking cessation on 49 alcohol and drug-dependent patients (39/49 were alcohol dependent) who entered inpatient treatment, seven subjects (14.3%) self-reported tobacco abstinence at 21 days, and 5 (10.2%) self-reported abstinence as outpatients at 6 weeks[129, Level II-2].

There was evidence that bupropion – sustained release (bupropion-SR) is effective in helping alcohol dependent smokers to quit smoking. In an open-label, naturalistic study among alcohol dependent smokers, participant who received bupropion-SR were more likely to abstain from smoking than controls at any of the follow-up time points, reduced their smoking and smoked less cigarettes per day (CPD) at baseline, 30 days and 180 days post-baseline, compared to controls[130, Level I].

A double-blind, placebo-controlled smoking cessation study involving heavy-drinkers found that varenicline produced a sustained decrease in alcohol consumption in addition to a significant decrease in the number of cigarettes smoked[131, Level I].

An open-label, pilot study suggested that varenicline may be an effective treatment for tobacco dependence in recovering alcohol-dependent smokers[132, Level II-1].

The combination of two smoking cessation treatments had no added benefit in smokers with a dependence to alcohol based on current evidence. In a double-blind

placebo-controlled study of sustained-release bupropion with NRT as a smoking cessation aid in 58 alcohol dependent smokers, it was found that the addition of bupropion to NRT (nicotine patch) did not improve smoking outcomes. One third of participants on bupropion reported discontinuing the drug during weeks 1 to 4. All study participants however, significantly reduced cigarette use[133, Level I].

7.4.4.2 Cannabis use disorder

The co-occurrence of tobacco and cannabis use is high, however, treatments of tobacco use in this population is lacking[134, Level I]. A case series reported the use of a 12-week, 9 session computer-assisted version of Motivational Enhancement Therapy (MET), Cognitive Behavioral Therapy (CBT), and Contingency Management (CM), i.e., abstinence-based incentives aimed at both tobacco and cannabis use in those with cannabis use disorder. This programme included an optional tobacco intervention that comprised of five computer modules in a tailormade programme and NRT. All participants initiated the tobacco intervention but 50% opted to use NRT. Five out of six participants made self-reported reduction attempts during treatment (i.e., reduced cigarette use lasting at least 24 h in duration), with a mean of 4.8 attempts (range 1–8), and cigarettes per day decreased from intake to end of treatment [135, Level II-3].

Studies on co-occurring drug use and tobacco use, however, did not report worsening of symptoms when using NRTs, bupropion or varenicline and therefore all available treatments can be used[20, Level I].

7.4.4.3 Opioid use disorder in methadone maintenance treatment

In general, smoking cessation rates in methadone-maintained smokers is low. To date, only two RCT have been conducted on this group of patient. This study used a three-group randomized design, whereby it attempted to study the efficacy of varenicline versus placebo, in comparison with nicotine replacement therapy (NRT), in 315 persons methadone-maintained smokers (varenicline =137, placebo=45 and combination nicotine replacement =133). This study found that the 7-day abstinence at 6-months was 5.4% overall, with varenicline 3.7% compared to placebo 2.2%, and NRT 8.3% (p> .05). Between baseline and 6-months there was an overall self-reported mean reduction of 8.3 cigarettes/day. This study reported that quitting using NRTs to be comparable to other studies and the use of varenicline did not increase quit rates in this population[136, Level I].

In another study, 383 methadone-maintained smokers were assigned randomly to nicotine patch (8– 12 weeks) plus either (1) a baseline tailored brief motivational intervention, a quit date behavioural skills counselling session and a relapse prevention follow-up session or (2) brief advice using the National Cancer Institute's 4 As model. In this study, a tailored behavioural intervention did not increase quit rates over NRT and National Cancer Institute's 4 As model treatment[137, Level I].

Recommendation 6	Grade
For psychiatric and substance abuse disorder patients:	
• Record the smoking status of ALL patients (preferable with the Fagerstrom Test for Nicotine Dependence or carbon monoxide smokerlyzer)	**A**
• Set the time of intervention (quit date) when the patient's mental status is stable	**C**
• Provide "5 A's intervention" by trained health care providers	**C**
• Offer pharmacotherapy to ALL smokers with psychiatric condition ○ Caution should be taken when using varenicline and bupropion–NRT, bupropion, nortriptyline or varenicline	**A - B**
• Behavioural support should be provided where applicable and available	**A**

7.5 Children and Adolescents

Healthcare providers should screen paediatric and adolescent patients, and their parents, for tobacco use and exposure. Counselling and behavioural interventions that have been shown to be effective are recommended for children and adolescents [20, Level I; 138, Level II-1]. The contents of these interventions should be modified according to the age of the child[139, Level III]. When treating adolescent smokers, clinicians may consider NRT or bupropion SR when there is evidence of nicotine dependence and desire to quit[140], [Level I]. However, because of the psychosocial behavioural aspects of smoking in adolescents, clinicians should be very sure of the patient's tobacco dependence and intention to quit before instituting pharmacotherapy. Special consideration should be given to the degree of dependence, number of cigarettes per day, and body weight.

Healthcare providers in a paediatric setting should offer smoking cessation advice and interventions to parents or guardians to limit children's exposure to second-hand smoke[20, Level I].

Youth smokers of today are likely to become regular smokers of tomorrow. It is estimated that 90% of smokers start smoking before the age of 18. In Malaysia, 71% of adolescent smokers tried their first cigarette before the age of 14 year old[141, Level III]. Hence it is important to reduce the amount of tobacco use (including nicotine use in electronic cigarettes) among youth so as to decrease the rate of nicotine dependence and subsequent morbidity and mortality in future adults[142, Level II-3]. Early intervention of their nicotine dependence will increase the likelihood of them not becoming adult smokers.

Adolescents are likely to model parents' behaviour and adopt similar norms. Youth who have family members and close friends who smoke have a stronger predilection to regular smoking. The role of socio-economic and demographic factors in smoking initiation/experimentation is well documented. These factors include low socio-economic status, smoking among family and friends, low self-esteem, poor academic performances and behavioural problems [143, Level II-1]; [144, Level II-2].

Complex approaches show promise, with some persistence of abstinence (30 days point prevalence abstinence or continuous abstinence at six months), especially those incorporating elements sensitive to stage of change and using motivational enhancement and CBT. Given the episodic nature of adolescent smoking, more data is needed on sustained quitting. There were few trials with evidence about pharmacological interventions (nicotine replacement and bupropion), and none demonstrated effectiveness for adolescent smokers. There is not yet sufficient evidence to recommend widespread implementation of any one model. There continues to be a need for well-designed adequately powered randomized controlled trials of interventions for this population of smokers.

7.6 Elderly

Smoking cessation in older smokers can reduce the excess risk of cardiovascular related events and mortality even at older age[145, Level II-2].

Treatment for smoking cessation can led to similar abstinence rates in older and younger smokers[146, Level II-2]. Nonetheless, using age as a predictor for tailoring smoking cessation drugs might potentially lead to a more individualized prescription of smoking cessation therapy. For example, a study has shown that being over 60 years of age was significantly associated with increased cessation success among those who used NRT alone, while the effectiveness of varenicline and bupropion were not significantly different according to age groups.

Counselling interventions, physician advice, buddy support programmes, age-tailored self-help materials, telephone counselling, and the nicotine patch all have been shown to be effective in treating tobacco use in adults 50 and older[20, Level I]. Elderly smokers with co-morbidities and psychological distress are more likely to try to stop smoking[147, Level II-2], while older adults with low psychological distress and fewer health concerns are less likely to quit. This second group may need different sorts of motivational and educational strategies to support smoking cessation[148, Level II-2].

8.0 MANAGEMENT OF WEIGHT GAIN

For smokers who are greatly concerned about weight gain, it may be most appropriate to prescribe or recommend bupropion SR or NRT, in particular nicotine gum, which have been shown to delay weight gain after quitting[20, Level I].

Quitting smoking is often followed by weight gain hence, health professionals involved should:

i. Note that the health risks of weight gain are small when compared to the risks of continued smoking

ii. Recommend physical activities and a balanced, healthy diet to control weight

iii. Recommend that patients should concentrate primarily on smoking cessation, not weight control, until ex-smokers are confident that they will not return to smoking.

A majority of smokers gain weight after they quit smoking. Smoking cessation is associated with a mean increase of 4-5 kg in body weight after 12 months of abstinence, and most weight gain occurs within three months of quitting[149, Level I]. It has been reported that about 10% of quitters gain up to 15 kilograms[150, Level I]. However, weight gain that follows smoking cessation is a negligible health threat compared with the risks of continued smoking[151, Level I].

Weight gain that follows smoking cessation is a negligible health threat compared with the risks of continue smoking. Post-cessation weight gain appears to be caused both by increased intake and by metabolic adjustments. The involvement of metabolic mechanisms suggests that even if smokers do not increase their caloric intake upon quitting, they will, on average, gain some weight[152, Level II-1; 153, Level II-2; 154, Level II-1].

Some smoking cessation pharmacological treatments may also have limited weight gain. Bupropion, fluoxetine, NRT and varenicline all limit weight gain during treatment however, the effects on weight gain reduction were smaller after the treatment had stopped and there was insufficient evidence to be sure that these effects persisted in the long-term[155, Level I; 156; Level I].

9.0 IMPLEMENTING THE GUIDELINES

It is essential to manage the treatment of tobacco use disorder at all healthcare levels in Malaysia by using an evidence-based CPG. This aims to increase the success rate for tobacco users to beat their nicotine addiction.

9.1 Facilitating and Limiting Factors

Existing facilitators for application of the recommendations in the CPG include:-

i. wide dissemination of the CPG to healthcare providers (hardcopies and softcopies)
ii. training and regular update for healthcare providers

Existing barriers for application of the recommendations of the CPG are:-

i. inadequate understanding of evidence-based treatment of tobacco use
ii. insufficient resources especially trained personnel, pharmacotherapy and infrastructure
iii. variation in treatment practice and preferences

9.2 Potential Resource Implications

To implement the CPG, there must be strong commitment to:-

i. ensure widespread distribution of the CPG to healthcare providers
ii. initiate training (with adequate funding) of healthcare providers ensuring information is up-to-date
iii. ensure availability of dedicated management team and trained including multidisciplinary team at different levels of healthcare where appropriate
iv. ensure widespread distribution of updated patient education materials

Implementation strategies such as Quick Reference and Training Module will be developed following the approval of the CPG by MoH.

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GLOSSARY

Abstinence. Smokers who remain smoking free at follow-up of at least 6 months after quitting date.

Bupropion SR (bupropion sustained-release). A non-nicotine aid to smoking cessation originally developed and marketed as an antidepressant. It is chemically unrelated to tricyclics, tetracyclics, selective serotonin re-uptake inhibitors, or other known antidepressant medications. Its mechanism of action is presumed to be mediated through its capacity to block the re-uptake of dopamine and norepinephrine centrally.

Clinician. A professional directly providing health care services.

Extra-treatment social support component. Interventions or elements of an intervention wherein patients are provided with tools or assistance in obtaining social support outside of treatment. This category is distinct from intra-treatment social support, in which social support is delivered directly by treatment staff.

First-line pharmacotherapy for tobacco dependence. First-line pharmacotherapies have been found to be safe and effective for tobacco dependence treatment and have been approved by the FDA for this use. First-line medications have established empirical record of efficacy, and should be considered first as part of tobacco dependence treatment except in cases of contraindications.

Intensive Clinical Intervention. Refers to interventions that involve extended contact between clinicians and patients. It was coded based on the length of contact between clinicians and patients (greater than 10 minutes). If that information was unavailable, it was coded based on the content of the contact between clinicians and patients.

Intra-treatment social support. Refers to an intervention component that is intended to provide encouragement, a sense of concern, and interested empathic listening as part of the treatment.

Low-intensity counselling. Low-intensity counselling refers to interventions that involve contact between clinicians and patients and that last between 3 and 10 minutes. If the information on length of contact was unavailable, it was coded based on the description of content of the clinical intervention.

Brief Clinical Intervention. Brief clinical intervention refers to interventions that involve very brief contact between clinicians and patients. It was coded based on the length of contact between clinicians and patients (3 minutes or less). If that information was unavailable, it was coded based on the content of the clinical intervention.

Motivation. A type of intervention designed to bolster patients' resolve to quit through manipulations such as setting a quit date, use of a contract with a specified quit date, reinforcing correspondence (letters mailed from clinical/study staff congratulating the patient on his or her decision to quit or on early success), providing information about the health risks of smoking, and so on.

Nicotine replacement therapy (NRT). Refers to a medication containing nicotine that is intended to promote smoking cessation. There are a few nicotine replacement therapy delivery systems currently approved for use in Malaysia. These include nicotine chewing gum, nicotine inhaler and nicotine patch, nicotine nasal spray.

Person-to-person intervention. In-person, or face -to-face, contact between a clinician and a patient(s) for the purpose of tobacco use intervention or assessment.

Practical counselling (problem solving/skills training). Refers to a tobacco use treatment in which tobacco users are trained to identify and cope with events or problems that increase the likelihood of their tobacco use. For example, quitters might be trained to anticipate stressful events and to use coping skills such as distraction or deep breathing to cope with an urge to smoke. Related and similar interventions are coping skill training, relapse prevention, and stress management.

Primary care clinician. A clinician (e.g., in medicine, nursing, psychology, pharmacology, dentistry/oral health, physical, occupational, and respiratory therapy) who provides basic health care services for problems other than tobacco use per se. Primary care providers are encouraged to identify tobacco users and to intervene, regardless of whether tobacco use is the patient's presenting problem.

Proactive telephone counselling. Treatment initiated by a clinician who telephones and counsels the patient over the telephone.

Psychosocial interventions. Refers to intervention strategies that are designed to increase tobacco abstinence rates due to psychological or social support mechanisms. These interventions comprise such treatment strategies as counselling, self-help, and behavioural treatment like rapid smoking and contingency contracting.

Quit date. The date of a given cessation attempt during which a patient tries to abstain totally from tobacco use. Also, refers to a motivational intervention, whereby a patient commits to quit tobacco use on a specified day.

Randomised controlled trial. For the purposes of this guideline, a study in which subjects are assigned to conditions on the basis of chance, and where at least one of the conditions is a control or comparison condition.

Second-hand smoke is a combination of side-stream cigarette smoke and the exhaled main-stream smoke. Those who are exposed to second hand smoke for 15 minutes in two days within a week is defined as second-hand smokers.

Second-line pharmacotherapy for tobacco dependence. Second-line medications are pharmacotherapies for which there is evidence of efficacy for treating tobacco dependence, but they have a more limited role than first-line medications because: (1) the FDA has not approved them for a tobacco dependence treatment indication, and (2) there are more concerns about potential side effects than exist with first-line medications. Second-line treatments should be considered for use on a case-by-case basis after first-line treatments have been used or considered.

Self-help. An intervention strategy in which the patient uses a non-pharmacologic physical aid to achieve abstinence from tobacco. Self -help strategies typically involve little contact with a clinician, although some strategies (e.g., hotline/helpline) involve patient-initiated contact. Examples of types of self-help materials include: pamphlets / booklets / mailings / manuals; videos; audios; referrals to 12-step programmes; mass media community-level interventions; lists of community programmes; reactive telephone hotlines/helplines; and computer programmes/Internet.

Smokeless tobacco. Any used form of unburned tobacco, including chewing tobacco, snuff and also electronic cigarette.

Specialized assessments. Refers to assessment of patient characteristics, such as nicotine dependence and motivation for quitting, that may allow clinicians to tailor interventions to the needs of the individual patient.

Weight/diet/nutrition component. An intervention strategy designed to address weight gain or concerns about weight gain. Interventions that teach diet/weight management strategies, incorporate wee kly weight monitoring (for reasons other than routine data collection), require or suggest energy intake maintenance/reduction, and/or convey nutritional information/counselling.

Appendix 1

EXAMPLE OF SEARCH STRATEGY

The following MeSH terms or free text terms were used either singly or in combination, search was limit to English and human:

Pubmed:

((((((((((nicotine) OR tobacco) AND nicotine replacement) OR varenicline) OR Nortriptyline) OR bupropion) OR brief advice) OR motivational interviewing) AND smoking cessation) AND ((Clinical Trial[ptyp] OR Review[ptyp]) AND Humans[Mesh]))) AND brief intervention

Ovid:

1 nicotine.tw.

2 tobacco.tw.

3 nicotine replacement.tw.

4 varenicline.tw.

5 bupropion.tw.

6 Nortriptyline.tw.

7 brief advice.tw.

8 motivational interviewing.tw.

9 brief intervention.tw.

10 smoking cessation.tw.

11 1 or 2

12 3 or 4 or 5 or 6 or 7 or 8 or 9

13 10 and 11 and 12

14 limit 13 to English

15 limit 13 to human

Cochrane Database of Systemic Reviews (CDSR):

#1 MeSH descriptor: [Nicotine] explode all trees

#2 MeSH descriptor: [Tobacco] explode all trees

Appendix 2

CLINICAL QUESTIONS

1. What are the assessment used in screening tobacco user?
2. Is brief clinical intervention effective in managing tobacco use disorder?
3. Is intensive clinical intervention effective in managing tobacco use disorder?
4. What are the effective/safe non-pharmacological treatments in managing tobacco use disorder?
5. What are the effective/safe pharmacological treatments in managing tobacco use disorder?
6. Is Hypnosis/ Acupuncture/ Quitlines/ Electronic cigarette / Vape/ Online smoking cessation interventions/ Aversive smoking effective/safe in managing tobacco use disorder?
7. What are the effective/safe treatments in managing tobacco use disorder patients who unwilling to quit smoking?
8. What are the effective/safe treatments in managing tobacco use disorder patients who recently quit smoking?
9. What are the effective/safe treatments in pregnant/lactating women with tobacco use disorder?
10. What are the effective/safe treatments in hospitalized patients with tobacco use disorder?
11. What are the effective/safe treatments in psychiatric patients with tobacco use disorder?
12. What are the effective/safe treatments in schizophrenia with tobacco use disorder?
13. What are the effective/safe treatments in depression with tobacco use disorder?
14. What are the effective/safe treatments in bipolar disorder with tobacco use disorder?
15. What are the effective/safe treatments in tobacco use disorder who have substance misuse (alcohol/ opioid/ cannabis)?
16. What are the effective/safe treatments in children and adolescents with tobacco use disorder?
17. What are the drug-drug interactions in the treatment of tobacco use disorder with other co-morbidities?

Appendix 3

Modified Fagerström Test for Cigarette Dependence (English version)

1. **How soon after you wake up do you smoke your first cigarette?**
   - □ Within 5 minutes (3 points)
   - □ 5 to 30 minutes (2 points)
   - □ 31 to 60 minutes (1 point)
   - □ After 60 minutes (0 points)

2. **Do you find it difficult not to smoke in places where you shouldn't, such as in church or school, in a movie, at the library, on a bus, in court or in a hospital?**
   - □ Yes (1 point)
   - □ No (0 points)

3. **Which cigarette would you most hate to give up;which cigarette do you treasure the most?**
   - □ The first one in the morning (1 point)
   - □ Any other one (0 points)

4. **How many cigarettes do you smoke each day?**
   - □ 10 or fewer (0 points)
   - □ 11 to 20 (1 point)
   - □ 21 to 30 (2 points)
   - □ 31 or more (3 points)

5. **Do you smoke more during the first few hours after waking up than during the rest of the day?**
   - □ Yes (1 point)
   - □ No (0 points)

6. **Do you still smoke if you are so sick that you are in bed most of the day, or if you have a cold or the flu and have trouble breathing?**
   - □ Yes (1 point)
   - □ No (0 points)

Scoring: 7 to 10 points = highly dependent; 4 to 6 points = moderately dependent; less than 4 points =minimally dependent.

Modified Fagerström test for evaluating intensity of physical dependence on nicotine. Adapted with permission from Heatherton TF, Kozlowski LT, Frecker RC, Fagerström KO. The Fagerström test for nicotine dependence: a revision of the Fagerström Tolerance Questionnaire. Br J Addict 1991;86:1119-27.

Versi Bahasa Malaysia

Ujian Fagerstrom Untuk Ketagihan Nikotin

Adakah merokok “hanya satu tabiat” atau “adakah anda ketagih?” Sila jalani ujian ini untuk mengetahui tahap ketagihan nikotin anda.

1. **Selepas bangun dari tidur, bilakah anda menghisap rokok pertama anda?**
   - Dalam masa 5 minit (3 mata)
   - 6-30 minit (2 mata)
   - 31 – 60 minit (1 mata)
   - Selepas 60 minit (0 mata)

2. **Adakah anda berasa sukar untuk menahan diri dari merokok di kawasan larangan merokok?**
   - Ya (1 mata)
   - Tidak (0 mata)

3. **Waktu merokok yang mana satu paling sukar untuk dielakkan ?**
   - Yang pertama pada waktu pagi (1 mata)
   - Yang lain (0 mata)

4. **Berapa batang rokok yang anda hisap dalam sehari?**
   - 10 atau kurang (0 mata)
   - 11 - 20 (1 mata)
   - 21 - 30 (2 mata)
   - 31 atau lebih (3 mata)

5. **Adakah anda merokok lebih kerap semasa beberapa jam pertama selepas bangun dari tidur berbanding pada waktu lain?**
   - Ya (1 mata)
   - Tidak (0 mata)

6. **Adakah anda merokok meskipun ketika anda sakit dan terlantar di katil sepanjang hari**
   - Ya (1 mata)
   - Tidak (0 mata)

Tandakan markah dan jumlahkan kesemuanya

Markah anda:
0-2 ketagihan sangat rendah
3-4 ketagihan rendah
5 ketagihan sederhana
6-7 ketagihan tinggi
8-10 ketagihan sangat tinggi

Tahap ketagihan nikotin anda ialah:

Markah kurang daripada 5:
“Tahap ketagihan nikotin anda masih rendah. Anda perlu bertindak sekarang sebelum tahap ketagihan meningkat.”

Markah ialah 5:
“Tahap ketagihan nikotin anda adalah sederhana. Jika anda tidak berhenti segara, tahap ketagihan nikotin anda akan meningkat sehingga anda mungkin mengalami ketagihan yang serius. Bertindak sekarang untuk menghentikan ketagihan nikotin anda.”

Markah lebih daripada 7:
“ Tahap ketagihan anda adalah tinggi. Anda tidak dapat mengawal tabiat merokok anda- sebaliknya ia mengawal anda! Apabila anda membuat keputusan untuk berhenti, mungkin anda mahu bertanya kepada doktor anda mengenai terapi penggantian nikotin atau ubat-ubatan lain untuk membantu anda mengatasi ketagihan anda.”

Adapted with permission from: Anne Yee HA, Ng CG, Rusdi AR. 2011. Validation of the Malay version of Fagerstrom test for nicotine dependence (FTND-M) among a group of male staffs in a University Hospital. Malaysian Journal of Psychiatry 20(1).

Appendix 4

NCSCT CLINICAL CHECKLISTS

Introduction

The National Centre for Smoking Cessation and Training (NCSCT) has identified the knowledge and skills that smoking cessation practitioners need for effective behavioural support during individual face-to-face smoking cessation interventions.

Using the clinical checklists

The NCSCT clinical checklists have been divided into sections, which correspond to the sessions outlined in the Standard Treatment Programme. They are designed to allow practitioners to 'build' their portfolio of skills, and can be used as a memory aid when seeing smokers or as a learning tool when observing other practitioners.

Standard Treatment Programme

Clinical Checklist: Pre-quit Assessment (Session 1)

- Assess current readiness and ability to quit
- Inform the client about the treatment programme
- Assess current smoking
- Assess past quit attempt
- Explain how tobacco dependence develops and assess nicotine dependence
- Explain and conduct carbon monoxide (CO) monitoring
- Explain the importance of abrupt cessation and the 'not a puff' rule
- Inform the client about withdrawal symptoms
- Discuss stop smoking medication
- Set the Quit Date
- Prompt a commitment from the client
- Discuss preparations and provide a summary

Communication skills used throughout this session:

- Boost motivation and self-efficacy
- Build rapport
- Use reflective listening
- Provide reassurance

This session also covers general preparations for quitting and it should aim to enhance motivation and boost self confidence throughout.

Clinical Checklist: Quit Date

- Confirm readiness and ability to quit
- Confirm that the client has sufficient supply of medication and discuss expectations of medication
- Discuss withdrawal symptoms and cravings / urges to smoke and how to deal with them
- Advise on changing routine
- Discuss how to address the issue of the client's smoking contacts and how the client can get support during their quit attempt
- Address any potential high risk situations in the coming week
- Conduct carbon monoxide (CO) monitoring
- Confirm the importance of abrupt cessation
- Prompt a commitment from the client
- Discuss plans and provide a summary
- Boost motivation and self-efficacy
- Build rapport
- Use reflective listening
- Provide reassurance

Communication skills used throughout this session:

This session also covers strategies for avoiding smoking and should aim to enhance motivation and boost self-confidence throughout.

Clinical Checklist: 1, 2, 3 weeks' post Quit Date

- Check on client's progress
- Measure carbon monoxide (CO)
- Enquire about medication use and ensure that the client has a sufficient supply
- Discuss any withdrawal symptoms and cravings / urges to smoke that the client has experienced and how they dealt with them
- Discuss any difficult situations experienced and methods of coping
- Addressing any potential high risk situations in the coming week
- Confirm the importance of the 'not a puff' rule and prompt a commitment from the client
- Provide a summary
- Boost motivation and self-efficacy
- Build rapport
- Use reflective listening
- Provide reassurance

Communication skills used throughout this session:

This session also covers strategies for avoiding smoking and it should aim to enhance motivation and boost self-confidence throughout.

Clinical Checklist: 4 weeks' post Quit Date

- Check on client's progress
- Measure carbon monoxide (CO)
- Advise about continued medication use and ensuring that the client knows where to obtain further supplies
- Discuss any withdrawal symptoms and cravings / urges to smoke that the client has experienced and how they dealt with them
- Discuss any difficult situations experienced and methods of coping and address any potential high risk situations in the future (i.e. stressful situations that they have not experienced over the past four weeks)
- Confirm the importance of the 'not a puff' rule and prompt a commitment from the client
- Advise about how to access additional support if needed
- Advise about what to do if the client lapses (i.e. before relapsing)
- Provide a summary

Communication skills used throughout this session:

- Boost motivation and self-efficacy
- Build rapport
- Use reflective listening
- Provide reassurance

This session also covers strategies for avoiding smoking in the long term and it should aim to enhance motivation, boost self-confidence and promote the ex-smoker identity throughout (McEwen, A. 2012).

Appendix 5

ABC for Smoking Cessation

Ask	Ask about and document smoking status for all people (for those who smoke or have recently stopped smoking, smoking status should be checked and updated on a regular basis). For example, you could ask: 'Do you currently smoke cigarettes?'
Brief Advice	1. Provide advice to all people who smoke. For example, you could say: 'You may know the risks involved with smoking, but do you realise how harmful it is? I cannot stress enough how important it is to stop smoking. Stopping is the best thing that you can do to improve your health. I understand that it can be hard to stop smoking, but if you want to, I can help you.' 2. Personalise the advice (for example, if relevant explain how smoking is related to existing health problems and how stopping smoking might help). Highlight the benefits of quitting. 3. Acknowledge that some people make several attempts to quit before stopping for good. 4. Document that advice was given.
Cessation Support	There are two options for providing cessation support. 1. Refer: Health care workers *without* the expertise or time to help people to stop smoking should refer smokers to smoking cessation services. **2.** Provide support: Health care workers who are able to provide support should do so. Support can include setting a quit date; advising the smoker that complete abstinence from smoking is best; arranging medication to aid the quit attempt and arranging for a follow-up consultation within a week. Assessment of the degree of nicotine dependence helps guide treatment.

Adapted from: New Zealand Smoking Cessation Guidelines 2007

Appendix 6

Clinical Use of Pharmacotherapy in Treatment of Tobacco Use Disorder

Table 6: Clinical Use of Nicotine Gum

Patient selection	Appropriate as a first-line pharmacotherapy for smoking cessation.
Precautions	Pregnancy: Pregnant smokers should be encouraged to quit first without pharmacologic treatment. Nicotine gum should be used during pregnancy only if the increased likelihood of smoking abstinence, with its potential benefits, outweighs the risk of nicotine replacement and potential concomitant smoking. Similar factors should be considered in lactating women (FDA Class D) – see Appendix 7. Cardiovascular diseases: NRT is not an independent risk factor for acute myocardial events, but it should be used with caution among certain cardiovascular patient groups: those in the immediate (within 1 to 2 weeks) post myocardial infarction period, those with serious arrhythmias, and those with serious or worsening angina pectoris.
Side effects.	Common side effects of nicotine chewing gum include mouth soreness, hiccups, dyspepsia, and jaw ache. These effects are generally mild and transient, and often can be alleviated by correcting the patient's chewing technique (see prescribing instructions below).
Dosage	Nicotine gum is available in 2 mg and 4 mg (per piece) doses. The 2 mg gum is recommended for patients smoking less than 20 cigarettes per day, while the 4 mg gum is recommended for patients smoking 20 or more cigarettes per day. Generally, the gum should be used for up to 12 weeks with no more than 24 pieces/day. Clinicians should tailor the dosage and duration of therapy to fit the needs of each patient.
Availability	Nicorette 2 and 4 mg
Prescribing instructions	Chewing technique: Gum should be chewed slowly until a peppery or minty taste emerges, then parked between cheek and gum to facilitate nicotine absorption through the oral mucosa. Gum should be slowly and intermittently chewed and parked for about 30 minutes or until the taste dissipates. – see Appendix 8. Absorption: Eating and drinking anything except water should be avoided for 15 minutes before and during chewing as acidic beverages (e.g., coffee, juices, and soft drinks)

	interfere with the buccal absorption of nicotine. Scheduling of dose: Patients often do not use enough gum to get the maximum benefit: they chew too few pieces per day and they do not use the gum for a sufficient number of weeks. Do not eat or drink while gum is in the mouth. Instructions to chew the gum on a fixed schedule (at least one piece every 1-2 hours during waking hours) for at least 1-3 months may be more beneficial than when necessary.

Table 7: Clinical Use of Nicotine Patch

Patient selection	Appropriate as a first-line pharmacotherapy for smoking cessation.
Precautions	Pregnancy: Pregnant smokers should be encouraged to quit first without pharmacological treatment. The nicotine patch should be used during pregnancy only if the increased likelihood of smoking abstinence, with its potential benefits, outweighs the risk of nicotine replacement and potential concomitant smoking. Similar factors should be considered in lactating women. (FDA Class D) Cardiovascular diseases. As per gum
Side effects	Skin reactions. Up to 50% of patients using the nicotine patch will have a local skin reaction. Skin reactions are usually mild and self-limiting, but may worsen over the course of therapy. Local treatment with hydrocortisone cream (1%) or triamcinolone cream (0.5%) and rotating patch sites may reduce such local reactions. In less than 5% of patients, such reactions require the discontinuation of nicotine patch treatment. Other side effect: Insomnia.
Dosage	Treatment of at least 8 weeks has been shown to be as efficacious as longer treatment periods. 16- and 24-hour patches are of comparable efficacy. Clinicians should consider individualizing treatment based on specific patient characteristics such as previous experience with the patch, amount smoked, degree of addictiveness, etc. Finally, clinicians should consider starting treatment on a lower patch dose in patients smoking 10 or fewer cigarettes per day.
Availability	Niquitin (21, 14 and 7 mg, respectively), Nicorette 25,15 and 10 mg

Niquitin®	If smoking 10 cigarettes or more a day, start with Step 1 (21 mg) and gradually move to step 2 (14 mg) after 6 weeks and then step 3 (7 mg) for 2 weeks, as directed on pack over 10 weeks. If smoking less than 10 cigarettes a day, start at Step 2 and follow the 8 week programme described on the pack.
Nicorette®	15 mg x 8 weeks, then 10 mg x 2 weeks and finally 5 mg x 2 weeks
Prescribing instructions	Location. The patient should place a new patch on a relatively hairless location, typically between the neck and waist, usually upper arm or shoulder. Rotate and avoid using the same site of application for about 1 week (see **Appendix 9**). Activities : No restriction while using the patch Time: Patches may be applied as soon as the patient wakes up. In patients who experience sleep disruption, advise the patient to remove the 24- hour patch prior to bedtime or use the 16-hour patch. Smokers with time-to-first cigarette (TTFC) of 30 minutes or less may benefit from putting the patch immediately before sleeping, so that the plasma nicotine level is highest upon waking up 6 to 8 hours post application of the patch. Remove the patch after 16 or 24 hours.

Table 8: Clinical Use of Nicotine Inhaler

Patient selection	Appropriate as a first-line pharmacotherapy for smoking cessation.
Precautions	Pregnancy and cardiovascular diseases. As for nicotine gum.
Side effects	Local irritation reactions: Local irritation in the mouth and throat was observed in 40% of patients using the nicotine inhaler. Coughing and rhinitis occur in 32% and 23%, respectively. Severity was generally rated as mild, and the frequency of such symptoms declined with continued use.
Dosage	A dose from the nicotine inhaler consists of a puff or inhalation. Each cartridge delivers 4 mg of nicotine over 80 inhalations. Recommended dosage is 6-16 cartridges/day. Recommended duration of therapy is up to 6 months. Instruct patient to taper dosage during the final 3 months of treatment.

Availability	4 mg/cartridge
Prescribing	Ambient temperature: The inhaler and cartridges should be kept at room temperature. Duration: Use is recommended for up to 6 months with gradual reduction in frequency of use over the last 6-12 weeks of treatment. Absorption: Acidic beverages (e.g., coffee, juices, and soft drinks) interfere with the buccal absorption of nicotine, so eating and drinking anything except water should be avoided for 15 minutes before and during inhalation. Best effects: Best effects are achieved by frequent puffing.

Table 9: Clinical Use of Nicotine Lozenge

Patient selection	Appropriate as a first-line pharmacotherapy for smoking cessation. As an aid to smoking cessation, by treatment of tobacco dependence through the relief of nicotine withdrawal symptoms, including cravings.
Precautions	DM, MI, severe dysrhythmia or CVA. Active oesophagitis, oral or pharyngeal inflammation, gastritis, gastric or peptic ulcer. Moderate to severe renal/hepatic impairment. Children <18 yr. Pregnancy
Side effects	Nausea, vomiting, dyspepsia, upper abdominal pain, diarrhoea, dry mouth, constipation, hiccups, stomatitis, flatulence, oral discomfort; headache, dizziness, tremor; sleep disorders eg insomnia & abnormal dreams, nervousness; palpitations; pharyngitis, cough, pharyngolaryngeal pain, dyspnoea; increased sweating; arthralgia, myalgia; application site reactions, chest pain, pain in limb, asthenia, fatigue.
Dosage	*2 mg and 4 mg*
Prescribing instruction	Up to 2 mg (smoker of <20 cigarettes/day) or 4 mg (smoker of ≥20 cigarettes/day). **Stepwise treatment for abrupt cessation:** Week 1-6: 1 lozenge 1-2 hourly. Min: 9 lozenge/day. Week 7-9: 1 lozenge 2-4 hourly. Week 10-12: 1 lozenge 4-8 hourly. Max: 15 lozenge/day. Max duration: 24 wk.

	Gradual cessation: Use a lozenge when there is a strong urge to smoke. Max: 15 lozenge/day. Lozenge should not be chewed or swallowed. Do not eat or drink while lozenge is in the mouth.

Table 10: Clinical Use of Varenicline

Patient selection	Appropriate as a first-line pharmacotherapy for smoking cessation. Use in pregnancy: There are no adequate data from the use of varenicline in pregnant women. Studies in animals have shown reproductive toxicity. The potential risk for humans is unknown. Varenicline should not be used during pregnancy (FDA Category C)
Precautions	Effect of Smoking Cessation: Physiological changes resulting from smoking cessation, with or without treatment with varenicline, may alter the pharmacokinetics or pharmacodynamics of some medicinal products, for which dosage adjustment may be necessary (examples include theophylline, warfarin and insulin). As smoking induces CYP1A2, smoking cessation may result in an increase of plasma levels of CYP1A2 substrates. Smoking cessation, with or without pharmacotherapy, has been associated with the exacerbation of underlying psychiatric illness (e.g. depression). Care should be taken with patients with a history of psychiatric illness and patients should be advised accordingly. There is no clinical experience with varenicline in patients with epilepsy. At the end of treatment, discontinuation of varenicline was associated with an increase in irritability, urge to smoke, depression, and/or insomnia in up to 3% of patients. The prescriber should inform the patient accordingly and discuss or consider the need for dose tapering. Depressed mood may be a symptom of nicotine withdrawal. Depression, rarely including suicidal ideation and suicide attempt, has been reported in patients undergoing a smoking cessation attempt. These symptoms have also been reported while attempting to quit smoking with varenicline. Clinicians should be aware of the possible emergence of significant depressive symptomatology in patients undergoing a smoking cessation attempt, and should advise patients accordingly. Effects on the Ability to Drive or Operate Machinery: Varenicline may have minor or moderate influence on the

	ability to drive and use machines. Varenicline may cause dizziness and somnolence and therefore may influence the ability to drive and use machines. Patients are advised not to drive, operate complex machinery or engage in other potentially hazardous activities until it is known whether varenicline affects their ability to perform these activities. Use in lactation: It is unknown whether varenicline is excreted in human breast milk. Animal studies suggest that varenicline is excreted in breast milk. A decision on whether to continue / discontinue breastfeeding or to continue / discontinue therapy with varenicline should be made taking into account the benefit of breastfeeding to the child and the benefit of varenicline therapy to the woman.
Side effects	In general, when adverse reactions occurred, onset was in the 1st week of therapy; severity was generally mild to moderate and there were no differences by age, race or gender with regard to the incidence of adverse reactions. In patients treated with the recommended dose of 1 mg twice daily following an initial titration period, the adverse event most commonly reported was nausea (28.6%). In the majority of cases, nausea occurred early in the treatment period which was mild to moderate in severity and seldom resulted in discontinuation. The treatment discontinuation rate due to adverse events was 11.4% for varenicline compared with 9.7% for placebo. In this group, the discontinuation rates for the most common adverse events in varenicline-treated patients were as follows: Nausea (2.7% vs 0.6% for placebo), headache (0.6% vs 1% for placebo), insomnia (1.3% vs 1.2% for placebo) and abnormal dreams (0.2% vs 0.2% for placebo). In the following text, all adverse reactions, which occurred at an incidence greater than placebo are listed by system organ class and frequency [very common (≥1/10), common (≥1/100 to <1/10), uncommon (≥1/1000 to <1/100) and rare (≥1/10,000 to <1/1000)]. Within each frequency grouping, undesirable effects are presented in order of decreasing seriousness. Infections and Infestations: Uncommon: Bronchitis, nasopharyngitis, sinusitis, fungal infection, viral infection. Metabolism and Nutrition Disorders: Common: Increased appetite. Uncommon: Anorexia, decreased appetite, polydipsia. Psychiatric Disorders: Very Common: Abnormal dreams, insomnia. Uncommon: Panic reaction, bradyphrenia, abnormal thinking, mood swings. Nervous System Disorders: Very Common: Headache. Common: Somnolence, dizziness, dysgeusia. Uncommon:

	Tremor, abnormal coordination, dysarthria, hypertonia, restlessness, dysphoria, hypoaesthesia, hypogeusia, lethargy, increased or decreased libido. Cardiac Disorders: Uncommon: Atrial fibrillation, palpitations. Eye Disorders: Uncommon: Scotoma, scleral discolouration, eye pain, mydriasis, photophobia, myopia, increased lacrimation. Ear and Labyrinth Disorders: Uncommon: Tinnitus. Respiratory, Thoracic and Mediastinal Disorders: Uncommon: Dyspnoea, cough, hoarseness, pharyngolaryngeal pain, throat irritation, respiratory tract congestion, sinus congestion, postnasal drip, rhinorrhoea, snoring. Gastrointestinal Disorders: Very Common: Nausea. Common: Vomiting, constipation, diarrhoea, abdominal distension, stomach discomfort, dyspepsia, flatulence, dry mouth. Uncommon: Haematemesis, haematochezia, gastritis, gastroesophageal reflux disease, abdominal pain, change in bowel habit, abnormal faeces, eructation, aphthous stomatitis, gingival pain, coated tongue. Skin and Subcutaneous Tissue Disorders: Uncommon: Generalised rash, erythema, pruritus, acne, hyperhidrosis, night sweats. Musculoskeletal and Connective Tissue Disorders: Uncommon: Joint stiffness, muscle spasms, chest wall pain, and costochondritis. Renal and Urinary Disorders: Uncommon: Glycosuria, nocturia, polyuria. Reproductive System and Breast Disorders: Uncommon: Menorrhagia, vaginal discharge, sexual dysfunction. General Disorders and Administration Site Conditions: Common: Fatigue. Uncommon: Chest discomfort, chest pain, pyrexia, feeling cold, asthenia, circadian rhythm sleep disorder, malaise, cyst. Investigations: Uncommon: Increased blood pressure, electrocardiogram ST-segment depression, decreased electrocardiogram T-wave amplitude, increased heart rate, abnormal liver function test, decreased platelet count, increased weight, abnormal semen, increased C-reactive protein, decreased blood calcium. Post-marketing cases of myocardial infarction, depression and suicidal ideation have been reported in patients taking varenicline.

Dosage	The recommended dose is 1 mg varenicline twice daily following a 1-week titration as follows: Days 1-3: 0.5 mg once daily; Days 4-7: 0.5 mg twice daily; Day 8-end of treatment: 1 mg twice daily. Patients who cannot tolerate adverse effects of varenicline may have the dose temporarily or permanently lowered to 0.5 mg twice daily. Patients with Renal Insufficiency: No dosage adjustment is necessary for patients with mild (estimated creatinine clearance >50 mL/min and ≤80 mL/min) to moderate (estimated creatinine clearance ≥30 mL/min and ≤50 mL/min) renal impairment. For patients with moderate renal impairment who experience adverse events that are not tolerable, dosing may be reduced to 1 mg once daily. For patients with severe renal impairment (estimated creatinine clearance <30 mL/min), the recommended dose is 1 mg once daily. Dosing should begin at 0.5 mg once daily for the first 3 days then increased to 1 mg once daily. Based on insufficient clinical experience in patients with end-stage renal disease, treatment is not recommended in this patient population. Patients with Hepatic Impairment: No dosage adjustment is necessary for patients with hepatic impairment. Elderly: No dosage adjustment is necessary for elderly patients. However, since elderly patients are more likely to have decreased renal function, prescribers should consider the renal status of an elderly patient. Children: varenicline is not recommended for use in children or adolescents <18 years due to insufficient data on safety and efficacy.
Prescribing instruction	The patient should set a date to stop smoking. Dosing should start 1-2 weeks before this date. Tablets should be swallowed whole with water, can be taken with or without food, but incidence of nausea increases when taken on an empty stomach. Patients should be treated for 12 weeks. For patients who have successfully stopped smoking at the end of 12 weeks, an additional course of 12 weeks treatment with 1 mg twice daily may be considered. No data are available on the efficacy of an additional 12 weeks course of treatment for patients who do not succeed in stopping smoking during initial therapy or who relapse after treatment.

	In smoking cessation therapy, risk for relapse to smoking is elevated in the period immediately following the end of treatment. In patients with a high risk of relapse, dose tapering may be considered. When varenicline and transdermal NRT were co-administered to smokers for 12 days, there was a statistically significant decrease in average systolic blood pressure (mean 2.6 mmHg) measured on the final day of the study. In this study, the incidence of nausea, headache, vomiting, dizziness, dyspepsia, and fatigue was greater for the combination than for NRT alone.

Table 11: Clinical Use of Bupropion

Patient selection	Appropriate as a first-line pharmacotherapy for smoking cessation.
Precautions	Pregnant smokers should be encouraged to quit first without pharmacologic treatment. Bupropion SR should be used during pregnancy only if the increased likelihood of smoking abstinence, with its potential benefits, outweighs the risk of bupropion SR treatment and potential concomitant smoking (FDA Category C). Similar factors should be considered in lactating women (FDA Class B). Cardiovascular diseases: Generally well tolerated; infrequent reports of hypertension. Side effects: The most common side effects reported by bupropion SR users were insomnia (35-40%) and dry mouth (10%). Contraindications: Bupropion SR is contraindicated in individuals with a history of seizure disorder, a history of an eating disorder, who are using another form of bupropion (Wellbutrin SR) or who have used an MAO inhibitor in the past 14 days. Close monitoring of patients for clinical worsening, emergence of suicidality, agitation, irritability & unusual changes in behaviour. Patient with history of seizure, cranial trauma or other predisposition toward seizure, or patients taking seizure threshold-lowering agents.

	Excessive use or abrupt discontinuation of alcohol or sedatives. Renal or hepatic impairment including mild to moderate & severe liver cirrhosis. Patients w/ a recent history of MI or unstable heart disease. False +ve urine immunoassay screening tests for amphetamines. May affect ability to drive or operate machinery.
Dosage	Patients should begin with a dose of 150 mg q AM for 3 days, then increase to 150 mg b.i.d. Dosing at 150 mg b.i.d. should continue for 7-12 weeks following the quit date. Unlike nicotine replacement products, patients should begin bupropion SR treatment 1-2 weeks before they quit smoking. For maintenance therapy, consider bupropion SR 150 mg b.i.d. for up to 6 months.
Availability	Pregnant smokers should be encouraged to quit first without pharmacologic treatment. Bupropion SR should be used during pregnancy only if the increased likelihood of smoking abstinence, with its potential benefits, outweighs the risk of bupropion SR treatment and potential concomitant smoking (FDA Category C). Similar factors should be considered in lactating women (FDA Class B). Cardiovascular diseases: Generally well tolerated; infrequent reports of hypertension. Side effects: The most common side effects reported by bupropion SR users were insomnia (35-40%), headache (25-34%) and dry mouth (10%). Contraindications: Bupropion SR is contraindicated in individuals with a history of seizure disorder, a history of an eating disorder, who are using another form of bupropion (Wellbutrin SR) or who have used an MAO inhibitor in the past 14 days. Close monitoring of patients for clinical worsening, emergence of suicidality, agitation, irritability & unusual changes in behaviour. Patient with history of seizure, cranial trauma or other predisposition toward seizure, or patients taking seizure threshold-lowering agents. Excessive use or abrupt discontinuation of alcohol or sedatives. Renal or hepatic impairment including mild to moderate & severe liver cirrhosis. Patients w/ a recent history of MI or unstable heart disease. False +ve urine immunoassay screening tests for amphetamines. May

	affect ability to drive or operate machinery.
Prescribing instructions	Appropriate as a first-line pharmacotherapy for smoking cessation. Scheduling of dose: if insomnia is marked, take the PM dose earlier (in the afternoon, at least 8 hours after the first dose) may provide some relief.

Appendix 7

FDA Pregnancy Class

Category	Description
A	Medicines are considered safe to be used throughout pregnancy. Medicines have been taken by a large number of pregnant women and women of childbearing age without any proven increase in the frequency of malformations or other direct or indirect harmful effects on the foetus.
B	Medicines which have been taken by only a limited number of pregnant women and women of childbearing age, without an increase in the frequency of malformation or other direct or indirect harmful effects on the human foetus. Studies in animals have not shown evidence of an increased occurrence of foetal damage, or are inadequate or may be lacking, but available data show no evidence of an increased occurrence of foetal damage, or there are evidence of an increased occurrence of foetal damage, but the significance of which is considered uncertain in humans.
C	Medicines which have caused or may be suspected of causing harmful effects on the human foetus or newborn infant without causing malformations. These effects may be reversible. Medicines must only be given only if the potential benefits justify the potential risk to the foetus.
D	Medicines that have caused, are suspected to have caused or may be expected to cause an increased incidence of human foetal malformations or irreversible damage. The use is warranted only in life-threatening situation or for a serious disease for which safer medicines cannot be used or ineffective.
X	Medicines which have such a high risk of causing permanent damage to the foetus that they should not be used in pregnancy or when there is a possibility of pregnancy.

Appendix 8

NICOTINE GUM CHEWING TECHNIQUE

CORRECT WAY TO USE THE GUM

CHEW
Chew the gum slowly until peppery/minty taste becomes strong after about 10 chews

REST
Rest the gum between your gum and cheek

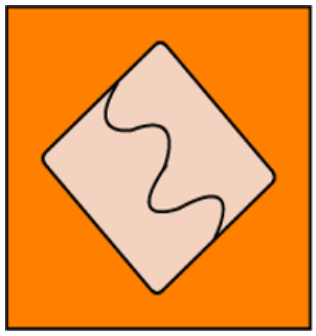
CHEW
Start chewing again when taste has faded

After about 30 minutes discard it properly

Adapted with permission from Johnson & Johnson Sdn. Bhd.

Appendix 9

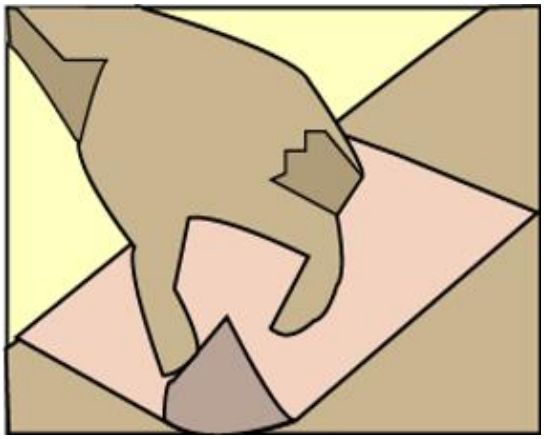
HOW TO USE THE NICOTINE PATCH



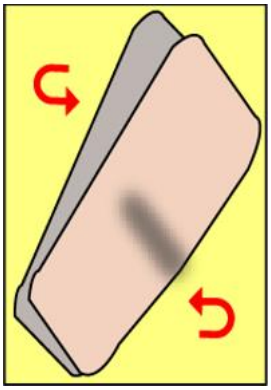
1. **Remove seal at the back of the nicotine patch**

2. **Put the patch on your arm or hip (non-hairy area). Rotate and avoid using the same site of application for at least 1 week**

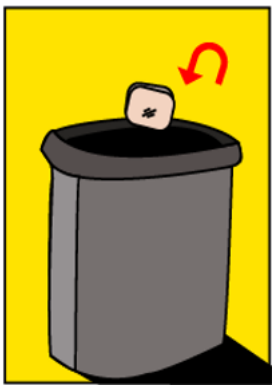
3. **Leave it on for about 16 hours (during waking hours)**



4. **Peel off the patch**



6. **Fold it before discarding it safely**



5. **Next day, put the patch on a diferent side (DO NOT use the same side for at least 1 week)**

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No one held any shares in pharmaceutical firms or acts as consultants to such firms. (Details are available upon request from the CPG Secretariat)

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