Protocol for the Direct Supply of Nicotine Replacement Therapy (NRT) by Southampton Quitters trained Community Pharmacy Staff.

Rational for NRT:

Over 95% of smokers are nicotine dependent and cannot go for a day, even if unwell, without smoking. They experience a range of symptoms known as Withdrawal Syndrome if deprived of nicotine and this often acts as a barrier when they decide that they wish to stop smoking. Nicotine Replacement Therapy (NRT) has been developed as a safer way for those trying to quit, it allows the absorption of the nicotine that they crave. NRT is well tolerated and delivered slowly and at lower levels so it cannot create new nicotine dependency. NRT reduces the desire to smoke and damps down withdrawal cravings. It provides a coping behaviour and supports the smoker in a staged quit – giving them breathing space to deal with their smoking behaviours and beliefs. If used correctly, at high enough doses and for long enough, NRT will delay weight gain and reduce the risk of relapse. There are a range of products to suit the habitual preferences of smokers. NICE Guidance allows that NRT products may be combined for maximum efficacy.

1. Clinical Condition

1.1	Define situation/condition	Treatment of nicotine dependence and relief of withdrawal symptoms associated with smoking cessation. The decision to use NRT must be guided by NICE / DH guidance depending on: • Client preference • Client's previous experience of smoking cessation aids • Contraindications, cautions and the potential for adverse effects • The availability of smoking cessation counselling and support • The likelihood that the client will follow the course of treatment
1.2	Criteria for inclusion	Smokers with the motivation to quit smoking. Individuals over 12 years of age Pregnant women (Please see section 3.8) Those who are breastfeeding Cardiovascular patients who are already being supplied with NRT whilst in hospital can have their supply continued, as the NRT has been already initiated under medical supervision.
1.3	Criteria for exclusion	Individuals under 12 years of age Non-smokers or occasional smokers Individuals already using NRT, bupropion or varenicline from another source. Cardiovascular patients who have not already had NRT initiated Hypersensitivity to any component of the NRT product. Recent myocardial infarction. Unstable or worsening angina pectoris. Severe cardiac arrhythmias. Recent cerebrovascular accident Clients on concurrent antipsychotic medication. (See Appendix 1- including newest caution on Clozapine). Clients who have had 3 or more previously unsuccessful quits
1.4	Cautions (See section 3.8)	Use with caution in patients with hypertension, stable angina pectoris, cerebrovascular disease, occlusive peripheral arterial disease, heart failure, hyperthyroidism, diabetes mellitus, renal or hepatic impairment, peptic ulcer.

		Chewing gums may not be suitable for patients with dentures. *Concomitant medication Cigarette smoking increases the metabolism of some medicines by stimulating the hepatic enzyme CYP1A2. When smoking is discontinued, the dose of these drugs, in particular theophylline, cinacalcet, ropinirole, and some antipsychotics (including clozapine), olanzapine, chlorpromazine and haloperidol may need to be reduced. Regular monitoring for adverse effects is advised.* For the full information on NRT products please refer to the individual Summary of Product Characteristics (SPCs). (Also see Appendix 2).
1.5	Action if patient excluded	Refer to Southampton Quitters 02380 515221 who will refer on to other medical professionals where appropriate.

2. Characteristics of Staff

2.1	Class of Health Professional for whom this Protocol is applicable	Pharmacy staff trained by Southampton Quitters Medicines counter staff may be trained and may supply all GSL forms of NRT.
2.2	Additional requirements considered relevant to the medicines used in the protocol	All advisors must have undertaken appropriate Quitters training for working under this protocol. Promotional material should be on display within the pharmacy for national campaigns including, but not limited to; Stoptober, National No-Smoking Day and the Health Harms Campaign. **Recommendations for practice** 1. Be open to e-cigarette use in people keen to try them; especially in those who have tried and failed to stop smoking using licensed stop smoking medicines. 2. Provide advice on e-cigarettes that includes: ■ E-cigarettes provide nicotine in a form that is much safer than smoking. ■ Some people find e-cigarettes helpful for quitting, cutting down their nicotine intake and/or managing temporary abstinence. ■ There is a wide range of e-cigarettes and people may need to try various types, flavours and nicotine dosages before they find a product that they like. ■ E-cigarette use is not like smoking and people may need to experiment and learn to use them effectively (e.g. longer 'drags' may be required and a number of short puffs may be needed initially to activate the vaporiser and improve nicotine delivery). They may also need to recognise when atomisers need replacing. ■ People previously using e-cigarettes while smoking (e.g. to reduce the number of cigarettes that they smoke) may need to consider changing devices and/or nicotine concentrations when making a quit attempt. ■ Although some health risks from e-cigarette use may yet emerge, these are likely, at worst, to be a small fraction of the risks of smoking. This is because cigarette vapour does not contain the products of combustion (burning) that cause lung and heart disease, and cancer. 3. Multi-session behavioural support provided by trained stop smoking practitioners will improve the chances of successfully stopping smoking whether or not people use e-cigarettes. It may be useful to encourage clients to familiarise themselves with the use of their e-cigarette before setting a quit. 4. Stop smoking services can provide behavioural support to clients who are using e-cigarettes and can include this in their national data returns. 5. Clients of stop smoking services who are using an e-cigarette and who also want to use NRT can safely use the two in conjunction. They do not need to have stopped using the e-cigarette before they can use NRT.
2.3	Continued training requirements	All advisors will be required to complete further training every year to maintain competency, and become National Centre for Smoking Cessation Training (NCSCT) accredited and certified smoking cessation advisors. (www.ncsct.co.uk/training)

		All are personally accountable for their practice and in the exercise of professional accountability there is a requirement to maintain and develop their professional knowledge and competence. There is a mandatory requirement for anyone offering the smoking cessation service to attend one update training cessation per year from four possible training sessions: two evening and two during the day. If the healthcare professional is new to the smoking cessation service there is a mandatory requirement to undertake a full one day induction.
2.4	Indemnity	Trained advisors must ensure that they have professional indemnity cover. Trained advisors must ensure that the practice has public liability cover of at least £10 million, employer's liability cover of at least £5 million and professional indemnity cover of at least £5 million during the service and for 6 years afterwards to cover its liability to Southampton City Council.
2.5	Premises	The service can only be provided in an approved pharmacy that should have a suitable area for consultation with the patient where privacy can be maintained.
2.6	Confidentiality	The public is entitled to expect advisors to respect and protect the confidentiality of information acquired in the course of their professional duties. The duty of confidentiality extends to any information relating to an individual that an advisor acquires in the course of their professional duties. Confidential information includes details and medication, both prescribed and not prescribed.

3. Description of Treatment

3.1 Name of Medicines

3.2 Legal Status

Form	Name of Medicine	Legal Status
Oral Products		
Chewing Gum	Nicorette Chewing Gum 2mg	GSL
	Nicorette Chewing Gum 4mg	GSL
	Nicotinell Chewing Gum 2mg	GSL
	Nicotinell Chewing Gum 4mg	GSL
Inhalator	Nicorette Inhalator 15mg	GSL
Lozenges	Nicotinell Lozenge 1mg	GSL
	Nicotinell Lozenge 2mg	GSL
Mini lozenges	Niquitin Minis Lozenge 1.5mg	GSL
	Niquitin Minis Lozenge 4mg	GSL
Spray	Nicorette Quickmist mouthspray 1mg	GSL
Patches		
16 hour Patches	Nicorette Invisi Patch 25mg	GSL
	Nicorette Invisi Patch 15mg	GSL
	Nicorette Invisi Patch 10mg	GSL
24 hour Patches	Nicotinell TTS Patch10	GSL
	Nicotinell TTS Patch 20	GSL
	Nicotinell TTS Patch 30	GSL

		<table><tr><td>**Nasal Spray**</td><td></td><td></td></tr><tr><td>Nasal spray</td><td>Nicorette Nasal Spray 500 microgram/spray</td><td>GSL</td></tr></table> Key GSL General Sales List Medicine
3.3	Licensed or unlicensed	Licensed
3.4	Dose and frequency of administration	Where appropriate NICE guidance recommends that a combination of NRT products may be supplied for patients to enhance success rates. Clients will be supplied with Combination Therapy (two products, usually a patch with an oral product) for a period of time. The patch gives a steady background level of Nicotine to reduce symptoms of withdrawal and the oral products are used to prevent breakthrough withdrawal at times that people used to smoke or in response to emotional, behavioural or environmental cues e.g. when seeing others smoke, at times of stress etc. The time for NRT treatment varies according to the local Commissioning priorities, specifications and agreements. • In Southampton Combination therapy for 4 weeks and up to a further 8 weeks of monotherapy The choice of products, dosage and frequency of use will be dependent upon the level of Nicotine dependency. This may be titrated from:- a. Time to first cigarette b. Carbon Monoxide measure c. Declared number of cigarettes smoked (ask for most smoked ever). As a guide: **A. Heavily dependent smoker** (one or more of the following)**:** a. Smokes within 20 minutes of waking b. CO reading >20 c. Smokes a pack of cigarettes a day d. Smokes over night Use a high dose patch e.g. 25mg Invisi in combination with an oral product initially. Advise to use the oral product liberally in the first few weeks before tailing off - “on the hour, every hour” is a useful guide. This dosing will suppress breakthrough withdrawal. Demonstrate the use of the products and check client understanding to ensure maximum efficacy and improve compliance. **B. Dependent smoker** (one or more of the following) a. Smokes within 1 hour of waking b. CO reading >15 c. Smokes up to a pack of cigarettes a day Use a high dose patch in combination with an oral product initially. Advise to use the oral product about half an hour before their most important cigarettes of the day and as often thereafter as they feel the need. Some clients will benefit from the “on the hour, every hour” regime initially. Demonstrate the use of the products and check client’s understanding to ensure maximum efficacy and improve compliance Specific NRT dosage will be guided by NICE recommendations and tailored to the needs of individuals. Typical combinations of treatment include:- • Patch + Gum • Patch + Lozenge • Patch + Inhalator • Patch + Quickmist (mouth spray)

		The supply of all NRT is contingent on Client abstinence. Clients will be given NRT on a "weaning dose" by Direct Supply for up to 12 weeks in Southampton. Heavily nicotine dependent smokers may need to remain on high dose patches for 6 weeks to stave off withdrawal. Further NRT will no longer be offered via GP prescription as the service is now offered for a 12 week period (and the referral letter has been amended).
3.5	Route/Method of Administration/Disposal of the medicine	

NRT Form	Route	Administration
Oral Products		
Chewing Gum (2mg and 4mg)	Transbuccal	Self dose regularly according to "chew and rest" technique described in product information. Dispose of used gum hygienically after 20-30 minutes (taste will have disappeared).
Inhalator	Oral mucosa	Self dose regularly. Inhale through mouthpiece and puff like using a pipe. Some people find deep drawing or short sucks helpful. The vapour can be taken in bursts of 5 minutes for up to approximately 20 minutes per cartridge. Hold the vapour in a closed mouth for good absorption. Dispose of used cartridge safely and hygienically.
Lozenges (1mg and 2mg|) Mini Lozenge (1.5mg and 4mg)	Transbuccal	Self dose regularly using the suck and park routine. Move around the mouth keeping good contact with the cheek pocket and dispose of hygienically after 30 minutes if not totally dissolved.
Quickmist (mouth spray)	Oral mucosa	Self dose regularly. Open and prime pump by shaking. Depress valve on the top by using 1 or 2 fingers. Check spray is a fine mist not a dribble. Open mouth and aim a single spray into side of cheek (not down throat). Close mouth to retain spray for 10 seconds to achieve best absorption. Close spray. Any excess saliva may be swallowed or spit into a tissue and safely disposed of. A second spray can be taken within 30 minutes. Dispose of used equipment safely.
Patches		
16 hour Patches	Transdermal	Apply once each morning to dry, clean, non-hairy area of skin (back, shoulder, upper arm or thigh) and wear for 16 hours. Retain packet. Never place on chest, abdomen or bottom. Remove used patch and dispose of safely in its packet. Next day, site the fresh patch on a different area.
24 hour Patches	Transdermal	Apply once each morning to dry, clean, non-hairy area of skin (back, shoulder, upper arm or thigh) and wear for 24 hours. Retain packet. Never place on chest, abdomen or bottom. Remove used patch and dispose of safely in its packet. Next day, site the fresh patch on a different area. Note: 24 hour patches are best used by those who typically smoke overnight.
Nasal Spray		
Nasal Spray	Trans-nasal	Remove protective cap. Prime nasal device and ensure a fine spray. Insert spray tip into one nostril. Bend head forward with chin down. Align the tip so that it points towards back of the nose. This prevents the spray going down the throat. Press firmly and quickly. Do not breathe in. Then give a spray into the other nostril. Re-place protective cap. On commencement the spray is used to treat cravings as required, subject to a limit of one spray to each nostril twice an hour. Dispose of used equipment safely.

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>3.6</td><td>Total dose and number of times treatment can be administered</td><td>
<table>
<tr><th>NRT Form</th><th>Maximum in 24 hours</th></tr>
<tr><td>Chewing Gum</td><td>15</td></tr>
<tr><td>Inhalator 15mg</td><td>6 cartridges</td></tr>
<tr><td>Lozenges and Lozenge Minis</td><td>15</td></tr>
<tr><td>Quickmist Mouth Spray</td><td>Up to 64 sprays</td></tr>
<tr><td>16 hour Patches</td><td>1</td></tr>
<tr><td>24 hour Patches</td><td>1</td></tr>
<tr><td>Nasal Spray</td><td>Up to 64 sprays</td></tr>
</table>
</td></tr>
<tr><td>3.7</td><td>Supply</td><td>For one prescription fee (for those that are not exempt), supply up to 12 weeks of the appropriate NRT preparation at weekly intervals for those patients motivated to give up smoking. This fee is now collected by the community pharmacy who record this on PharmOutcomes.

Combination Therapy is the operational norm for the up to the first four weeks for those who have smoked heavily prior to quitting.

If a client is not abstinent after 2 weeks, further NRT is generally not supplied and the client is referred to Southampton Quitters.

In the rare cases of people not able to make weekly or fortnightly appointments, or those with Mental Health conditions, they will have their NRT by GP prescription.

NRT is only to be supplied directly to the client and not to any 3rd party.</td></tr>
<tr><td>3.8</td><td>Further Information Special Considerations</td><td>Factors to consider in choosing an appropriate product:

• Pregnancy
Pregnant women should ideally be referred to the NHS Pregnancy Smoking Helpline Solent 0300 123 1044 or Southampton Quitters 02380 515221. If they do not wish to do this, they should be encouraged to stop smoking without using NRT but, if this is not possible, NRT may be recommended to assist a quit attempt. Intermittent forms of NRT are preferable during pregnancy although a patch may be appropriate if nausea and/or vomiting are a problem. If patches are used the16 hour type are preferable and removed before going to bed at night, however, the 24 hour patches could be used and removed before going to bed. However, liquorice flavoured gums are not recommended in pregnancy.

• Breastfeeding
NRT can be used by women who are breast-feeding. If possible, patches should be avoided. NRT products taken intermittently are preferred as their use can be adjusted to allow the maximum time between their administration and feeding of the baby, to minimise the amount of nicotine in the milk. 24 hour patches and liquorice flavoured gum are not recommended. Patches should be removed and replaced every day.

• Diabetes mellitus
Diabetic patients should be advised to monitor their blood sugar levels more closely than usual when starting NRT.

• Renal or hepatic impairment
NRT should be used with caution in patients with moderate to severe hepatic impairment and/or severe renal impairment as there is a potential for increased adverse effects.

• Interactions with NRT
To date the product information for NRT has contained interactions that may occur as a result of quitting smoking rather than NRT per se. No clinically</td></tr>
</table>

		relevant interactions • **Interactions with NRT** To date the product information for NRT has contained interactions that may occur as a result of quitting smoking rather than NRT *per se*. Stopping smoking may affect the metabolism of other drugs. Please see Appendix 1 and 2 • **Mental Health** Stopping smoking changes the plasma levels of anti-psychotic medication, which could lead to a worsening of existing mental illness. This is a medical caution. Please see Appendices 1 and 2 for a full list of potential drug interactions. Clients on mental health treatment should receive their NRT via a GP prescription. • **Some other considerations** Allergy to the products used to formulate the NRT product. NRT Gums are not suitable for denture wearers or for patients with stomach problems. Patches are unsuitable for patients with dermatological disorders. Patches should be removed and replaced every day. Lozenges are sugar-free and therefore suitable for diabetic patients if patches are not suitable. Care should be taken with inhalation cartridges in clients with obstructive lung disease, chronic throat disease, or bronchospastic disease. Nasal sprays can worsen bronchial asthma. **Weight gain** Clients should be advised that they may face weight gain when they quit smoking and may benefit from advice on exercise and diet. If enough NRT is used for long enough as directed, weight gain will be delayed.
3.9	Side effects of drugs (to Include potential Adverse Reaction)	As per nicotine ○ Nausea ○ Dizziness ○ Headache ○ Cold and influenza type symptoms ○ Palpitations ○ Dyspepsia ○ Hiccups ○ Insomnia ○ Vivid dreams ○ Myalgia NRT Patches - skin irritation (often due to the adhesives used). NRT Oral products - mouth ulceration and sore throat (mostly due to a slight depression in the immune response). See BNF www.bnf.org and patient leaflet
3.10	Electronic Cigarettes	• At the time of writing, no E-cigarette is licensed as a smoking cessation aid. • The use of E-cigarettes with NRT is now possible but Advisors cannot recommend or supply them.
3.11	Procedure for reporting Adverse Drug Reactions (ADRs)	a) Any serious reaction should be reported to the MHRA through the yellow card scheme in the normal manner. It is the responsibility of the advisor to identify a suspected ADR and to report it. Yellow Cards are available at the back of the current BNF, by telephone on 0808 100 3352 or online at

		www.yellowcard.gov.uk b) Inform client to stop using NRT c) Inform client's GP d) Report incident using the Adverse Event Report system
3.12	Written / verbal advice for patient before/after treatment	• Withdrawal Syndrome and role of NRT • **Method of administration** and disposal • **Side effects**. Discuss side effects with client. • **Where to get help.** • **Patient Information Leaflet given out with the product** • **Check if the client ordinarily pays for their prescriptions.** One fee (equal to a prescription fee) is collected by the community pharmacy and recorded on PharmOutcomes. The fee is then deducted from the invoice. Up to twelve weeks of NRT is available for one prescription fee. If exempt from charges patients should complete the prescription charge declaration form. ➢ Tell the patient to inform all healthcare professionals that they are using NRT
3.13	Recording supply / patient identifier / audit trail	Records are confidential and should be stored securely and for a length of time in line with local NHS record and record keeping policy. Records are to be kept using the Client Monitoring Form (CMF) – includes client's informed consent to share information with client's GP. Clients will be made aware of the records being kept. The form will include the following statement **NOTE: All client data will be kept securely and in accordance with the Caldicott Guidelines and the Data Protection Act 1998. Information can only be passed to another healthcare professional if this contributes to the provision of effective care.** Records include: (a) The Client Monitoring Form if used prior to putting information on the computer (b) GP notification of NRT supply memo. (c) Agreement for NRT use in pregnancy **/** breastfeeding if applicable.

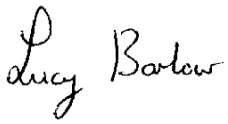
References

Stead L, Perera R, Bullen C, Mant D, Lancaster T Nicotine Replacement Therapy for smoking cessation. Cochrane Database Systematic Review 2008 issue 1
www.nice.org/guidance/phg/index.jsp
www.ncsct.org

4. Management of Protocol

This Protocol was reviewed by Lucy Barlow, Locality Pharmacist (West) 20.4.2016.
Due for review April 2018.

Signature of Lucy Barlow
Locality Pharmacist (West)
Southampton City CCG



Date 20.4.16

Signature of Andrew Smith
Specialist Stop Smoking Services (Quitters)
Clinical Manager
Solent NHS Trust

Date 13.06.16

Authorisation

Ratified by Bob Coates
Director of Public Health
Public Health Team
Southampton City Council:

Date 17.5.16

Authorisation of individuals to use this Protocol

Location/Service where Protocol used	*Employing Organisation* *(where applicable)*
Name of clinical manager of professional group responsible for determining competency of individuals to use this Protocol within the service Signature Title Date PRINT NAME	

This protocol must be read, agreed to and signed by each of the health professionals who work within it. All professionals must act within their appropriate Code of Professional Conduct. One copy should be given to each stop smoking staff member, with the master copy being kept by Public Health.

I confirm that I have read and understood the content of this Protocol and that I have received the appropriate training in order to implement it effectively. I agree to work within its parameters.

Date	Name	Signature

APPENDIX 1

ANTI-PSYCHOTIC & MENTAL HEALTH MEDICATIONS

As stopping smoking can alter plasma levels of many medications CAUTION is needed for those on anti-psychotic & other mental health medications.

Clients on these medications should be referred to Quitters who will refer them on to their GP for assessment and issue of a prescription for NRT if appropriate, as is the standard operating procedure. During this process the Client will continue to receive supported from Quitters.

Amisulpride – Solian
Aripiprazole – Abilify
Asenapine - Sycrest
Benperidol – Anquil
Carbamazepine – Tegretol
Chlorpromazine Hydrochloride – Largactil
Clozapine – Clozaril, Denzapine, Zaponex
NOTE: Giving up smoking while on clozapine can increase clozapine levels. The clozapine dose will need reducing and extra monitoring is required to watch out for clozapine adverse effects.
Flupentixol – Depixol, Fluanxol
Fluphenazine Decanoate – Modecate
Haloperidol – Haldol Decanoate, Dozic, Haldol, Serenace
Levomepromazine – Nozinan
Lithium Citrate – Li-Liquid, Priadel (Liquid)
Lithium Carbonate – Camcolit, Liskonum, Priadel (Tablets)
Olanzapine, Olanzapine Embonate – Zyprexa, ZypAdhera
Paliperidone – Invega, Xeplion
Pericyazine
Perphenazine – Fentazin
Pimozide - Orap
Pipotiazine Palmitate – Piportil Depot
Prochlorperazine- Stemetil
Promazine, Promazine Hydrochloride
Quetiapine – Seroquel, Seroquel XL
Risperidone – Risperdal, Risperdal Consta
Sodium Valproate, Valproic Acid – Depakote, Convulex, Epilim
Sulpiride – Dolmatil, Sulpor
Trifluoperazine – Stelazine
Zuclopenthixol - Clopixol

CAUTION WITH THESE TRICYCLIC ANTI-DEPRESSANTS

Dosulepin – Prothiaden
Trazadone Hydrochloride – Molipaxin

CAUTION WITH THESE HYPNOTIC DRUGS

Zopiclone – Zimovane
Zolpidem – Stilnoct

APPENDIX 2

DRUG INTERACTIONS WITH SMOKING

Many interactions between tobacco smoke and medications have been identified. Note that in most cases it is the tobacco smoke—not the nicotine—that causes these drug interactions. Tobacco smoke may interact with medications through pharmacokinetic (PK) or pharmacodynamic (PD) mechanisms. PK interactions affect the absorption, distribution, metabolism, or elimination of other drugs, potentially causing an altered pharmacologic response. The majority of PK interactions with smoking are the result of induction of hepatic cytochrome P450 enzymes (primarily CYP1A2). PD interactions alter the expected response or actions of other drugs. The amount of tobacco smoking needed to have an effect has not been established and the assumption is that any smoker is susceptible to the same degree of interaction. The most clinically significant interactions are depicted in the shaded rows.

DRUG/CLASS	MECHANISM OF INTERACTION AND EFFECTS
Pharmacokinetic Interactions	
Alprazolam (Xanax)	▪ Conflicting data on significance of a PK interaction. Possible ↓ plasma concentrations (up to 50%); ↓ half-life (35%).
Caffeine	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (56%). ▪ Likely ↑ caffeine levels after cessation.
Chlorpromazine (Thorazine)	▪ ↓ Area under the curve (AUC) (36%) and serum concentrations (24%). ▪ ↓ Sedation and hypotension possible in smokers; smokers may need ↑ dosages.
Clozapine (Clozaril)	▪ ↑ Metabolism (induction of CYP1A2); ↓ plasma concentrations (18%).
Flecainide (Tambocor)	▪ ↑ Clearance (61%); ↓ trough serum concentrations (25%). ▪ Smokers may need ↑ dosages.
Fluvoxamine (Luvox)	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (24%); ↓ AUC (31%); ↓ plasma concentrations (32%). ▪ Dosage modifications not routinely recommended but smokers may need ↑ dosages.
Haloperidol (Haldol)	▪ ↑ Clearance (44%); ↓ serum concentrations (70%).
Heparin	▪ Mechanism unknown but ↑ clearance and ↓ half-life are observed. Smoking has prothrombotic effects. ▪ Smokers may need ↑ dosages due to PK and PD interactions.
Insulin, subcutaneous	▪ Possible ↓ insulin absorption secondary to peripheral vasoconstriction; smoking may cause release of endogenous substances that cause insulin resistance. ▪ PK & PD interactions likely not clinically significant; smokers may need ↑ dosages.
Insulin, inhaled (Exubera)	▪ Systemic exposure is greatly increased in smokers; greater maximal insulin concentrations (3–5 fold) and faster (by 20-30 minutes) ; ↑AUC 2–3 fold ▪ Contraindicated in smokers and those who have discontinued smoking for less than 6 months.
Mexiletine (Mexitil)	▪ ↑ Clearance (25%; via oxidation and glucuronidation); ↓ half-life (36%).
Olanzapine (Zyprexa)	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (98%); ↓ serum concentrations (12%). ▪ Dosage modifications not routinely recommended but smokers may require ↑ dosages.
Propranolol (Inderal)	▪ ↑ Clearance (77%; via side chain oxidation and glucuronidation)
Tacrine (Cognex)	▪ ↑ Metabolism (induction of CYP1A2); ↓ half-life (50%); serum concentrations three-fold lower. ▪ Smokers may need ↑ dosages.
Theophylline (Theo Dur, etc.)	▪ ↑ Metabolism (induction of CYP1A2); ↑ clearance (58–100%); ↓ half-life (63%). ▪ Levels should be monitored if smoking is initiated, discontinued, or changed. ▪ ↑ Clearance with second-hand smoke exposure. ▪ Maintenance doses are considerably higher in smokers.
Tricyclic antidepressants (e.g., imipramine, nortriptyline)	▪ Possible interaction with tricyclic antidepressants in the direction of ↓ blood levels, but the clinical importance is not established.
Pharmacodynamic Interactions	
Benzodiazepines (diazepam, chlordiazepoxide)	▪ ↓ Sedation and drowsiness, possibly caused by nicotine stimulation of central nervous system.
Beta-blockers	▪ Less effective antihypertensive and heart rate control effects; might be caused by nicotine-mediated sympathetic activation. ▪ Smokers may need ↑ dosages.
Corticosteroids, inhaled	▪ Asthmatic smokers may have less of a response to inhaled corticosteroids.
Hormonal contraceptives	▪ ↑ Risk of cardiovascular adverse effects (e.g., stroke, myocardial infarction, thromboembolism) in women who smoke and use oral contraceptives. ▪ ↑ Risk with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women age 35 and older.
Opioids (propoxyphene, pentazocine)	▪ ↓ Analgesic effect; smoking may ↑ the metabolism of propoxyphene (15–20%) and pentazocine (40%). Mechanism unknown. ▪ Smokers may need ↑ opioid dosages for pain relief.

Adapted from Zevin S, Benowitz NL. Drug interactions with tobacco smoking. *Clin Pharmacokinet* 1999;36:425–438.

Address from which the smoking cessation service was provided: ……..

……..

……...

……

……

Tel No:……..

Date:

Re: PRESCRIPTION REQUEST for Nicotine Replacement Therapy (NRT)

Dear Dr.

Your Patient: DOB:

Quit Date:

Your patient has:

☐ has indicated that they are taking **anti-psychotic medication** which is a caution for us under Protocol. Please would you assess this patient's clinical suitability for NRT and prescribe the following products if you deem it appropriate

……

☐ has requested the following NRT product which is not available on Direct Supply from our Formulary

……

Thank you for your co-operation. Please let us know if you have any concerns.

Signature……. Advisor Name (Print)…….……