The Breathe *feature where we give you an expert and a topic, and you have the chance to ask them any questions you wish via breathe@ersj.org.uk*

Ask the expert: Smoking cessation

Q **1. My question is about the financing of national programmes. In Romania, funding has substantially decreased, although the national smoking cessation programme was very successful last year. How can programmes proceed on tight budgets, and how can we secure further funding?**
A. Ionita, Romania

A 1. If the budget is poor, the programme should target the most cost-effective interventions, ask for free radio and television presentations, collaborate with various associations (medical and social, *etc.*) for voluntary anti-smoking interventions. Cessation programmes can be partially charged to companies and administrations. The programme should increase the awareness of the funding agencies and of the government about the cost-effectiveness of the various types of interventions, and call for external funding agencies to be involved (*e.g.* the Bloomberg Foundation).

Q **2. I am a respiratory consultant based in the UK. As a member of my hospital's smoking cessation steering committee, I conducted an audit of the smoking habits of inpatients on the respiratory wards. Based on these results, I approached the local primary care trust, which has now funded four smoking cessation facilitators who will work on the wards with a view to helping inpatients stop smoking. This is a pilot project, with the aim of helping as many people as possible to quit smoking. The fact that they are in hospital with an illness (probably smoking-related) makes it more likely that this intervention will be successful... we hope. At present, we only offer nicotine replacement therapy (NRT) in the form of patches. I would be grateful if you could answer the following questions.**
a) Is it important to have more than one type of NRT product in a hospital formulary? That is to say, would it be more likely to be a successful intervention with more than one of these? I ask this as there could be cost implications to the hospital to stock more than one NRT and justification for this could only be based on evidence of effectiveness and efficacy.
b) Can we start varenicline therapy in an acute setting, or is it better to allow time for the patient to recover before this drug is considered?
c) Are there any studies that have looked at the correlation between the level of knowledge of hospital staff regarding smoking cessation interventions and the level of uptake by patients of the smoking cessation services on offer at that healthcare institution?
d) What policy do you follow in Europe towards patients and relatives who smoke on hospital premises (just outside buildings)? Even though our hospital is a smoke-free site, I am led to believe that, legally, we do not have the power to force people to stop smoking in the open air outside hospital buildings because this is not illegal under current legislation. If we were to confront the individuals who smoke in these areas, we could be accused of having infringed their human rights.
A.R. Guhan, Middlesbrough, UK

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Competing interests
J. Prignot is subsidised by Pfizer as an independent consultant

A 2a. The response is yes indeed, since the choice of type of NRT should be proposed to patients, and that the success rate of combination therapy with patch and oral forms of nicotine is larger than with one type alone (OR 1.42, 95% CI 1.14–1.76) and is safe [1, 2].
A2b. Minor side effects of varenicline are frequent and could be disturbing for patients in an acute setting. I think it is better to delay this treatment till recovery.
A2c. To date, I am not aware of any study on the subject of correlation between level of knowledge of hospital staff about smoking cessation interventions and the level of uptake by patients of smoking cessation services. It seems likely that a positive correlation should exist.
A2d. In a smoke-free hospital, patients choose for themselves to go outside the building to smoke; it seems to me that if we are confronted with them, we are not allowed to forbid them to smoke outside, since the risks of passive smoking are practically nonexistent in open air. Some hospitals provide an isolated, well-ventilated smoking room close to the entrance for patients and visitors.

Q **3. My question is about the role of the internet, mobile phones and e-mail in the quitting process, given that specialised smoking clinics reach a limited number of patients. We have already introduced a mobile phone-based quitting project in Turkey, in collaboration with researchers in the USA.**
S. Emri, Ankara, Turkey

A 3. Smoking cessation *telephone help lines* (frequently free of charge) were first developed many years ago, not only in countries like Canada, where smokers often live far away from specialised smoking cessation clinics, but also in countries with high population densities (*e.g.* Belgium).
General information about smoking cessation is provided by non-specialised counsellors (reactive approach) and, in some selected calls from smokers who have decided to quit, by specialised counsellors who support the smoker during repeated sessions (proactive approach), or refer them to smoking cessation clinics or to a general practitioner.
Adding proactive telephone counselling to a minimal intervention compared with minimal intervention alone increases long-term abstinence rates by approximately 50% (OR 1.56). Additional telephone counselling after a single intervention for hospital inpatients has been shown to have a positive effect [3]. NRT provided during the telephone support is safe as long as clients are screened adequately according to the labelling instructions [4]. In a pilot study, a telephone-based intervention aiming not to support smokers but healthy persons trying to help smokers to quit (91.5% females) was not associated with higher smoking abstinence rates or quit attempts in smokers with lower levels of readiness to quit [5].
In a very intensive *mobile phone-based smoking cessation support* conducted in the UK, 200 participants were recruited using radio, leaflets and posters, and randomly assigned to a control group receiving fortnightly simple generic text messages or to the intervention group with daily text messages until the quit day then five messages per day for 4 weeks and three messages per week for 26 weeks. Messages were adapted according to sex, age, educational level, socioeconomic status and Fagerström test. Any self-reported smoking cessation was verified by cotinine salivary testing. At 4 weeks, the cessation rate was doubled (26%) in the intervention *versus* the control group (12%) (RR 2.08, 95% CI 1.11–3.89), but at 6 months these dffierences were no longer significant (8.5% *versus* 6.7%) (RR 1.28; 95% CI 0.46–3.53) [6]. The same type of results have been obtained in New Zealand, where no definite difference could be concluded at 6 months [7].
A youth-oriented (≥16 years) smoking cessation intervention delivered solely by *multimedia mobile phone* was developed with the collaboration of 180 young people in forum groups; it included short videos, music for relaxation, interaction with others in the programme, honest role models aiming at cessation, animations and the opportunity to call in case of cravings. A pilot study of a 4-week programme among 17 participants showed a sufficiently high degree of interest and a 60% cessation rate to initiate a randomised controlled trail testing the efficacy of the programme [8]. Mobile phone technology in itself may appeal to young people, encour-

age participation, and be received anytime, anywhere and without any loss of anonymity.
Computer technology and psychological theory can be used to produce individually tailored documents that can be disseminated on a large scale, at low cost and repeatedly. In spite of the poor cessation rates linked with such low-intensity interventions (≤5% higher than in control groups who received standard materials or no intervention), their public health impact can be large due to their potential massive recruitment capacity. The most frequently used features are individually tailored counselling letters, discussion forums and personal stories. Since most of these programmes offer a paper version, their participants do not need to be computer literate or have access to a computer.
Computer-tailored counselling programmes can increase smoking cessation rates among users of NRT products.
Proactive recruitment for those computer programmes by mail or over the phone can result in the participation of large numbers of smokers with low motivation to quit; outcomes are positive in some studies, but negative in others. They can be proposed to their patients by physicians unwilling or unable to go further than simple advice about quitting [9].
The impact of computer-tailored programmes on long term (5-year) abstinence is still unknown. In two different internet programmes with personalised counselling letters followed by monthly e-mail reminders, 7 days' self-reported abstinence 2.5 months after entry of the programme were 10.9% and 8.9% in an intention-to-treat analysis [10].
After recruitment *via* a link on the American Cancer Society website, 6,451 subjects were eligible. Several tailored interactive sites were used, without significant differences in terms of cessation among the 38% of subjects who were followed up for 13 months. The cessation rate was 12% among the non-depressed and 8% among the depressed (the latter was close to the rate in those receiving no intervention) [11].
The most frequently used tools of the users of Quitplan.com (figure 1) are interactive quit planning tools (77%) with a 30-day abstinence rate of 9.7% (95% CI 7.3-12.1) at 6 months [12].
Website or paper-based tailored programmes of smoking cessation support are also provided free for varenicline users.
In conclusion, telephone, mobile phone, internet and e-mail can play a role in the smoking cessation process by themselves or in a complementary fashion; their impact is limited but their reach is potentially high, resulting in a potentially significant public health effect.

Figure 1
Quitplan.com

Q A 4. How would you plan a smoking cessation programme for teenagers?

K. Parkinson, London, UK

4. In order to plan a smoking cessation programme, one should take into account the specificities of the smoking pattern of the adolescent (from situational, irregular and variable to regular), their level of nicotine dependence (frequently high despite their relatively short smoking histories), any possible concomitant abuse of other drugs (alcohol and marijuana, *etc.*) and their behavioural characteristics (development of autonomy, search for adulthood and, in many cases, rebellion against authority).
While only 5% of smoking adolescents consider that they will be still smoking 5 years later, 75% are smokers 8 years later [13].
Among students in grades 9–12 who have ever smoked cigarettes daily, 60% have tried to quit in the previous year [14]. The use of counselling approximately doubles estimated long-term abstinence rates in adolescent smokers compared with usual care or no treatment (meta-analysis of seven studies: 11.6% *versus* 6.7%) [15].
Only one-to-one interventions are considered here. These can happen either as part of regularly scheduled preventive and medical visits (at school and before enrolment in a job, *etc.*) or during a medical visit or hospital stay. The following points should be considered when planning a smoking cessation programme for teenagers.
Confidentiality should be assured (*i.e.* with regard to the family), and clinicians should, with agreement of the adolescent smoker, ask about tobacco and other drug use.
For those who smoke, behavioural interventions (*e.g.* motivational interviewing) increase the

chance of successful cessation.

The approach must be non-judgmental and empathetic (*i.e.* the health professional should try to understand the point of view of the patient and tell him that he is aware of it).

Using open questions allows smokers to express their attitudes and behaviour concerning tobacco use and their goals for the future.

The smoker should be given the opportunity to relate the "pros" and "cons" he or she personally feels when smoking. When the "cons" appear to outweigh the "pros", the decision balance will lean towards a decision of cessation [16].

Information about health risks should focus more on the short-term effects of smoking (*e.g.* decreased performances during sport or sexual activities) than later consequences, such as chronic obstructive pulmonary disease, cancer or cardiovascular disease; adolescents are prone to give more weight to the present than to the future.

Information concerning the marketing tactics of the tobacco industry is likely to induce a reaction in adolescents, who hate to be manipulated, particularly regarding the implied decreased risks of so-called light cigarettes.

Another way to obtain progress towards cessation is to ask smokers to confront their current behaviour with their expressed goals. The discrepancies evoke "dissonance": a step forward.

The ability to resist the urge to smoke can be evaluated by an open question like "What would you find difficult if you stopped smoking?" This allows the caregiver to explain existing coping skills to the smoker (*e.g.* self-monitoring of tobacco use, waiting for urges to subside, relaxation, drinking a glass of water and physical exercise).

If the smoker does not show any trend towards changing his or her smoking behaviour, the caregiver can avoid confrontation by evoking a hypothetical cessation.

Resistance expressed by the adolescent smoker should be attributed to an inadequacy of the caregiver–patient relationship, rather than to an intrinsic characteristic of the smoker.

The healthcare provider should leave the free choice to the adolescent smoker and avoid taking an authoritative expert position [16].

A reduction in smoking can be accepted as a temporary step towards cessation and considered for those who are unwilling or unable to stop, even if smoking reduction does not translate into harm reduction.

Any progress on the way to cessation should be congratulated. The caregiver should use the opportunity of repeated visits to strengthen his message and help the adolescent smoker in his progress towards cessation.

The control of co-addictions should be considered, taking the priorities of the patient into account. Cessation rates are lower and relapse rates higher in presence of co-addictions.

To what extent is additional pharmacotherapy safe and useful for adolescent smokers decided to quit? In spite of the fact that nicotine addiction occurs frequently after a short period of smoking, the 2008 US Guidelines do not recommend the use of NRT or bupropion for adolescents, since there is little evidence that these medications are effective in promoting long-term abstinence [15]. The same attitude is adopted by the Cochrane collaboration in the UK [17]. More pragmatic and positive advice is given by McEwen *et al*. [3], for whom the decision to use NRT in adolescents should be based upon the smoker's determination to quit and level of dependence, as opposed to age. Given that NRT is less harmful than smoking, safety concerns should not be a barrier to use.

The pharmacokinetics of varenicline, a cessation drug more effective than bupropion and NRT, are similar in adolescents and adults and it appeared safe in a trial of 57 subjects [18]. Up to now, no results of its efficacy in adolescent smokers have been published. In the future, nicotine vaccine could also be considered for adolescents at risk.

The results of an individual face-to-face intervention are likely to be better when the adolescents live in a setting of "denormalisation" of smoking behaviour, resulting from community-based interventions, and legislative measures such as advertising bans, smoking bans, smoke-free areas and restrictions on the sale of tobacco products. Relapses are indeed frequently linked with exposure to smoking cues for which the adolescent is particularly sensitive.

Numerous other approaches to preventing smoking initiation and aiding cessation do exist:

school- or classroom-based clinics, family-based approaches, telephone helplines, computer-based programmes, teen smoking-oriented websites and mobile phone smoking cessation interventions.
For many of those interventions, the currently available data are often incomplete (attrition is not assessed or high), are devoid of control groups, long term follow-up and biochemical validation of cessation, and are of limited statistical power so that their (relative) efficacy cannot be adequately assessed. Therefore, adolescent smoking cessation remains a large research field.
In absence of evidence-based data, these present recommendations should be seen as an expert's advice.

If you would like to comment on these views, please write to breathe@ersj.org.uk

Q **5. Would you adjust your approach to smoking cessation according to gender. If so, how?**
J. Kelly, London, UK

A 5. In spite of some contradictory results in the literature, it seems that females are less likely than males to quit smoking successfully. This was related to the major influence of the psychobehavioural elements of their smoking dependence. Other barriers to smoking cessation include greater likelihood of depression, greater weight control concerns and hormonal cycles [15, 19]. The nicotine dependence element also plays a role in females' difficulty in quitting, but NRT is nevertheless less successful in females than in males.
A meta-analysis of the 14 placebo-controlled nicotine patch trials (n=6,250) for which 6-month outcome results could be determined by sex, showed that the benefit due to nicotine *versus* placebo was only half as large in females as in males. Pooled absolute cessation rates at 6 months for nicotine and placebo patches, respectively, were 20.1% and 10.8% in males and 14.7% and 10.1% in females. The pooled odds ratio of quitting with nicotine patch *versus* placebo in males *versus* females was 1.40 (95% CI 1.02–1.94; p=0.004) and is thus significant [20]. Likewise, nicotine gum may be less effective in relieving withdrawal among females *versus* males [21]. A lower overall cessation rate was not observed in females *versus* males among those receiving placebo patch (10.2% *versus* 10.8%) [20]. It was hypothesised that females receive less benefit from NRT because, relative to males, they smoke more for non-nicotine reinforcement (*e.g.* smoking cues) and less for nicotine reinforcement [20].
Nevertheless, with bupropion and varenicline, the cessation rates are similar among males and females. In a meta-analysis of 12 placebo-controlled bupropion trials, this medication was as effective in females as in males (for abstinence at the end of treatment *versus* placebo: OR 2.47 and 2.53) but overall, regardless of treatment, females were less successful at quitting than males were (OR 0.79) [22]. Varenicline is equally efficacious in females and males: OR 3.63 and 3.75 *versus* placebo, respectively (weeks 9–12) [23]. For both drugs, no treatment–sex interaction was observed. In these trials, the sex differences seems thus limited to the weaker response to NRT.
The clearance of nicotine and cotinine is significantly faster in females than in males, and particularly in females taking oestrogen-containing oral contraceptives, suggesting that nicotine metabolism may be influenced by sex hormones [24]. This could be related with the low efficiency of the normal doses of NRT in females. Faster nicotine metabolisers are effectively 50% less likely to be abstinent after nicotine patch than slow metabolisers [25].
A specific approach is thus warranted, at least for very dependent females. The style of motivational interviewing is preferable for females as for males.
Information should highlight the health consequences of smoking that are specific to females, *e.g.* cervical cancer, increased cardiovascular risks of oral contraception, early menopause, postmenopausal osteoporosis, fertility reduction and, evidently, the numerous consequences of periconceptional smoking. Females are often concerned with their physical appearance, so the risk of numerous and deep wrinkles and of fragile hair in chronic smokers should be stressed.
Learning to cope with smoking cues is an important part of the psychobehavioural support (resisting urges, self-monitoring and relaxation, *etc.*).
Techniques aiming at reducing the weight increase often associated with smoking cessation should also be learned.

When a pharmacological approach is indicated, if NRT is chosen, particular attention is needed for the control of withdrawal symptoms: when these persist, a higher dose and the use of combined NRT forms are needed as a result of the faster metabolism of nicotine in females.
Varenicline and bupropion seem nevertheless more adapted for females, since their efficacy is equal in both sexes, and anyway greater than that of nicotine substitution; it is necessary to take into account the contraindications and to ensure the necessary follow-up.
The issues linked with periconceptional smoking (preconception, pregnancy and breastfeeding), a specific problem in itself, are not approached here.

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Further reading

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