

Clinical Guidelines and Procedures for the Management of Nicotine Dependent Inpatients

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1. Guiding Principles

The Smoke Free WA Health System Policy aims to minimise the exposure of employees, health services, consumers and visitors to Environmental Tobacco Smoke (ETS) across all Department of Health premises. (1)

The purpose of this document is to provide WA Health System with guidance on how to support WA Health patients to quit smoking or manage their nicotine dependence while in a smoke free environment.

Pharmacological treatment of cigarette cravings in hospitalised smokers potentially improves patient comfort, increases compliance with hospital smoke free policies and promotes smoking cessation after discharge. (2)

2. Guideline

2.1 Assessment

All admissions to hospital should be asked about their smoking status via the Admission Assessment Tool in their unit.

Following the identification of patients that smoke, the admitting nurse will determine the suitability of the patient to receive nicotine replacement therapy (NRT) by using the Fagerstrom Test for nicotine dependence (Appendix 2).

2.2 Nicotine Withdrawal

In addition to craving for tobacco, the symptoms of nicotine withdrawal include 4 (or more) of the following within 24 hours of cessation or reduction in nicotine intake:

- anxiety
- irritability
- decreased heart rate
- restlessness
- frustration or anger
- increased appetite
- difficulty in concentration
- depressed mood
- 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. The patient will require regular monitoring of the above signs and symptoms to ensure the level of NRT and/or its delivery method is appropriate. (3)

2.3 Management

Please read in conjunction with the *Flowchart – Summary for Inpatient Management of Nicotine Dependence* (Appendix 1)

2.4 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. The nurse may initiate NRT via Nurse Initiated Medication protocol for eligible patients, subject to medical review. Both Medical Officers and Nurses share responsibility to review the patient for ongoing withdrawal symptoms and NRT medication.

NRT aims to replace some of the nicotine obtained from cigarettes, thus reducing withdrawal symptoms when stopping smoking.

The inhaler delivers a quicker dose of nicotine than patches. While it superficially resembles a cigarette, nicotine delivery is via the oral mucosa. It may be useful for those who want hand to mouth behaviour, and have particular relevance for mental health and dementia patients.

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

2.5 Combination Therapy

Combination therapy is the provision of fast acting products (such as gum, lozenge or inhaler) to combine with the patch. It is appropriate if the patient is highly nicotine dependent, continues to experience withdrawal symptoms or has difficulty abstaining from smoking while on the nicotine patch.

2.6 Drug Interactions

Stopping smoking, with or without NRT products may alter the metabolism of some medicines. Therefore some medicines may require a change in dosage when patients start on an NRT program.

2.8 Clinical Roles and Responsibilities

All clinicians should be responsible for supporting patients in complying with the Smoke Free WA Health System Policy.

Nurses Clinical Practice Guidelines

1. Giving all inpatients that smoke a brochure *Smoke Free WA Health: Advice for Patients*
2. Asking all patients who smoke to sign the *Patient Smoking Waiver Form*
3. Follow *Flow Chart – Summary Inpatient Management of Nicotine Dependent Inpatients (nurse initiated)* (Appendix 1) and *NRT Product Guide* (Appendix 3)
4. Provide all patients offered NRT the fact sheet *Nicotine Replacement Therapy – The Facts* (Appendix 4)
5. Ensure Medical Officer reviews and signs medication chart within 24 hours

6. On discharge, discuss with all smokers their intent to smoke after leaving hospital and offer information about smoking cessation, counselling and points of referral to community based cessation services such as:
- The Quitline 13 7848 13 QUIT
 - Community Drug Service Team (where appropriate)
 - Community based quitting course. Fresh Start group quitting where available.
 - Online cessation www.quitnow.info.au/.
 - General Practitioner
 - Pharmacist

NB: Endorsed Enrolled Nurses may administer nurse-initiated NRT if approved by the Drug Committee as long as they have checked with their supervising registered nurse, prior to administration, that the medication is appropriate and safe.

Patients excluded from nurse initiated NRT	
Recent is defined as within the last 4 weeks MO's may prescribe NRT to these patients	
<ul style="list-style-type: none"> ▪ Under 18 yrs ▪ Mothers of preterm infants ▪ Unstable angina ▪ Cardiac arrhythmias ▪ Lactating ▪ Patients in ICU or CCU 	<ul style="list-style-type: none"> ▪ Recent CVA ▪ Recent MI ▪ Recent or planned angioplasty ▪ Recent or planned stenting ▪ Recent or planned coronary bypass grafting

Medical Officers responsibilities:

- Review and prescribe appropriate NRT within 24 hours of Nurse-Initiated NRT
- Assess all patients with contraindications to nurse initiated NRT and prescribe appropriate NRT
- Monitor patient withdrawal and adjust NRT medication accordingly
- Provide patient with a Quit kit
- Include reference to NRT administered as part of the patient discharge plan
- Where available, the pharmacist will have a key role in NRT. They will also be responsible to provide the ward with appropriate NRT and arrange discharge advice where possible.

2.9 Engaging the Client to Comply with the Smoke Free Health Care Policy

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

If the clinician anticipates difficulty with patient compliance, they may engage another clinician that has a good therapeutic relationship with the patient to discuss the issues with the patient in order to obtain compliance with the policy.

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



2.10 Specific Patient Groups or Settings

Heavily nicotine dependent patients

It is recommended that moderate to heavily nicotine dependent patients be screened and/or monitored for depression. Patients with a depressed mood and a history of problematic drinking have been reported as more likely to be nicotine dependent and may have greater difficulty in stopping smoking whilst in hospital. These patients may require combination therapy of two forms of NRT in order to prevent symptoms of nicotine withdrawal.

Pregnant women and NRT

Smoking during pregnancy is associated with risks such as unhealthy birth weight, premature birth or stillbirth. Stopping smoking is the single most effective intervention for improving the health of both the pregnant smoker and her baby. The earlier abstinence is achieved the better. The ante natal phase provides opportunities for the early identification and assessment of smokers and smoking cessation advice and support.

Ideally smoking cessation during pregnancy should be achieved without NRT. However for women unable to quit on their own, NRT should be offered as the risk to the fetus is lower than tobacco smoking. 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 should be assessed for nicotine dependence and offered NRT as required during the labour and reviewed for ongoing therapy post partum.

Breastfeeding and NRT

Nicotine from both smoking and NRT is found in breast milk. However, the small amount of nicotine the infant receives from NRT is relatively small and less hazardous than the second-hand smoke they would be exposed to. Intermittent dosing products (i.e. lozenge, gum and inhalers) should be used while breastfeeding allowing women to manage their breastfeeding and NRT therapy through maximising the time between using NRT and feeding. This can be achieved by feeding just prior to using NRT. (4)

Mothers of pre-term infants are excluded from nurse-initiated NRT and should be referred to a Medical Officer.

Pharmacotherapy for patients with mental health co-morbidity

Many people with mental illness express interest in quitting smoking, and they should receive the same help and encouragement offered to all patients who do not have a mental illness. It is important for clinical staff to closely monitor withdrawal symptoms in patients with psychiatric co-morbidity, and offer combination NRT to patients who are having difficulty abstaining from smoking.

Smoking interacts with some medications by increasing metabolic rate, making medications pass through the system more quickly. When some people with mental illness stop smoking or significantly cut down their intake, their medication may need to be changed. In these circumstances it is very important for people to work together with their doctor or health worker to monitor their mental health medication.

One study of hospitalised smokers in a smoke-free psychiatric ward demonstrated a definite preference for the nicotine inhaler, which replicates the hand-to-mouth movements of smoking (5). If combination therapy is offered to people with psychiatric co-morbidity, it may be advisable to offer the patch plus inhaler.

NRT and cardiovascular disease

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 (6). The safety of NRT use in patients with cardiovascular disease is widely documented. NRT can be used safely by smokers with less severe CVD.

There is some concern about the use of NRT in those with recent MI, or unstable angina, severe arrhythmias or refractory angina, although again continued smoking will be far more harmful. (3)

NRT and diabetics

Patients with diabetes mellitus should 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. (4)

NRT and children and adolescents

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

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 where the demand for cessation products and the motivation to quit is low. Nevertheless NRT is safe in this group. NRT should only be used by adolescents in conjunction with a counselling programme. Counselling is needed in this age group because NRT is likely to be ineffective in the absence of counselling. (4)

Patients under 18 years of age are excluded from Nurse-initiated NRT.

Elective surgery and preadmission clinics

Patients who smoke in the weeks prior to surgery have increased risk of postoperative complications, wound infections and wound rupture compared with non-smokers. Preadmission clinics are an ideal opportunity to prepare patients for the fact that their visit to hospital will be Smoke Free.

At preadmission patients who are current or recent smokers should be identified. They should be informed they are coming into a smoke free hospital and encouraged to stop smoking now.

Patients respond better to a brief intervention that relates to their particular health issues e.g. wound healing, infection rates, post-operative complications and disease progression. Since the use of pharmacotherapy doubles a person's chance of success, patients should be advised to use pharmacotherapy in their quit attempt, and seek the advice of their GP, pharmacist, or anaesthetist. They should be encouraged to make use of any of the counselling services available from the Quitline (13 7848).

Emergency Department (ED)

Patients attending Emergency Department should be advised that the grounds of the hospital are Smoke Free. Where admitted patients who are smokers have a long wait before transfer to an inpatient bed, clinical staff in ED should take steps to manage the nicotine dependence of the patient.

Emergency Departments should keep supplies of all forms and resources associated with the management of nicotine dependent inpatients.

Indigenous patients

One of the barriers to compliance with the Smoke Free WA Health System Policy in the Indigenous population is likely to be associated with understanding the information provided. It is essential that all Indigenous patients are able to understand the parameters of the policy. In addition, as will all inpatients, the administering of NRT requires full patient consent.

To assist with any education required, there a number of people who may be of assistance. The patient may be asked if they have a friend or relative who might be able to assist and support them through the process of their admission and understanding the Smoke Free Policy. Failing this, the patient may wish to have a staff member who is known to and trusted by them to help them through this process. If none of the above individuals are available, an Indigenous Health Worker, who is known to them and readily available, should be contacted to help them through their admission and subsequent staff stay at the health service.

3. Evaluation

Monitoring and evaluation is an important component of the Smoke Free WA Healthy 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 independent state wide evaluation report conducted in August 2008.

4. References

1. Department of Health WA. Smoke Free WA Health System Policy, 2009.
2. Department of Health WA. Smoke Free WA Health System Policy– Guidelines for the management of nicotine withdrawal and cessation support in nicotine dependent patients, 2009.
3. NSW Health, Guide for the management of nicotine dependent inpatients – summary of evidence. Gladesville: NSW Health Department; 2002.
4. MIMS Australia. Mims Online. In: MIMS Australia.
5. D'Mello DA, Bandlamundi GR & Colenda CC. Nicotine replacement methods on a psychiatric unit. American Journal of Drug and Alcohol Abuse. 2001; 27 (3): 525 – 529.
6. Benowitz NL & Gourlay SG. Cardiovascular toxicity of nicotine: implications for nicotine replacement therapy. Journal of the American College of Cardiology. 1997; 29: 1422 – 1431.

5. Appendices

1. Flowchart – Summary for Inpatient Management of Nicotine Dependence (Nurse-Initiated)
2. Fagerstrom Test
3. NRT Product Information
4. NRT – Nicotine Replacement Therapy
5. Nicotine Withdrawal Management Plan



Appendix 1

Flow Chart – Summary Management of Nicotine Dependent Inpatients (nurse-initiated)

1. Assess smoking status via admission assessment tool
 Ex- Smoker (more than 6 months since their last cigarette) – Encourage continued abstinence
 Daily/Occasional Smoker – Follow steps 2 – 5

2. Inform patient of the Smoke Free WA Health System Policy and have them sign the Patient Smoking Waiver form

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 patients – this may assist in determining appropriate NRT

Excluded Patients

Contraindicated (NRT should <u>not</u> be used)	Precaution
Non smokers	Children under 18 years
Children under 12 years	Acute MI, unstable or worsening angina, severe cardiac arrhythmias
Those with hypersensitivity to nicotine	Recent CVA (within 4 weeks)
Phenylketonurics (should not use lozenge)	Recent or planned coronary angioplasty, bypass graft or stenting (within 4 weeks)
Menthol hypersensitivity (should not use inhaler)	Peripheral vascular disease
	Renal & hepatic impairment
	GI disease
	Patients in ICU or CCU

Consult Medical Officer

Eligible Patient

Dependence Level	NRT Dosage Not combination therapy
High	Patches: 21mg/24 or 15mg/16hr Gum: 4mg Inhaler: 6 –12 cartridges per day Lozenge: 4mg
Moderate	Patches: 21mg/24 or 15mg/16hr Gum: 4mg Inhaler: 6 –12 cartridges per day Lozenge: 4mg
Low to Moderate	Patches: 14mg/24 or 10mg/16hr Gum: 4mg Inhaler: 6 –12 cartridges per day Lozenge: 2mg
Low	May not need NRT Monitor for withdrawal symptoms Patches: 7mg/24 hr or 5mg/16hr Lozenge: 2mg Gum: 2mg

5. Monitor signs and symptoms of withdrawal and adverse effects of overdose
 Consider combination therapy if patient is still experiencing withdrawal symptoms

Combination Therapy
 Patches AND lozenge or Gum 2mg

6. Medical review (within 24 hours) & ongoing management of nicotine dependence

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
Total Score			
SCORE	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 MO if appropriate.
- Patients previous quit attempts may also provide assistance in which products may be suitable

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

Nicotine Replacement Therapy Product Information

Nicotine Replacement Therapy	Client Group (Dependent on Fagerstrom test score)	Dose	Directions for Use	Contraindications
Patch Step down regime over 8 – 12 weeks, from 21mg to 7mg	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.	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 Step down regime over 10-12 weeks from 4mg to 2mg	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 Step down regime over 12 weeks from 4mg to 2mg of Maximum use of 9 months	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 Full course 16 wks With step down regime over 12 weeks	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

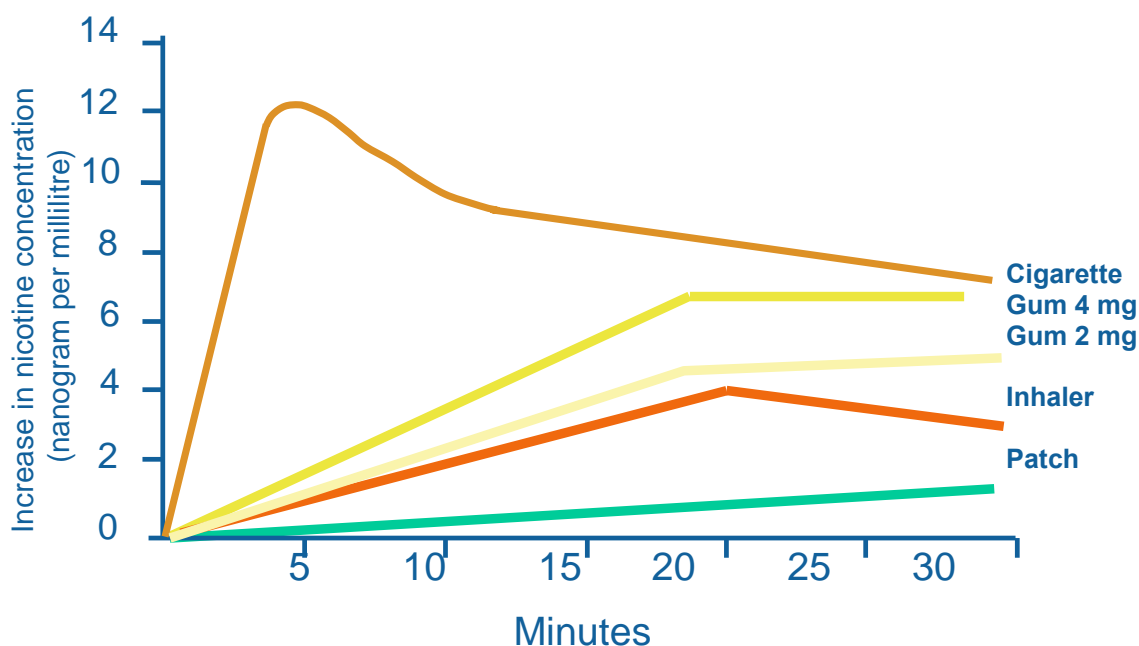
What is Nicotine Replacement Therapy?

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 first 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: Balfour DJ & Fagerström KO. *Pharmacol Ther* 1996 72:51-81.

What forms does NRT come in?

NRT comes in a variety of forms so that you can choose the NRT that suits you most. It is available in four forms: patch; gum; lozenge and inhaler. You may have previously tried using NRT. Let your nurse or medical officer know what NRT worked for you.

