Smoking cessation: evidence based recommendations for the healthcare system

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Editorial by Coleman et al

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This article summarises the new Smoking Cessation Guidelines for Health Professionals, published in full in *Thorax*,[1] along with guidance on the cost effectiveness of interventions for smoking cessation.[2] The purpose of the guidelines is to recommend and promote the integration of effective and cost effective interventions into routine clinical care throughout the healthcare system, and they are aimed at health commissioners, managers, and clinicians. They are the first professionally endorsed, evidence and consensus based guidelines on smoking cessation for the English healthcare system.

At the time of going to press the full guidelines have been endorsed by more than 20 organisations (see box).

The need for clinical guidelines

Each year in the United Kingdom smoking causes more than 120 000 deaths. It remains the largest single preventable cause of death and disability in the country[3] and costs the NHS in England about £1500m a year.[2] The prevalence of cigarette smoking in adults currently runs at 28% and may be increasing.[4] A range of tobacco control measures can be effective in reducing tobacco use,[5] and there is now clear evidence that effective support for smoking cessation, delivered through the healthcare system, would be a substantial and worthwhile addition to these measures. Such support, however, is not currently a core activity routinely offered in the NHS, and cost effective measures that would prevent many thousands of premature deaths are not being implemented. These guidelines assisted the development of the cessation policies that were set out in the government's recent white paper.[5]

Smoking cessation interventions are guaranteed to bring population health gains for relatively modest expenditure and in the long term reduce healthcare costs related to smoking, releasing resources for other needs. A recent international review found the median cost of over 310 medical interventions to be £17 000 per life year gained (discounted at 5%).[6] Results for smoking cessation interventions in the United Kingdom range from £212 to £873 (discounted at 1.5%).[2] Even if these figures are optimistic (for example, because of different discounting rates) such interventions remain much more cost effective than many medical interventions.

Scientific basis and review process

The guidelines are based principally on systematic reviews of effectiveness conducted by the Cochrane Tobacco Addiction Review Group in the United Kingdom[7–17] and the Agency for Health Care Policy

Summary points

The purpose of the guidelines is to recommend the integration of effective and cost effective interventions for smoking cessation into routine clinical care throughout the healthcare system, and they are aimed at health commissioners, managers, and clinicians

The guidelines are the first professionally endorsed, evidence and consensus based guidelines on smoking cessation for the English healthcare system and have been written in parallel with guidance on the cost effectiveness of smoking cessation interventions, which establishes the economic case for smoking cessation delivered through the NHS

Although the guidelines were commissioned by the Health Education Authority, which has a remit for England, they may prove relevant and adaptable to other countries and healthcare systems

Professional endorsement

Royal College of Physicians (London), Royal College of General Practitioners, BMA, Royal College of Nursing, Royal College of Midwives, Community Practitioners' and Health Visitors' Association, British Thoracic Society, British Lung Foundation, National Asthma Campaign, National Primary Care Facilitators Programme, National Heart Forum, British Dental Association, British Dental Hygienists' Association, National Pharmaceutical Association, Royal Pharmaceutical Society of Great Britain, Action on Smoking and Health, ASH Scotland, Quit, Association for Public Health, Imperial Cancer Research Fund, Cancer Research Campaign

and Research (AHCPR) in the United States.[18] They were reviewed by 19 specialists, redrafted, submitted to professional bodies for endorsement, and finally peer reviewed for publication. It is intended that the guidelines should be updated periodically to incorporate new evidence. The current version was completed in September 1998 and published as a supplement to *Thorax* in December 1998.

We have summarised the key evidence in the table, in which we report the improvement in cessation rates over and above those in the control conditions—the incremental cessation rate—using figures reported in the AHCPR guidelines and the Cochrane reviews. Readers who require further details of the methodology should consult the full guidelines.[1]

Main recommendations

The involvement of health professionals in offering interventions for smoking cessation should be based on factors such as access to smokers and level of training rather than professional discipline. Thus the recommendations for health professionals are relevant for all health professionals and not only those in primary care.

The essential features of individual smoking cessation advice are:

- Ask (about smoking at every opportunity)
- Advise (all smokers to stop)
- Assist (the smoker to stop)
- Arrange (follow up).[19]

If a smoker wants to stop, help should be offered. A few key points can be covered with the smoker in 5-10 minutes: set a date to stop and stop completely on that day; review past experience to determine what helped and what hindered; plan ahead, identify future problems and make a plan to deal with them; tell family and friends and enlist their support; plan what to do about alcohol; try nicotine replacement therapy: use whichever product suits best.

About 90% of all contacts between people and the NHS take place in primary care.[20] The cornerstone of an NHS smoking cessation strategy should therefore be the routine provision of brief advice and follow up in primary care, including advice on nicotine replacement therapy and how to use it.

It is essential that misconceptions about the effectiveness of treatments for smoking cessation are dispelled. Brief advice from a general practitioner is effective[7] and extremely worth while from a public health perspective. Using cautious and conservative assumptions we estimate that if general practitioners advised an additional (compared with normal practice) 50% of smokers to stop by using established protocols, including the recommendation to use nicotine replacement therapy, it would lead to some 18 extra ex-smokers a year in a five partner practice and an additional 75 000 extra ex-smokers a year nationally, at a cost of under £700 per life year gained.[2] Greater involvement of the primary care team would produce even more ex-smokers.

One of the main effects of brief advice is to motivate attempts to stop rather than increase cessation rates. Many smokers cannot stop without more intensive help, and these will usually be heavier smokers, who are more at risk of smoking related disease. These smokers should be referred to a specialist treatment service, and such services should be provided by all commissioners. A specialist service would have at least two core functions: helping smokers who cannot stop with only brief interventions, and training and supporting other health professionals to deliver smoking cessation interventions. The essential content of intensive cessation support is described in the full guidelines and is supported by published evidence of efficacy.[21]

Content of specialist smoking cessation treatment

People are normally treated in groups. This is partly for reasons of efficiency and partly because it is believed that group members can motivate each other to maintain an attempt to stop. Those people who for some reason do not want to be part of a group or are unable to attend group sessions are offered individual treatment. Five weekly evening sessions, of about 1 hour each, are offered over 4 weeks after the quit date. The first meeting is introductory, with participants expected to stop smoking after it and by the second session. Nicotine replacement therapy is distributed and discussed at the first session. From the second session the meetings focus primarily on input from group members. They discuss their experiences of the past week, including difficulties encountered, and offer mutual encouragement and support. Sessions are client (not therapist) oriented, meaning they emphasise mutual support rather than didactic input from the therapist. The therapist facilitates client interaction and mutual support outside formal sessions. During sessions there can be several conversations at the same time and with this approach groups can accommodate 15 to 25 participants and tend to work better with such numbers. Expired air carbon monoxide is measured at the beginning of each meeting. When the course is completed follow up meetings can be offered at various times up to 12 months from the beginning of the course, depending on resources. Two therapists run the groups together if possible. Some form of self help materials may be provided.

Nicotine replacement therapy approximately doubles cessation rates compared with controls (placebo or no nicotine replacement therapy), irrespective of the intensity of adjunctive support.[8 18] All four products

Summary of evidence used to create guidelines on smoking cessation

Intervention element	Data source	Increase in % of smokers abstinent for ⩾6 months*
Very brief advice to stop (3 min) by clinician *v* no advice	AHCPR[18]	2
Brief advice to stop (up to 10 min) by clinician *v* no advice	AHCPR[18]	3
Adding NRT to brief advice *v* brief advice alone or brief advice plus placebo	Cochrane[8]	6
Intensive support (for example, smokers' clinic) *v* no intervention	AHCPR[18]	8
Intensive support plus NRT *v* intensive support or intensive support plus placebo	Cochrane[8]	8
Cessation advice and support for hospital patients *v* no support	AHCPR[18]	5
Cessation advice and support for pregnant smokers *v* usual care or no intervention	AHCPR[18]	7

AHCPR=Agency for Health Care Policy and Research; NRT=nicotine replacement therapy.
*Cessation rates are calculated from odds ratios. This is a robust way of showing intervention effects. Figures presented may look unfamiliar to some experts, however, because of the particular studies grouped together in the comparison and the way meta-analyses group sometimes disparate studies. The evidence table gives only the effects of individual intervention elements. To estimate overall effect of particular package of treatment (eg, intensive behavioural support plus NRT) one can broadly speaking add together the effects of the elements; thus intensive support plus NRT can increase long term abstinence rates by some 16% (8% intensive support plus 8% NRT) over control.

Guidelines for smoking cessation

These are the recommendations (in full) which appear in the guidelines

Recommendations for all health professionals

- Assess the smoking status of patients at every opportunity; advise all smokers to stop; assist those interested in doing so; refer to specialist cessation service if necessary; recommend that smokers who want to stop use nicotine replacement therapy; provide accurate information and advice on nicotine replacement therapy
- Smoking and smoking cessation should be part of the core curriculum and basic training of all health professionals

Recommendations for the primary care team

- Assess the smoking status of patients at every opportunity; advise all smokers to stop; assist those interested in doing so; offer follow up; refer to specialist cessation service if necessary; recommend that smokers who want to stop use nicotine replacement therapy; provide accurate information and advice on nicotine replacement therapy

Recommendations for smoking cessation specialists

- Intensive support for smoking cessation should, when possible, be conducted in groups, include social support and training in coping skills, and offer around five sessions of about 1 hour over about 1 month and follow up
- Intensive support for smoking cessation should include the offer of or encouragement to use nicotine replacement therapy and clear advice and instruction on how to use it

Nicotine replacement therapy

- Smokers should be encouraged to use nicotine replacement therapy as a cessation aid; it is effective and safe if used correctly
- Health professionals who deliver smoking cessation interventions should give smokers accurate information and advice on nicotine replacement therapy
- Consideration should be given to ways of increasing the availability of nicotine replacement therapy to smokers on low incomes, including at a reduced cost or free of charge

Recommendations for specific populations

- Hospital staff should assess the smoking status of patients on admission, advise smokers to stop, and assist those interested in doing so. Patients should be advised of the hospital's smoke free status before admission
- Hospital patients who smoke should be offered help to stop smoking, including the provision of nicotine replacement therapy
- Pregnant smokers should be given firm and clear advice to stop smoking throughout pregnancy and given help when it is requested
- Cessation interventions shown to be effective with adults should be considered for use with young people, with the content modified as necessary

Recommendations for health commissioners

- To produce cost effective and significant health gain in the population, smoking cessation interventions should be commissioned
- Review current practice, identify needs, and provide core funding to integrate smoking cessation into health services; plan a cessation strategy with public health specialists; seek advice from smoking cessation specialists
- These plans should include a specialist cessation service
- Training should be a core part of a smoking cessation programme in all health authorities; protected time and funding should be built into this programme
- Core fund training for smoking cessation or ensure that it is prioritised within existing training budgets
- Make provision to ensure that nicotine replacement therapy is available to hospital patients who need it, in conjunction with professional advice and cessation support
- Require all services, departments, and clinics to introduce systems to maintain an up to date record of the smoking status of all patients in their (paper or electronic) notes; it should be regarded as a vital sign
- Ensure that all healthcare premises and their immediate surroundings are smoke free
- Work with clinicians to put systems in place to audit interventions for smoking cessation throughout the healthcare system

These guidelines are being assessed for incorporation within future national arrangements for quality and effectiveness by the NHS Executive

(gum, patch, nasal spray, inhalator) have similar success rates, and there is no published evidence yet from controlled trials to favour one product over another. Nicotine replacement therapy is safe[22] and should be routinely recommended to smokers, the choice of product depending on practical and personal considerations.

Other topics and audiences

In the full guidelines other populations and topics are briefly discussed, including hospital patients, pregnant smokers, young people, low income smokers, sex, weight gain, other treatments, No Smoking Day, training, and telephone help lines.

Few medical interventions are as cost effective as smoking cessation in producing population-wide health gain.[2] Health authorities, primary care groups, and primary care trusts should consider these guidelines both with respect to commissioning services and also specifically in relation to their role in developing the role of primary care teams and others in disease prevention and health promotion.

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Contributors: MR was lead writer of the full guidelines and of this article. AM cowrote the full guidelines and this article and managed the project, including the cost effectiveness project, for the Health Education Authority. RW cowrote the full guidelines and this article and advised especially on interpretation of evidence and methodology. All three took part in drafting, in editorial meetings, and in project meetings over 2 years and are the guarantors.

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1 Raw M, McNeill A, West R. Smoking cessation guidelines for health professionals. A guide to effective smoking cessation interventions for the health care system. *Thorax* 1998;53:suppl 5(1):S1-19.
2 Parrott S, Godfrey C, Raw M, West R, McNeill A. Guidance for commissioners on the cost-effectiveness of smoking cessation interventions. *Thorax* 1998;53:suppl 5(2):S1-38.
3 Callum C. *The smoking epidemic*. London: Health Education Authority, 1998.
4 Thomas M, Walker A, Wilmot A, Bennett N, Office for National Statistics. *Living in Britain: results from the 1996 general household survey*. London: Stationery Office, 1998.
5 Department of Health. *Smoking kills. A white paper on tobacco*. London: Stationery Office, 1998. (Cm 4177.)
6 Tengs TO, Adams ME, Pliskin JS, Safran DG, Siegal JE, Weinstein MC, et al. Five hundred life saving interventions and their cost-effectiveness. *Risk Analysis* 1995;15:369-90.
7 Silagy C, Ketteridge S. The effectiveness of physician advice to aid smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
8 Silagy C, Mant D, Fowler G, Lancaster T. Nicotine replacement therapy for smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
9 Silagy C, Lancaster T, Fowler G, Spiers I. Effectiveness of training health professionals to provide smoking cessation interventions. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
10 Hajek P, Stead L. The effect of aversive smoking on smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
11 White AR, Rampes H. Acupuncture in smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
12 Gourlay SG, Stead LF, Benowitz N. A meta-analysis of clonidine for smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
13 Stead LF, Hughes JR. Lobeline for smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
14 Hughes JR, Stead LF, Lancaster TR. Anxiolytics and antidepressants in smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
15 Lancaster T, Stead LF. Silver acetate for smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
16 Lancaster T, Stead LF. Mecamylamine for smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
17 Abbot NC, Stead LF, White AR, Barnes J, Ernst E. Hypnotherapy for smoking cessation. Database of Abstracts of Reviews of Effectiveness. In: *The Cochrane Library*, Issue 2. Oxford: Update Software, 1998.
18 Fiore MC, Bailey WC, Cohen SJ, Dorfman SF, Goldstein MG, Gritz ER, et al. *Smoking cessation*. Rockville, MD: Agency for Health Care Policy and Research, US Department of Health and Human Services, 1996. (Clinical practice guideline No 18. Publication No 96-0692.)
19 Glynn TJ, Manley MW. *How to help your patients stop smoking: A National Cancer Institute manual for physicians*. Washington, DC: US Department of Health and Human Services, 1989.
20 Mant D. *Research and development in primary care. National working group report*. Leeds, NHS Executive, 1997.
21 Hajek P. Withdrawal oriented therapy for smokers. *Br J Addict* 1989;84:591-8.
22 Benowitz NL, ed. *Nicotine safety and toxicity*. New York: Oxford University Press, 1998.

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A memorable patient

He was going to die anyway

He was memorable and yet I cannot remember much about him. Mid-30s, perhaps, slim, unkempt with a somewhat haunted look about him, sitting up in his hospital bed wearing pyjamas, staring ahead. Whereas other patients on the ward had visitors, nurses busying themselves around their beds, this man seemed to have an invisible barrier around him, which was rarely crossed. He was the man who had drunk paraquat and was going to die in a few days.

He did not look that physically unwell and I did not understand it. I was a third year medical student, in my first week on the ward. I was keen and eager to engage with the patients after two years of anatomy, physiology, and biochemistry. It was a renal ward and I found myself learning all about fluid balance and peritoneal dialysis. And yet I was more interested in this man who was alone, the man who had drunk paraquat, the outlier. I asked the busy house officer about him and received a brief reply that I shouldn't worry about him, and he wasn't worth taking a history from. He was going to die in a few days anyway.

I followed this advice on my first day but tried, without success, to catch the patient's eye when I walked past his bed. I felt uncomfortable with his isolation and the next day I went up to him, said I was a medical student, and would he mind if I asked him a few questions? He shrugged indifferently. I sat on his bed wanting to talk to him but not really knowing what to say. He met my rather lame questions about why he was in hospital, and how he felt, with monosyllabic answers. I realised I was out of my depth and that he did not really want to talk to me. I thanked him and left.

I am now pursuing a career in psychiatry and meet many people who are thinking of taking their lives. Often we are able to help them before they go beyond the point of no return as this patient had.

I wish it had been more possible for him to talk to members of staff in the final days of his life and that our teachers had been more able to talk to us as impressionable young medical students about him. But somehow it was just too difficult.

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