Smoking and respiratory disease: the role of the community nurse

Camilla Peterken

The relationship between smoking and respiratory disease has long been established and smoking is recognised as a risk factor for chronic obstructive pulmonary disease (COPD) (Fletcher and Peto, 1977), lung cancer (Doll et al, 2004) and interstitial lung diseases (Bradley et al, 2008), as well as contributing to the symptoms of asthma (Siroux et al, 2000). However, when working with patients who have lived with their disease for some time, or who may feel it is too late to benefit from change, it is important to do more than simply reiterate the risks. The link between continued smoking, progression of respiratory disease, exacerbation of the condition and the detrimental effects of continued smoking on the efficacy of some treatments should also be communicated. This article looks at the risks of smoking, as well as providing guidance for community nurses on how to bring up the topic with their patients in a non-confrontational manner.

KEYWORDS:
COPD ■ Smoking ■ Respiratory disease ■ Screening

EFFECTS OF SMOKING

Nicotine itself is not the primary cause of harm from smoking, but it is a known stimulant and highly addictive. The main reason that people continue to smoke is that they are addicted to nicotine and the unpleasant withdrawal symptoms prevent them from sustaining cessation.

Tobacco smoke contains more than 4,000 chemicals, many of which are known irritants (Richter et al, 2008). Nicotine is addictive and keeps people smoking, but it is the combination of tars, carcinogens, metals and free radicals that are toxic and cause greatest harm.

Smoking also causes carbon monoxide to attach itself to haemoglobin to form carboxyhaemoglobin, which reduces the oxygen-carrying capacity of the blood and its subsequent supply to the tissues (Morgado et al, 1994). This affects both cardiac and respiratory function — the heart has to work harder to pump less oxygenated blood through arteries that are narrowed and hardened by the interaction of toxins with cholesterol and which leads to a build-up of fatty deposits on the artery walls. However, carbon monoxide is removed from the lungs in just 24 hours and the positive benefits to breathing and circulation can be seen within months (US Department of Health and Human Services, 1990).

The tar present in cigarettes contains carcinogens that are readily transferred from the lungs to the bloodstream, causing cancers in many different sites of the body (Dresler, 2003). Seventy percent of inhaled tar stays within the lungs and directly affects lung function. Tar also induces specific liver enzymes, which increase the metabolism of some drugs, reducing their efficacy (Zevin and Benowitz, 1999).
Nicorette® Invisi Patch Prescribing Information:
Assist smokers who are unwilling or unable to smoke, and as a safer alternative to smoking dependence. It is indicated to aid smokers wishing to quit or reduce prior to quitting, to assist smokers who are unable to stop smoking cigarettes per day. A quit attempt should be made as soon as the smoker feels ready. When smoking has been reduced to less than 10 cigarettes per day, smokers are recommended to start at Step 2 (15mg). Continued smoking may alter the metabolism of certain drugs. Transferred dependence is rare and less harmful and easier to break than smoking dependence. May enhance the haemodynamic effects of, and pain response, to adenosine. Keep out of reach and sight of children and dispose of with care. High blood pressure, hyperthyroidism, generalised dermatological disorders. Angioedema and urticaria have been reported. If symptoms persist the advice of a healthcare professional should be sought.

Nicorette QuickMist Prescribing Information:
Smoking Cessation: Adults (over 18 years of age): Smoking is harmful and easier to break than smoking dependence. May enhance the haemodynamic effects of, and pain response to, adenosine. Keep out of reach and sight of children and dispose of with care. High blood pressure, hyperthyroidism, generalised dermatological disorders. Angioedema and urticaria have been reported. If symptoms persist the advice of a healthcare professional should be sought.

Nicorette® Invisi Patch Prescribing Information:
Temporary Abstinence: Use a NICORETTE® Invisi Patch in those situations when you can’t or do not want to smoke for prolonged periods (greater than 16 hours). For best results, most smokers are recommended to start an 1mg/16 hours patch (Step 1) and use one patch daily for 4 weeks. Gradual weaning from the patch should then be included. One 1mg/16 hours patch (Step 1) should be used daily for 2 weeks followed by one 10mg/16 hours patch (Step 2) daily for 2 weeks. Lighter smokers (i.e. those who smoke less than 10 cigarettes per day) are recommended to start at Step 2 (15mg) for 4 weeks and decrease the dose to 10mg for the final 4 weeks. Those who experience no or minor side effects with the 15mg/16 hours patch (Step 1), which do not resolve within a few days, should change to a 10mg patch (Step 2). This should be continued for the remainder of the 8-week course, before stepping down to the 10mg patch (Step 3) for 4 weeks. It is important in this phase of nicotine withdrawal that the nicorette is used to replace the cigarettes used up to that day. Nicorette is now recommended to use one patch to replace smoking-free intervals and with the intention to reduce smoking as much as possible. Starting dose should follow the smoking cessation instructions above. For best results, most smokers are recommended to start with Step 2 (15mg). Nicorette should be used whenever the urge to smoke is felt or to prevent cravings in situations where these are likely to occur. If nicotine patches are not effective, they may be used up to twice daily. Nicorette can be given to smokers who are unwilling to reduce or to prevent cravings in situations where these are likely to occur. Smoking will not be able to stop smoking immediately, but should continue to reduce cigarette consumption until they are able to stop smoking. Nicorette should not be used if smoking is harmful and easier to break than smoking dependence. May enhance the haemodynamic effects of, and pain response, to adenosine. Keep out of reach and sight of children and dispose of with care. High blood pressure, hyperthyroidism, generalised dermatological disorders. Angioedema and urticaria have been reported. If symptoms persist the advice of a healthcare professional should be sought.

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Nicorett QuickMist Prescribing Information:
Presentations: aerosol mouthspray containing 1.0 mg nicotine, corresponding to 2.9 mg nicotine base dose. Usage: Temporary abstinence and pre-cessation to assist smokers who are unwilling or unable to smoke, and as a safer alternative to smoking dependence. May enhance the haemodynamic effects of, and pain response to, adenosine. Keep out of reach and sight of children and dispose of with care. High blood pressure, hyperthyroidism, generalised dermatological disorders. Angioedema and urticaria have been reported. If symptoms persist the advice of a healthcare professional should be sought.

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Tobacco smoke also contributes to vasoconstriction and thus increased blood pressure, heart rate and cardiac workload, which reduces oxygen delivery to the tissues (Ambrose, 2004; National Centre for Smoking Cessation and Training [NCSCT], 2011). The subsequent rise in red blood cell production leads to increased blood viscosity, reduced oxygen supply to the body’s tissues and potential thrombosis. Reduced oxygenation also decreases the efficacy of radiotherapy treatment and can possibly lead to chemo-insensitivity (Yamashita et al, 2014).

Smoking also causes increased mucous production and a narrowing of the small airways, as well as a decrease in ciliary function (cilia are microscopic, hair-like structures that help to ‘sweep’ the airways clean of harmful substances) (Ambrose, 2004; NCSCT, 2011). Finally, smoking is linked to decreased immunity, which leads to atherosclerosis and increased risk of infections such as pneumonia, tuberculosis and influenza (Ambrose, 2004; NCSCT, 2011).

Deaths from smoking
Smoking causes early death from cancer and heart disease, although 36% of all smoking-related deaths are due to respiratory disease (Health and Social Care Information Centre, 2013). In 1997, smoking was responsible for the majority of deaths from lung cancer and chronic obstructive pulmonary disease (COPD), as well as 17% of deaths from pneumonia (Royal College of Physicians, 2000).

Nearly 20 years later, smoking still has a significant impact on the population, notably the increasing number of patients living with chronic diseases caused by smoking and the decreasing quality of life caused by continued smoking. This is where the community nurse can play a significant role.

ASTHMA

For every 1% increase in smoking prevalence in the asthma population, there is a 1% increase in asthma-related admissions to hospital (Purdy et al, 2011). Active smokers will experience more severe asthma symptoms, accelerated decline in lung function and impaired short-term therapeutic responses to corticosteroids compared to non-smokers with asthma — smoking will also increase the clearance of theophylline (drug used for respiratory diseases such as COPD and asthma) from the liver (Thomson and Spears, 2005; Polosa and Thomson, 2012).

It is, therefore, extremely important that people with asthma understand the impact smoking can have on their treatment, the likelihood of hospital admission and the decline in lung function.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

COPD is the collective name for a range of lung conditions including emphysema, chronic bronchitis, and chronic obstructive airways disease. COPD causes a narrowing of the airways and subsequent difficulties in breathing — this is called airflow obstruction. Symptoms include breathlessness, persistent coughing, increased phlegm production and chest infections.

Smoking cessation is the most effective method of slowing the poor respiratory function associated with COPD (Global Initiative for Chronic Obstructive Lung Disease [GOLD], 2014). Stopping smoking should be a core tenet of the treatment plan for any patient with COPD, not least because cessation is associated with a 43% decreased risk of hospitalisation (Godtfredsen et al, 2002). It is important that patients realise that abstaining from smoking significantly reduces the risk of exacerbating their COPD symptoms.

RESPIRATORY TRACT CANCERS

Dresler (2003) states that any patients diagnosed with cancer must receive support to give up smoking. Continued smoking after a cancer diagnosis negatively impacts on surgical outcomes as well as affecting the efficacy of radiotherapy and chemotherapy. Mazza et al (2010) suggest that smokers who have cancer should be informed that smoking will impact on survival and that healthcare professionals should offer smoking cessation advice and support patients with withdrawal symptoms.

ROLE OF THE COMMUNITY NURSE

Raising the subject of smoking should be a routine part of any community nursing assessment, but any conversation about smoking should involve far more than simply ticking the ‘smoking status’ box on the assessment form — it should also encompass the patient’s wellbeing and quality of life. The community nurse should be aiming to delay and prevent exacerbation and/or development of any smoking-related disease, as well as ensuring that patients access the best possible support for smoking cessation (temporary or permanent). Essentially, the community nurse’s role is to empower patients to make positive choices about their respiratory health — smoking is a major part of this.

Useful interventions

In the most simplistic terms, the community nurse should (National Institute for Health and Care Excellence [NICE], 2006):

- Ask
- Advise
- Act.

Asking

Initially, the patient should be asked about their smoking status, for
Relvar Ellipta is indicated for patients (≥12 years) uncontrolled on inhaled corticosteroids and as needed short acting beta2-agonists.

Asthma:

- The first ICS/LABA combination to deliver continuous 24-hour efficacy in a practical, once-daily dose.
- Delivered in a straightforward device
- That offers value to the NHS
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Use increases. Therapy should not be abruptly stopped without physician supervision due to risk of symptom recurrence. Asthma-related adverse events and exacerbations may occur during treatment. Patients should continue treatment but seek medical advice if asthma symptoms remain uncontrolled or worsen after initiation of Relvar. Systemic effects: Systemic effects of inhaled corticosteroids may occur, particularly at high doses for long periods, but much less likely than with oral corticosteroids. Possible Systemic effects include: Cushinising syndrome, cushingoid features, adrenal suppression, decrease in bone mineral density, growth retardation in children and adolescents, cataract, glaucoma. More rarely, a range of psychological or behavioural effects including psychosis, hyperactivity, sleep disorders, anxiety, depression or aggression (particularly in children). Increased incidence of pneumonia has been observed in patients with COPD receiving regular treatment with inhaled corticosteroids and as needed short-acting beta2-agonists. If patients are inadequately controlled then the dose can be increased to one inhalation daily of Relvar 184/22mcg. Relvar 184/22mcg can also be considered for patients who require a higher dose of inhaled corticosteroid in combination with a long-acting beta2-agonist. If patients are inadequately controlled the dose can be increased to one inhalation daily of Relvar 184/22mcg. Relvar 184/22mcg can also be considered for patients who require a higher dose of inhaled corticosteroid in combination with a long-acting beta2-agonist. Regular review patients and reduce dose to lowest that maintains effective symptom control. COPD: one inhalation once daily of Relvar 92/22mcg.

Contraindications: Hypersensitivity to the active substances or to any of the excipients (lactose monohydrate & magnesium stearate).

Precautions: Pulmonary tuberculosis, severe cardiovascular disorders, chronic or untreated infections, diabetes mellitus. Paradoxical bronchospasm – substitute alternative therapy if necessary. In patients with hepatic or moderate to severe impairment 92/22mcg dose should be used. Acute symptoms: Not for acute symptoms, use short-acting inhaled bronchodilator. Warn patients to seek medical advice if short-acting inhaled bronchodilator

Adverse events should be reported. For the UK, reporting forms and information can be found at www.mhra.gov.uk/yellowcard.

For Ireland, adverse events should be reported directly to the IMB: Pharmacovigilance Section, Irish Medicines Board, Kevin O’Malley House, Earlsfort Centre, Earlsfort Terrace, Dublin 2, Tel: +353 1 6794971. Adverse events should also be reported to GlaxoSmithKline on 0800 221 441 in the UK or 1800 244 256 in Ireland.


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example, what do they know and understand about smoking and their condition? How would they feel about quitting? If they have recently been an inpatient, how did they cope with not smoking? It is also useful to find out if the patient used any measures such as nicotine replacement therapy (NRT) (i.e. patches), and if they would like to carry on? The nurse can also ask if the patient might be willing to try temporary abstinence while having treatment, even if they cannot face quitting for good. Patients do not always need more information, but they often need to understand more about the link between smoking and their condition.

Advice
Community nurses should advise the patient that stopping smoking is one of the most important steps that they can take to improve their respiratory and general health and that it is never too late to improve their respiratory function. Patients should be reassured that measures like NRT and expert support do work — in fact, people are four times more likely to give up smoking with this kind of support than on their own (Kanner et al, 1999). Also, it should be stressed that services can be provided near to where they live or by phone if they are housebound.

Action
Nurses can act by organising a referral to their local NHS ‘stop smoking’ service and making sure that, if the patient has been using NRT while in hospital for example, they have repeat prescriptions.

It is also important to simply check with patients how they are doing at each visit and to encourage them to notice any changes to their health as a result of reducing or stopping smoking.

How to work with patients
When approaching smoking cessation, it can be helpful for the nurse to see it as a crucial part of patients’ care and treatment, rather than as ‘health promotion’ — this can legitimise smoking cessation and gives it a greater sense of importance.

Also, community nurses should remember that patients may feel guilty and embarrassed about smoking, regarding it as a ‘dirty habit’. It is important to show interest, but to remain emotionally detached — patients should not be giving up smoking to please the nurse, but rather to help themselves. Also, it is more likely that patients will provide an honest and open assessment of their smoking status if they view the nurse as a healthcare professional first, rather than as a ‘confidant’.

Always remember that patients are dealing with a difficult addiction and a set of ritual behaviour that may have been part of their lives for many years. They may have real concerns about failing and how they will cope without smoking and for many — especially those who are isolated, lonely and bored at home — smoking will represent a regular break in the day-to-day monotony. Nurses should listen to patients and explore what smoking means to them — in this way they will be better able to tailor smoking cessation advice so that it is relevant to the patient’s particular situation.

Tips for bringing up smoking
It can sometimes be difficult for community nurses to know what to say once they have asked a patient if he or she smokes, especially if the patient appears resistant. Using motivational interviewing principles and skills, such as reflective listening and affirmation, can support them in continuing the conversation about smoking (Miller and Rollnick, 1991). An example of a typical smoking cessation conversation using these techniques is shown in Table 1.

Brief interventions.
The community nurse can also play an important role in smoking cessation by using some relatively brief interventions:

- Bring smoking into the conversation at regular intervals
- Provide information relevant to

Table 1: Bringing up smoking as part of a patient consultation

| Nurse: ‘What have you heard about smoking and COPD?’ — finding out what the patient knows |
| Patient: ‘I know it’s no good for me, the doctor keeps bringing it up…’ |
| Nurse: ‘It sounds like you understand it doesn’t help your COPD?’ — reflective listening and affirmation |
| Patient: ‘But what’s the point? We can’t turn the clock back can we?’ |
| Nurse: ‘You don’t feel it’s worth it?’ — reflecting meaning |
| Patient: ‘Not really.’ |
| Nurse: ‘I can understand that, and we can’t reverse the damage, but giving up smoking could make a real difference to the amount of oxygen you receive on a daily basis and that can happen quite quickly. You could also find you don’t need to get admitted to hospital quite so often?’ — providing relevant information in the ‘here and now’ |
| Patient: ‘Well, that would be good. I seem to go back to hospital every few months and each time it’s worse.’ |
| Nurse: ‘So would that be a reason to have a go at quitting? Would you like me to refer you to the local stop smoking service? They can offer you free support over the phone if you don’t feel up to going to see them and they can provide medication such as nicotine patches?’ |

In this conversation the patient is enabled to consider the control they might have and to express both their concerns and their reasons for quitting. Finally, the community nurse is able to make sure the patient knows that effective free services do exist.
the patient’s condition (such as cessation leaflets) and talk about the short and long-term benefits of cessation.

- Help the patient understand the link between smoking and any respiratory condition, especially how the illness may have developed, how it is exacerbated and the efficacy of treatment.
- Organise a referral and make sure the patient has access to pharmacotherapies, such as NRT.
- Provide positive feedback on any improvements in the patient’s condition.

What should the patient expect from treatment?
Smoking cessation services funded by the NHS are available throughout the country. Community nurses can refer patients to these either by phone or fax, or often digitally. Treatment is offered either in one- to one sessions or in groups run at clinics, GP surgeries, hospitals, pharmacies, community venues or sometimes over the phone.

Smoking cessation programmes typically provide a six- to seven-week programme of support, including pharmacological treatments like NRT or drugs like varenicline (marketed as Champix® in the UK), alongside behavioural support to help patients plan for life without smoking — this usually includes identifying improvements to their health and monitoring their cessation through carbon monoxide measuring (using a small hand-held device that measures the amount carbon monoxide as the patient exhales), as well as relapse prevention.

CONCLUSION
Smoking has long been linked with respiratory disease and is a recognised risk factor for COPD, asthma, lung cancer and interstitial lung disease. Community nurses are tasked with improving the quality of life for people living at home with long-term conditions and, for many, smoking is a large part of this, affecting the healing and maintenance of many respiratory conditions.

Community nurses can make a valuable contribution to the health of people who smoke by helping them to improve their quality of life and avoid admission by stopping smoking. This article has looked at a range of interventions that will help community nurses communicate with their patients around smoking, as well providing a few pointers as to how patients can be supported if they decide to give up.

REFERENCES

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