



# Clinical guidelines and procedures for the management of nicotine dependent inpatients

## 1. Guiding principles

The Smoke Free WA Health Policy aims to minimise exposure to Environmental Tobacco Smoke (ETS) for visitors, patients, staff, contractors and volunteers across all Department of Health premises<sup>2</sup>.

The purpose of this document is to provide WA Health with guidance on how to support WA Health patients to manage their nicotine dependence while in a smoke free environment. It also provides guidance on how to provide advice and support to patients who would like to make a quit attempt which extends beyond their stay in hospital.

Pharmacological treatment of nicotine addiction withdrawal symptoms in hospitalised smokers potentially improves patient comfort, increases compliance with hospital smoke free policies and promotes smoking cessation after discharge<sup>3</sup>.

The interests of non-smokers and of those trying to quit, recently quit or thinking of quitting must absolutely be considered and these interests are served best by a strict, yet compassionate approach to smoke free policies.

All clinical staff shall have a shared responsibility for supporting patients in complying with the Smoke Free WA Health Policy.

## 2. Guideline

### 2.1 Assessment

All patients admitted to hospital shall be asked about their smoking status via the Admission Assessment Tool in their unit. Smoking status shall be recorded on patient records, discharge summaries and referral forms by noting the relevant International Classification of Disease (ICD-10) code for tobacco use.

#### World Health Organisation ICD-10 codes

Current Tobacco Use is coded as Z72.0 (excluding tobacco dependence).

Mental and Behavioural Disorders due to Tobacco are coded as:

- F17.1 for harmful use
- F17.2 for dependence syndrome
- F17.3 for withdrawal state

Following the identification of patients that smoke, the health professional shall determine the suitability of the patient to receive nicotine replacement therapy (NRT) by using the Fagerstrom Test for nicotine dependence ([Appendix 3](#)).

## 2.2 Nicotine withdrawal

The symptoms of nicotine withdrawal include 2 or more of the following within 24 hours of cessation or reduction in nicotine intake<sup>4</sup>:

- anxiety
- irritability or restlessness
- reduced concentration
- craving for tobacco (or other nicotine-containing products)
- malaise or weakness
- increased cough
- dysphoric mood
- mouth ulceration
- increased appetite
- insomnia

These symptoms of withdrawal cause clinically significant distress, are not due to a general medical condition and are not better accounted for by another mental disorder<sup>5</sup>.

## 2.3 Management of nicotine dependent inpatients

Please read in conjunction with the [Flowchart –Management of Nicotine Dependent Inpatients \(Appendix 2\)](#)

### 2.3.1 Nicotine Replacement Therapy

Effective management of nicotine dependent inpatients will depend to a large extent on the timeliness of management of withdrawal symptoms with NRT. The elimination half-life of nicotine is <2 hrs, which means that many patients will seek to smoke unless withdrawal symptoms can be prevented via timely and regular provision of NRT. NRT aims to replace some of the nicotine obtained from cigarettes, thus reducing withdrawal symptoms when stopping smoking.

The nurse/ midwife may initiate NRT via Nurse/ Midwife-Initiated Medication protocol for eligible patients, subject to medical review. Medical officers, nurses and midwives share responsibility to review the patient for ongoing withdrawal symptoms and NRT medication. Clinical staff shall advise patients of the correct ways to use NRT (refer to [Appendix 4 Nicotine Replacement Therapy Product Information](#) which can be distributed to patients).

Clinical staff shall consider combination pharmacotherapy for all patients. Combination pharmacotherapy is the provision of fast acting products (such as gum, lozenge or inhaler) to combine with the patch. It can enhance chances of quitting and is appropriate if the patient continues to experience withdrawal symptoms or has difficulty abstaining from smoking while on the nicotine patch<sup>6</sup>. (Refer to [Appendix 4](#) for NRT product information)

For patients who indicate they are not ready to give up smoking completely, clinical staff shall still offer NRT. Evidence suggests that using a nicotine patch whilst smoking either as a 'pre quit' tool or to 'cut down to stop' can improve rates of success<sup>6-7</sup>. Carbon monoxide monitors, that measure expired carbon monoxide levels, are useful to demonstrate to the patient the reduction in their smoking and to verify that progress<sup>8</sup>.

See [Smoke Free WA Health System Policy - Guidelines for the management of nicotine withdrawal and cessation support in nicotine dependent patients](#).

Smokers who are ready to cease smoking can access up to 12 weeks of government subsidised nicotine replacement therapy per year through the PBS. This includes 15mg and 21mg patches. All clinical staff shall advise patients to discuss access to NRT on the PBS with their GP. For more information on eligibility criteria visit [www.pbs.gov.au/](http://www.pbs.gov.au/)

### **2.3.2 Other pharmacotherapies**

Pharmacotherapies for smoking cessation that are not NRT may only be prescribed to patients by a medical officer. The two most effective forms of non-nicotine pharmacotherapies, Bupropion and Varenicline are summarized below. In most cases these medications will be initiated by the patients General Practitioner but they may be considered as treatments in advance of surgery where smoking status is identified in the pre-admission clinic setting.

#### **Bupropion**

Bupropion (Zyban) is an oral non-nicotine therapy which affects neuronal re-uptake of noradrenalin and dopamine. The active ingredient in this medication is also present in certain anti-depressant medications. Bupropion reduces withdrawal symptoms and has found to be of similar efficacy to NRT <sup>9</sup>. In the community, Bupropion is available as a [Pharmaceutical Benefits Scheme \(PBS\)](#) Authority item for the treatment of nicotine dependence in those who are committed to quitting smoking, when used in conjunction with counselling for smoking cessation/ abstinence. Please refer carefully to the product information or discuss with the pharmacist for further information as many patients in the hospital setting may not be suitable for this treatment.

#### **Varenicline**

Varenicline (Champix) was developed specifically to help people stop smoking. Varenicline works by binding to nicotine receptors in the reward centres in the brain. In doing so, it reduces the severity of tobacco withdrawal symptoms while simultaneously reducing the rewarding effects of nicotine. Varenicline is on the [PBS](#) as an authority item for people in a comprehensive support and counselling program for smoking cessation. Varenicline at standard dose increased the chances of successful long-term smoking cessation between two- and threefold compared with pharmacologically unassisted quit attempts <sup>10</sup>. There are reports of psychiatric adverse events with the use of Varenicline and health professionals should discuss this with their patient and report adverse events when they occur <sup>11</sup>. Please refer to the product information or discuss with the pharmacist for further information.

### **2.3.2 Drug interactions with smoking cessation**

When patients stop smoking (with or without NRT), health professionals shall carefully review prescribed medication and adjust or monitor drugs whose metabolism is affected by smoking cessation.

Drug information sources contain varying reports of the effect of smoking. The table in [Appendix 1](#) provides a list of common medications which may need a reduction upon smoking cessation.

Many drug interactions have been identified with tobacco smoke. In most cases it is the tobacco smoke, not the nicotine, which causes the drug interactions. Products in tobacco smoke induce the hepatic cytochrome P450 enzymes and increase drug clearance in smokers. NRT does not contribute to the drug interactions through this effect. However, nicotine can counter the pharmacologic actions of certain drugs, because it activates the sympathetic nervous system <sup>12 13 14</sup>.

## 2.4 Roles of clinical staff

All clinical staff shall complete the [Online Brief Tobacco Intervention Training](http://ndri.curtin.edu.au/btip/) (available from <http://ndri.curtin.edu.au/btip/>), developed by the National Drug Research Institute for Smoke Free WA Health, to achieve competency in brief intervention and motivational interviewing.

Clinical staff shall be familiar with the actions outlined in “Section 2.6” for managing specific patient groups or settings.

### Nurse and midwife roles:

- Ask patients if they are a current smoker or have recently quit.
- If yes, follow the [Flow Chart – Management of Nicotine Dependent Inpatients \(nurse/midwife initiated\) \(Appendix 2\)](#).
- If no, inform patients of the Smoke Free WA Health Policy and ask they advise those who visit them whilst in hospital that the grounds are smoke free.

**NB:** Medication Competent Enrolled Nurses may administer nurse/ midwife-initiated NRT if approved by their hospital Drug Committee as long as they have checked with their supervising registered nurse, prior to administration, that the medication is appropriate and safe. Refer to the [Flow Chart in Appendix 2](#) for a list of those excluded from nurse/midwife-initiated NRT.

### Medical Officer roles:

- Understand the role of nurses and midwives in the management of nicotine dependent inpatients and recognise the points of care requiring intervention by a medical officer (as outlined in the [Flow Chart in Appendix 2](#)).
- Review and prescribe appropriate NRT within 24 hours of nurse/ midwife-initiated NRT.
- Assess all patients with contraindications to nurse/ midwife-initiated NRT and prescribe appropriate NRT.
- Monitor patient withdrawal and adjust medication accordingly.
- Ensure smoking status is recorded on patient records, discharge summaries and referral forms by noting the relevant International Classification of Disease (ICD-10) code for tobacco use.
- Include reference to NRT administered as part of the patient discharge plan and provide a minimum of 7 days NRT upon discharge.

### Pharmacist roles:

- Provide the ward with appropriate smoking cessation pharmacotherapies.
- Be involved with patient medication reconciliation.
- Provide advice to other clinical staff regarding nicotine withdrawal and smoking cessation pharmacotherapies.
- Arrange discharge advice for patients regarding ongoing smoking cessation pharmacotherapy options, where possible.

## 2.5 Engaging patients to comply with the Smoke Free WA Health Policy

Non-compliance with the policy by patients and visitors is to be dealt with in an educative and non-confrontational manner.

All clinical staff have a responsibility to ensure patients experiencing nicotine withdrawal are appropriately managed so they have the necessary support to comply with the Policy.

See [Guidelines for Management, Compliance and Enforcement of the Smoke Free WA Health System Policy](#).

## 2.6 Specific patient groups or settings

### Pregnant women and NRT

- Ideally, smoking cessation during pregnancy shall be achieved without NRT. However for women unable to quit on their own, NRT shall be offered as the risk to the fetus is lower than tobacco smoking <sup>15</sup>. Intermittent dosing products (i.e. lozenges, gum and inhalers) are preferable as these deliver nicotine only as required and avoid the constant nicotine release from patches.
- In those circumstances where the woman is unable to quit using intermittent dosing products, a medical officer can assess for the safe use of patches.
- Nicotine can have an adverse effect on labour and fetal heart rate. Therefore, women presenting in labour shall be assessed for nicotine dependence and offered NRT as required during the labour and reviewed for ongoing therapy post partum.

Smoking during pregnancy is associated with risks such as unhealthy birth weight, premature birth or stillbirth <sup>15</sup>. The antenatal phase provides opportunities for the early identification and assessment of smokers and smoking cessation advice and support <sup>16</sup>. The earlier abstinence is achieved during pregnancy the better <sup>15</sup>.

### Breastfeeding and NRT

- Intermittent dosing products (i.e. lozenge, gum and inhalers) shall be used while breastfeeding.<sup>17</sup> The delivery of nicotine to infants via breast milk is unpredictable and depends upon the serum concentration of nicotine in the mother and rate of milk production. Although nicotine is concentrated in breast milk, oral as opposed to inhaled nicotine is substantially metabolised by the liver before entering the blood of the infant. Staff shall be aware of the potential side effects of nicotine on infants and review the mother's NRT treatment if symptoms attributable to NRT occur. Symptoms of mild nicotine toxicity in children include nausea, vomiting, diarrhoea, increased salivation, pallor (from peripheral vasoconstriction), excessive sweating, weakness, and dizziness<sup>18</sup>. Possible strategies to minimise the amount of nicotine in breast milk may be to prolong the duration between NRT administration and breastfeeding (ideally 2-3 hours)<sup>19</sup>.

Nicotine from both smoking and NRT is found in breast milk. However, the small amount of nicotine the infant receives from NRT is relatively lower and less hazardous than that from smoking <sup>17</sup>.

**Precaution:** Lactating mothers of pre-term infants are excluded from nurse/midwife-initiated NRT and should be referred to a medical officer.

### Children and adolescents and NRT

- The levels of nicotine in NRT are not suitable for children under 12. Children are likely to be affected by nicotine and it could cause severe toxicity, which can be fatal.

**Contraindication:** NRT should not be used for patients under 12 years of age.

- Data is limited in relation to the value of NRT use in young people (over 12 years and under 18 years) where the demand for cessation products and the motivation to quit is low<sup>20</sup>. Nevertheless NRT is safe in this group. NRT shall only be used by adolescents in conjunction with a counselling program. Counselling is needed in this age group because NRT is likely to be ineffective in the absence of counselling<sup>1</sup>.

**Precaution:** Patients under 18 years of age are excluded from nurse/ midwife-initiated NRT and should be referred to a medical officer.

## Cardiovascular disease and NRT

- NRT typically produces much lower peak arterial concentrations than smoking and so has less intense cardiovascular effects. Clinical trials of NRT in patients with underlying stable cardiovascular disease suggest that nicotine does not increase cardiovascular risk and can be used safely by smokers with less severe cardiovascular disease<sup>21 22 23</sup>.

**Precaution:** Those with severe arrhythmias, refractory angina or recent (within 4 weeks) myocardial infarction or unstable angina are excluded from nurse/ midwife initiated NRT and should be referred to a medical officer.

## Diabetics and NRT

- Patients with diabetes mellitus shall be advised to monitor their sugar levels more closely than usual when NRT is initiated as catecholamines released by nicotine can affect carbohydrate metabolism and vasoconstriction may delay/reduce insulin absorption<sup>1</sup>.

## Mental health co-morbidity

- Smoking interacts with some medications by increasing metabolic rate, making medications pass through the system more quickly (see [Appendix 1: Common medication interactions with smoking cessation](#)). Health professionals shall carefully monitor and adjust prescribed medications during smoking cessation. Combination therapy for NRT should be offered.

## Patients with a Fagerstrom Test score 5+

- It is recommended that moderate to heavily nicotine dependent patients (i.e. those who score 5+ on the [Fagerstrom Test – Appendix 3](#)) be screened and/or monitored for depression. These patients may require combination therapy of two forms of NRT in order to prevent symptoms of nicotine withdrawal.

## Aboriginal patients

- Aboriginal people have a complex series of underlying historical and social issues to take into consideration when considering present day smoking.
- Aboriginal patients shall be informed of the Smoke Free Health WA Policy in a culturally secure manner with emphasis on why the hospital is smoke free.
- Additional time and resources may be required to ensure Aboriginal patients are informed of the policy and consent to NRT if required.
- English may not be the first language of many Aboriginal patients who shall require access to interpreters where appropriate.
- Aboriginal Health Workers and/or Aboriginal Liaison Officers based at the hospitals shall be accessed to assist in communicating the Smoke Free Policy.
- It may be culturally appropriate to involve the family in the process.
- Culturally appropriate pamphlets shall be available when outlining the Smoke Free Policy. (currently under development – visit [www.health.wa.gov.au/smokefree](http://www.health.wa.gov.au/smokefree) to check availability)

### Culturally and Linguistically Diverse (CALD) patients

- A CALD client's social, mental, physical and spiritual well-being factors need to be taken into account when addressing health related issues.
- CALD clients shall be informed of the Smoke-free WA Health Policy in a culturally secure manner.
- Culturally appropriate visual imagery, DVD'S, information leaflets, pictures and symbol forms should be utilised to communicate the Smoke Free Policy to CALD patients.
- Interpreters must be used at all times when communicating with CALD patients and an appropriate time line established. Interpreters may be accessed via telephone or on site in some hospitals.
- A whole of family approach may be necessary to empower and engage the client and maximise conformity to the Smoke Fee Policy.
- Clinical staff shall have clear knowledge of the Hospital Policy for communication with CALD patients.

### Parents or guardians of paediatric patients

- Parents or guardians of paediatric patients shall be informed of the Smoke-free WA Health Policy.
- Those who smoke shall be provided with advice on how to manage their nicotine withdrawal or cravings whilst on WA Health grounds.
- Further information on where to access smoking cessation support in the community shall be provided. This includes information on accessing NRT on the PBS.

### Elective surgery and preadmission clinics

- At preadmission, patients who are current or recent smokers shall be identified.
- They shall be informed they are coming into a smoke free hospital and encouraged to stop smoking immediately (or as soon as possible). They can be provided with:
  - Smoke Free WA Health: Advice for Patients brochure
  - Smoking and Surgery brochure
  - Quit Kit
- Interventions should begin four to six weeks prior to surgery and address issues that relate to the patient's particular health issues e.g. wound healing, infection rates, post-operative complications and disease progression<sup>24</sup>.
- Clinical staff shall advise patients to use pharmacotherapy in their quit attempt, and seek the advice of their GP, pharmacist, or anaesthetist.
- Patients shall also be advised to make use of counselling services such as Quitline (13 7848).

Patients who smoke in the weeks prior to surgery have increased risk of postoperative complications, wound infections and wound rupture compared with non smokers<sup>24</sup>. Interventions involving the use of pharmacotherapy, including NRT, are more likely to have an impact on complications and long term smoking cessation<sup>24</sup>.

## **Emergency Department (ED)**

- Patients attending EDs shall be advised of the Smoke Free WA Health Policy.
- All clinical staff in ED shall be familiar with the roles, processes and resources outlined in the [Flowchart – Summary for Inpatient Management of Nicotine Dependence \(nurse/midwife-initiated\) \(Appendix 2\)](#)
- All clinical staff in ED shall manage patients' nicotine dependence according to current guidelines.
- If the patient requires NRT and is unlikely to be admitted, intermittent NRT (gum, lozenge or inhaler) is appropriate first line therapy.
- For patients likely to be admitted, consider patch and intermittent NRT PRN as first line therapy.

## **3. Evaluation**

Monitoring and evaluation is an important component of the Smoke Free WA Health System Policy. Snapshot ward audits and patient surveys will provide monitoring of management of nicotine dependent inpatients. Please see our [Evaluation](#) page for more information including the report of the independent state wide smoke free evaluation conducted in August 2008.

## **4. Abbreviations**

<b>CALD</b>	Culturally and linguistically diverse
<b>ED</b>	Emergency Department
<b>ETS</b>	Environmental Tobacco Smoke
<b>ICD-10</b>	International Classification of Disease
<b>NRT</b>	Nicotine Replacement Therapy
<b>PBS</b>	Pharmaceutical Benefits Scheme

## **5. Appendices**

1. Common medication interactions with smoking cessation
2. Flowchart – Summary for Inpatient Management of Nicotine Dependence (nurse/midwife-initiated)
3. Fagerstrom Test
4. NRT Product Information
5. NRT – Nicotine Replacement Therapy
6. Nicotine Withdrawal Management Plan

## 6. References

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## Appendices

### Appendix 1: Common medication interactions with smoking cessation

<b>Smoking cessation may result in increased levels of:</b>	
<b>Drug</b>	<b>Mechanism and effect</b>
<b>Cardiovascular drugs</b>	
Propranolol	Smoking increases clearance. Closely monitor for adverse events
Verapamil	Smoking increases clearance. Closely monitor dose.
Warfarin	Dose reduction of 14-23% needed. Closely monitor INR
Mexiletine, Flecainide, Lignocaine	Dosage may need to be decreased
<b>Benzodiazepines</b>	
Diazepam	Smoking increases clearance. Monitor for increased sedation post cessation of smoking
Other benzodiazepines	Smoking may increase clearance. Monitor for increased sedation
<b>Antipsychotics</b>	
Clozapine Olanzapine	Smoking increases clearance. Dose reduction may be needed to avoid toxicity.
Haloperidol	Smoking increases clearance. Monitor.
<b>Antidepressants</b>	
Fluvoxamine	Smoking increases clearance. Monitor for adverse events post smoking cessation
Tricyclic antidepressants	Smoking may increase clearance. Monitor
<b>Alzheimers</b>	
Rivastigmine	Smoking increases clearance. Decreased dose may be needed.
Tacrine	Smoking increases clearance. Decreased dose may be needed.
<b>Antidiabetic</b>	
Insulin	Smoking may reduce subcutaneous insulin absorption. Post smoking cessation monitor BSLs. May need dose reduction
Oral hypoglycaemics	Nicotine may increase plasma glucose. Monitor BSLs. May need dose reduction.
<b>Respiratory</b>	
Theophylline	Decrease in clearance after smoking cessation. Closely monitor levels and adjust dose accordingly.
<b>Other</b>	
Caffeine	Increased caffeine levels post smoking cessation. Recommend reduced caffeine intake post smoking cessation.

Source: Zevin & Benowitz 1999<sup>12</sup>, Kroon 2007<sup>13</sup> and Schaffer et al 2009<sup>14</sup>

## Appendix 2

### Flow Chart –Management of Nicotine Dependent Inpatients (nurse/ midwife-initiated)

#### 1. Assess smoking status via admission assessment tool and record smoking status using relevant ICD-10 code for tobacco use

- Never smoked or ex-smoker (> 6 months since last cigarette) – Encourage continued abstinence
- Current smoker or recently quit – Follow steps 2 – 7

#### 2. Inform patient of the Smoke Free WA Health System Policy and provide them with a Smoke Free Advice for Patients brochure

#### 3. Complete Fagerstrom Test for all current and recent smokers

#### 4. Offer eligible patients NRT according to their level of dependence

Discuss previous quit attempts with patient – this may assist in determining appropriate NRT.  
Explore 'cut down then stop' methods for patients who are not ready to stop smoking completely.  
Offer Nicotine Replacement Therapy Factsheet.

#### Excluded patients from nurse-initiated NRT

Contraindicated (NRT should <u>not</u> be used)	Precaution (Medical Officer consultation required)
Non smokers	Under 18 years
Children under 12 years	Gastrointestinal disease
Those with hypersensitivity to nicotine	Acute myocardial infarction, unstable or worsening angina, severe cardiac arrhythmias
Phenylketonurics (should not use lozenge)	• Recent or planned coronary angioplasty, bypass graft or stenting
Menthol hypersensitivity (should not use inhaler)	Peripheral vascular disease
	Renal & hepatic impairment
	Recent cerebrovascular accident
	Patients in intensive care unit or critical care unit
	Mothers of preterm infants
	Lactating mothers

• Recent is defined as within the last 4 weeks

#### NRT dosing for eligible patients

Dependence Level	Nicotine Replacement Therapy: Combination therapy
High Fagerstrom score = 5+	<b>Patch:</b> 21mg/24hr or 15mg/16hr AND <b>*Lozenge or Gum:</b> 2mg or <b>inhaler</b>
Moderate Fagerstrom score = 4	<b>Patch:</b> 21mg/24hr or 15mg/16 hr AND <b>*Lozenge or Gum:</b> 2mg or <b>inhaler</b>
Low to Moderate Fagerstrom score = 3	<b>Patch:</b> 14mg/24hr or 10mg/16hr AND <b>*Lozenge or gum:</b> 2mg or <b>inhaler</b>
Low Fagerstrom score = 1-2	<b>May not need NRT</b> Monitor for withdrawal symptoms <b>Patch:</b> 7mg/24 hr or 5mg/16hr OR <b>Lozenge:</b> 2mg OR <b>Gum:</b> 2mg

\*Maximum of 12 lozenges or gum per 24hrs when combined with patch.  
Minimum recommended is 4 per 24hrs if experiencing breakthrough cravings<sup>1</sup>.

#### 5. Monitor signs and symptoms of withdrawal and review dosing if symptoms persist

The Nicotine Withdrawal Management Plan can be used for monitoring.

For patients with a Fagerstrom Test score 5+ and patients experiencing breakthrough cravings with combination NRT, consider the use of 2<sup>nd</sup> patch and continue supplementary NRT.

#### 6. Review by Medical Officer (within 24 hrs) & ongoing management of nicotine dependence

#### 7. On discharge, assess patients intention to remain abstinent after leaving hospital.

- Supply a minimum of 7 days of NRT for those who choose to remain abstinent.
- Record smoking status (using ICD-10 code) and nicotine dependence management during hospitalisation on discharge summary.
- Advise patients interested in non-nicotine pharmacotherapies to discuss with their GP.
- Provide information or referrals to community based smoking cessation services for ongoing support. Eg. Quitline 13 QUIT; [www.quitnow.info.au/](http://www.quitnow.info.au/); Cancer Council WA Fresh Start Course; GP; Pharmacist

## Fagerstrom Test for Nicotine Dependence

Use the following test to score a patient's level of nicotine dependence once they have been identified as a current or recent smoker

Please tick (✓) one box for each question			
How soon after waking do you smoke your first cigarette?		Within 5 minutes	<input type="checkbox"/> 3
		5-30 minutes	<input type="checkbox"/> 2
		31-60 minutes	<input type="checkbox"/> 1
		60+ minutes	<input type="checkbox"/> 0
How many cigarettes a day do you smoke?		10 or less	<input type="checkbox"/> 0
		11 – 20	<input type="checkbox"/> 1
		21 – 30	<input type="checkbox"/> 2
		31 or more	<input type="checkbox"/> 3
<b>Total Score</b>			
<b>SCORE</b>	1- 2 = very low dependence 3 = low to mod dependence	4 = moderate dependence 5 + = high dependence	

### Offer appropriate level of NRT according to their level of dependence

- Remember to consider contraindications and precautions – refer to medical officer if appropriate.
- Patients previous quit attempts may also provide assistance in which products may be suitable

Dependence level	Combination Therapy	NRT Dosage
High	<b>Patches:</b> 21mg/24hr or 15mg/16hr AND <b>*Lozenge or Gum:</b> 2mg or inhaler	<b>Patches:</b> 21mg/24 or 15mg/16hr <b>Inhaler:</b> 6 –12 cartridges per day <b>Lozenge:</b> 4mg <b>Gum:</b> 4mg
Moderate	<b>Patches:</b> 21mg/24hr or 15mg/16 hr AND <b>*Lozenge or Gum:</b> 2mg or inhaler	<b>Patches:</b> 21mg/24 or 15mg/16hr <b>Inhaler:</b> 6 –12 cartridges per day <b>Lozenge:</b> 4mg <b>Gum:</b> 4mg
Low to moderate	<b>Patches:</b> 14mg/24hr or 10mg/16hr AND <b>*Lozenge or gum:</b> 2mg or inhaler	<b>Patches:</b> 14mg/24hr patch or 10mg/16hr <b>Inhaler:</b> 6 –12 cartridges per day <b>Lozenge:</b> 2mg <b>Gum:</b> 2mg
Low		May not need NRT Monitor for withdrawal symptoms <b>Patches:</b> 7mg/24hr patch or 5mg/16hr <b>Lozenge:</b> 2mg <b>Gum:</b> 2mg

\*Maximum of 12 lozenges or gum per 24hrs, when combined with patch. Minimum recommended is 4 per 24hrs if experiencing breakthrough cravings <sup>1</sup>.

## Appendix 4

### Nicotine Replacement Therapy Product Information

Nicotine Replacement Therapy	Dependence level (Based on Fagerstrom test score)	Dose	Directions for Use	Contraindications
Patch	High	21mg/24 hr patch or 15mg/16 hr patch	Do not use on adhesive or sensitive skin. Place on clean, non-hairy site on chest or upper arm. A new patch should be placed on a different site each day to prevent skin reaction. Ideally, patches should be placed on at night prior to sleep, as nicotine concentration reaches its peak after 8 hours.	Non-tobacco user; children (<12 yrs); hypersensitivity to nicotine; recent myocardial infarction; unstable or progressive angina pectoris; Severe cardiac arrhythmias; acute phase stroke.
	Moderate	21mg/24 hr patch or 15mg/16 hr patch		
	Low to moderate	14mg/24hr patch or 10mg/16 hr patch		
	Low	May not need NRT 7mg/24 hr patch or 5mg/16 hr patch		
Lozenge	High	4mg lozenges 1 lozenge every 1-2 hours	Place one lozenge in the mouth; periodically move from one side of the mouth to the other until dissolved (approx 20 – 30 mins). The lozenge should not be chewed or swallowed whole. Users should not eat or drink while lozenge is in the mouth.	Non-tobacco user; children (<12 yrs); those with hypersensitivity to nicotine; phenylketonurics; recent myocardial infarction; unstable or progressive angina pectoris; Severe cardiac arrhythmias; acute phase stroke.
	Moderate	4mg lozenges 1 lozenge every 1-2 hours		
	Low to moderate	2mg lozenges 1 lozenge every 1-2 hours. Users should not exceed 15 lozenges per day		
Gum	High	4mg gum 6 – 10 per day	Chew slowly until the taste becomes strong (~1min), then rest the gum between your cheek and gum. When the flavour fades, repeat the process. Continue for 30 minutes.	Non-tobacco user; children (<12 yrs); those with hypersensitivity to nicotine; recent myocardial infarction; unstable or progressive angina pectoris; Severe cardiac arrhythmias; acute phase stroke.
	Moderate	4mg gum 6 – 10 per day		
	Low to moderate	2mg gum 8 – 12 per day		
Inhaler	High Moderate	Self titrate dose according to withdrawal symptoms. A cartridge should be used when the user feels an urge for a cigarette.	Insert cartridge, close device to puncture. Do not use the inhaler while eating or drinking. Do not drink acidic beverages (such as coffee or soft drinks) for 15 minutes before using inhaler.	Non-tobacco user; children (<12 yrs); those with hypersensitivity to nicotine; hypersensitivity to menthol; recent myocardial infarction; unstable or progressive angina pectoris; Severe cardiac arrhythmias; acute phase stroke.

# Nicotine Replacement Therapy (NRT)

## The Facts

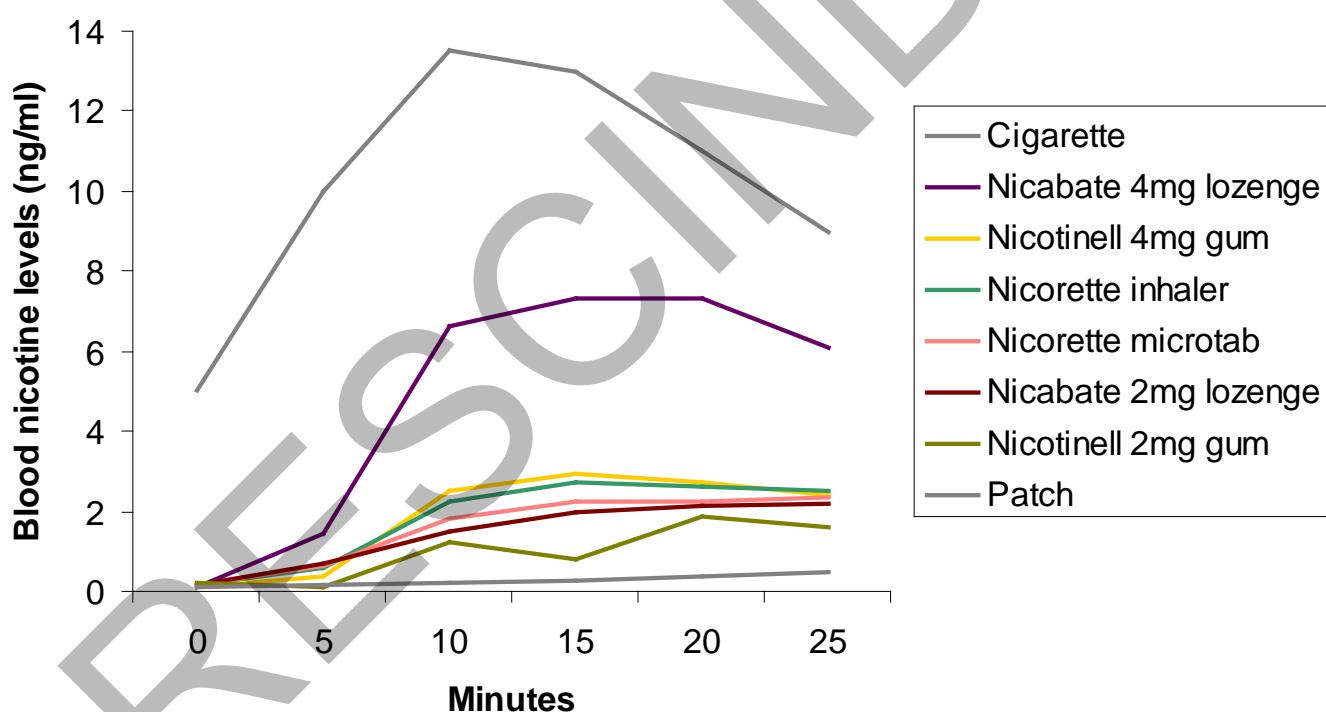
### What is Nicotine Replacement Therapy?

Nicotine Replacement Therapy is a range of medicines intended to support people when they are trying to give up smoking by relieving withdrawal symptoms and reducing cravings for nicotine which people get when they stop smoking.

### How does NRT work?

The aim of NRT is to replace some of the nicotine that you would normally smoke, excluding other toxins, additives and smoke. When the usual nicotine level in your body drops you will feel any number of unpleasant feelings, which are often described as cravings. The NRT you are being offered aims to control these cravings.

The graph below illustrates the levels of nicotine each product supplies compared to a cigarette.



**Source:** McEwen A, West R, & Gaiger M. (2008). Nicotine absorption from seven current nicotine replacement products and a new wide-bore nicotine delivery device. *Journal of Smoking Cessation*, 3(2), 117–123  
Henningfield J. (1995). Nicotine Medications for Smoking Cessation. *N Engl J Med*, 333:1196-1203

### What forms does NRT come in?

NRT comes in a variety of forms so that you can choose the NRT product that suits you most. NRT products include patch, gum, lozenge, sublingual tablet and inhaler. If you have previously tried using NRT, let your nurse/ midwife or medical officer know what NRT worked for you.

# Nicotine Withdrawal Management Plan

**This plan is for use by Nurses, Midwives and Medical Officers following initial NRT assessment to dispense ongoing Nicotine Replacement Therapy (NRT)**

Name: \_\_\_\_\_

Fagerstrom Test Score: \_\_\_\_\_

## NRT History:

## Medical Assessment for NRT:

## Nicotine Withdrawal Management Plan

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The Clinical Guidelines and Procedures for the Management of Nicotine Dependent Inpatients have been endorsed by the Smoke Free WA Health Working Party of the Respiratory Health Network.

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