

REVIEW ARTICLE

SMOKING CESSATION, PAST PRESENT AND FUTURE

By

Keir E Lewis

Institute of Life Sciences, School of Medicine, Swansea University, Wales UK and Respiratory Unit, Prince Philip Hospital, Llanelli, Wales, UK.

Email: k.e.lewis@swansea.ac.uk

This article is based on a lecture delivered to the International Consensus on COPD meeting in London 2007. It describes man use of tobacco, early warnings from history alongside the rise of the tobacco industry and increasing use of the cigarette. It briefly describes the current epidemiology of smoking before describing in detail how Governments can coordinate tobacco control both through International co-operation and by effective Internal policy within their own borders.

It then describes what Community strategies are most effective in reducing smoking uptake and prevalence before describing what services are most effective at helping individual smokers quit, especially those attending hospitals usually with illnesses caused or made worse by smoking. Only by efforts from international treaties to individual counseling can we reduce the devastation caused by this preventable lifestyle.

INTRODUCTION

History of tobacco: the rise and rise of the cigarette: "The humble cigarette is responsible for a dozen times more deaths in the world in the past 40 years than all casualties from World War II.⁽¹⁾

By 2030, tobacco will be the biggest killer in the world.

How did we get into this position?

The following timeline highlights some of the most important historical events around tobacco.⁽²⁾

- Circa 6000 BC: the tobacco plant begins growing in the Americas.
- Circa 100 BC: American inhabitants begin using tobacco, including smoking and in enemas.
- 12th century: a Maya pot depicts a man

smoking a roll of tobacco leaves tied with a string. The Mayan term for smoking was sik'ar.

- 1492: Columbus discovers smoking.
- 1564: Sir John Hawkins introduces tobacco to England.
- 1603: physicians are upset that tobacco is used without their prescription and complain to King James I.
- 1604: King James I writes "A Counterblaste to Tobacco" saying it is "loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs."
- 1628: Shah Sefi punishes two merchants for selling tobacco by pouring hot lead down their throats.
- 1633: Sultan Murad IV of Turkey orders tobacco users executed as infidels.
- 1634: Czar Alexis in Russia creates penalties for smoking: first offence is whipping, a slit nose, and transportation to Siberia. Second offence is execution.
- 1638: use or distribution of tobacco in China is made a crime punishable by decapitation.
- 1650: Colony of Connecticut General Court orders—no smoking except with physicians order.
- 1701: Nicholas Boisregard warns that young people taking too much tobacco have "trembling, unsteady hands, staggering feet and suffer a withering of their noble parts."
- 1761: Dr. John Hill (UK) performs perhaps first clinical study of tobacco effects, warns snuff users they are vulnerable to cancers of the nose.
- 1761: Dr. Percival Pott notes incidence of cancer of the scrotum among chimneysweeps, theorising a connection between cancer and exposure to soot.
- 1795: Samuel von Soemmering reports on cancers of the lip in pipe smokers.
- 1847: Philip Morris opens his tobacconist shop selling hand-rolled Turkish cigarettes.

- 1852: matches are introduced, making smoking more convenient.
- 1853–1856: during the Crimean War, British soldiers learn how cheap and convenient the cigarettes ("Papirossi") used by their Turkish allies are, and bring the practice back to England.
- 1884: Duke and Sons (US) buy two Bonsack cigarette rolling machines and start producing 744 million cigarettes per year. They soon consolidate their rivals into the American.

Tobacco Company

- 1901: the largest British tobacco companies unite to combat America's take-over, forming the Imperial Tobacco Group.
- 1902: Imperial and American agree to stay in their own countries, and unite to form the British American Tobacco Company (BAT).
- 1912: Dr. I. Adler suggests that lung cancer is related to smoking.
- 1928: Lombard and Doering, in the *New England Journal of Medicine* report on 217 cancer deaths. They report that 34 of 35 site-specific (lung, lips, cheek, jaw) cancer sufferers are heavy smokers.
- 1939–1945: by the end of the war, cigarette sales are at an all-time high.
- 1941: Dr. Michael DeBakey notes a correlation between the increased sale of tobacco and the increasing prevalence of lung cancer in the US.
- 1950: two important epidemiological studies confirm a link between smoking and lung cancer: JAMA, 96.5% of lung cancer patients interviewed were moderate heavy-to chain-smokers and in the September 30th edition of BMJ.
Richard Doll and Bradford Hill reported heavy smokers were 50 times as likely as non-smokers to contract lung cancer.
- 1953: Wynder finds that painting cigarette tar on the backs of mice creates tumours—the first

definitive biological link between smoking and cancer.

- 1954: Tobacco Industry Research Committee placed a two-page ad in 448 newspapers reaching a circulation of 43 million people. It quoted cancer scientists who disregarded environmental factors in causing cancer. It also published a booklet quoting 36 scientists questioning smokers' link to health problems, which was sent to 176,800 doctors.
- 1954: Marlboro Cowboy created for Philip Morris.
- 1957: an internal report by the British tobacco industry refers to cancer by the code name, zephyr: "as a result of several statistical surveys, the idea has arisen that there is a causal relation between zephyr and tobacco smoking, particularly cigarette smoking".
- 1962, UK: first report of the British Royal College of Physicians of London—Smoking and Health.
- 1965: TV cigarette ads are taken off the air in the UK.
- 1966: health warnings on cigarette packs begin.
- 1967: Surgeon General's report concludes that smoking is the principal cause of lung cancer; finds evidence linking smoking to heart disease.
- 1971: second RCP Report refers to the cigarette death toll as "this present holocaust." A cigarette smoking and health—report by an Interdepartmental Parliament Group concludes, "all things considered, tobacco use brings in more money than it costs in health and disability." Report is unknown to the public until the Guardian newspaper publishes an account on May 6, 1980.
- 1984: FDA approves nicotine gum as a "new drug" and quit-smoking aid.
- 1988: first World No-Tobacco Day, sponsored by World

Health Organization

- 1992: nicotine patch is introduced.
- 1992: "Marlboro Man" Wayne McLaren, 51, dies of lung cancer.
- 1994: seven tobacco company executives begin testimony in Congressional hearings.
- 1995: July 19 issue of JAMA is heavily devoted to tobacco papers and finds "the evidence is unequivocal—the US public has been duped by the tobacco industry. We should all be outraged, and we should force the removal of this scourge from our nation.
- 1995: the second "Marlboro Man", David McLean, dies of lung cancer.
- 1996: benzo(a)pyrene derivative in cigarette tar is shown to damage the p53 tumour suppressor gene (Science magazine).
- 2004: New York publishes 1-year results of its ban quoting unheralded success. Global cigarette production declines 2.3% to the lowest since 1972. China now produces 32% of the global total.
- 2004: UK Wanless Report concluded that cutting smoking rates was "a key determinant of success" in meeting the Government's public health targets and that the National Health Service needed to shift its balance of effort towards prevention.
- 2007: NHS officially smoke free. Bans in Wales, Northern Ireland and England. Minimum age to buy cigarettes will be raised to 18 years.

Where can tobacco control take place?

At international and national levels, efforts to combat smuggling meet with limited success and it is still estimated that up to 1 in 4 cigarettes made never reach the official market place. Despite controversies and failures to control tobacco smuggling, there have been other successes at international levels. There was a progressive ban on advertising in magazines, television and billboards in the UK from 2002 and finally, there was a ban on advertising in international sporting

events (most notably Formula One Racing) in 2005. There has been a gradual but continuous restriction on advertising at international levels, e.g. 2004, India banned cigarette advertising and even China placed limits on television and press advertising.

Raising the price of cigarettes is crucial: In most developed countries, the main way to reduce tobacco consumption is via tax. Following his "Counterblast to tobacco" in 1604, James 1 raised the import duties on tobacco by 4000% but soon rescinded them when revenue income fell. Many studies, including the one by Townsend⁽³⁾ have shown a direct correlation between increasing the price of cigarettes and drops in consumption. Action on Smoking and Health (ASH) states that the price of tobacco is "the single greatest influence, in the short term, affecting tobacco consumption."

The price of a packet of 20 cigarettes in the UK is equivalent to around 50 Egyptian pounds.

As well as tax, there have been bans on smoking in enclosed public spaces (defined as three or more walls and a roof) in many countries. Initially, in New York (2003), Ireland, Norway and New Zealand (2004), Cuba, Bangladesh and Malta (2005), Scotland, Uruguay and Bermuda (2006), Wales, Northern Ireland and finally England in 2007. In every country, such bans have reduced the opportunity to smoke and resulted in significant numbers of people attempting to quit. There have been now reported adverse effects on entertainment industry profits with many reports (e.g. pubs and restaurants in Dublin) where profits have risen as more people eat out.

These international and national strategies are best summarized by the unanimous endorsement of all attending nations at the 56th World Health Assembly, 2003 for the WHO Framework Convention on Tobacco Control (<http://www.int/tobacco/framework/en/>)

Which can be summarized in 4 main points:

1. To protect all persons from exposure to tobacco smoke
2. To prevent initiation of tobacco use, to promote and support cessation and decrease tobacco consumption
3. Promote participation of indigenous people and communities in tobacco control programmes
4. To address gender specific risks when delivering tobacco control.

Efforts to reduce smoking at more local community levels have had varying success. Meta-analysis of 11 randomised controlled trials (RCTs) of self-help booklets or generic written advice versus no intervention suggests a very weak but positive effect on validated quit rates over at least 6 months. There was no evidence of benefit from adding self-help materials to face-to-face advice, or to nicotine replacement therapy (NRT). However meta-analysis of 17 trials (n= 20,414) using tailored materials compared to no intervention showed a stronger benefit although the absolute size of effect is still small (odds ratio (OR) 1.42, 95% confidence interval (CI) 1.26-1.61) and part of this effect could be due to the additional contact or assessment required to obtain individual data.⁽⁴⁾ Forty-eight trials of telephone counseling show that (validated) quit rates are higher for groups randomised to receive multiple sessions of call-back counseling (8 studies, with 418,000 participants, OR quitting 1.41, 95% CI 1.27-1.57). Pro-active telephone counseling not initiated by calls also increased quitting (29 studies, totaling more than 17,000 participants, OR 1.33, 95% CI 1.21-1.47). The reviewers concluded that one or two brief calls are unlikely to provide a measurable benefit but three or more calls would. Telephone quit-lines provide an important route of access to support for smokers, and call-back counseling enhances their usefulness.⁽⁵⁾

The workplace has potential to reach many smokers. Group programmes or individual

counseling and NRT only slightly increased cessation rates in comparison to no intervention. Self-help materials in work were not effective.

Tobacco bans, social support, environmental support and incentives (e.g. more annual leave for non-smokers) decreased cigarette consumption during the working day and increased quit attempts but their effect on total consumption or validated quit rates is unproven. Interventions aimed at the workplace as a whole rather than individuals are unproven.⁽⁶⁾

The Internet may be the only form of smoking cessation (SC) support available to many smokers with competition between hundreds of SC websites and pharmaceutical companies promoting their products. Although SC websites and discussion forums are popular there is little scientific evidence available on their efficacy. Neither do we know which components of these websites are most effective in helping smokers quit and avoid relapse.⁽⁷⁾

Who should provide smoking cessation advice?

We all have unique relationships with our patients but which health professionals are most effective at helping smokers quit and avoid relapse?

Meta-analysis of 20 RCTs suggests nursing-delivered interventions significantly increase the odds of quitting (OR 1.47, 95% CI 1.29–1.68)—perhaps being more effective for hospital inpatients but interventions in non-hospitalised patients also showed benefit.⁽⁸⁾

Doctors frequently (but not always) advise patients to improve their health by stopping smoking. A review of 39 RCTs, since 1972, involving over 31,000 smokers (mainly from unselected populations in primary care) has looked at the effects of physician advice in stopping smoking. Pooled data from 17 trials confirms that brief advice is better than no advice in improving validated quit rates over 6 months (OR 1.74, 95% CI 1.48–2.05). This equates to an absolute difference in the cessation rate of about 2.5%. There was a further small advantage of

intensive doctor advice (without pharmacotherapy) over brief advice (OR 1.44, 95% CI 1.24–1.67) with most gains when offered follow-up visits.⁽⁹⁾

SC is a potentially suitable role for community pharmacists because they are encouraged to advise on the correct use of NRT products and to provide behavioural support. However, only 2 RCTs could be found involving a total of 976 smokers. One showed a significant benefit over 12 months and the other showed a trend favouring pharmacist support. Neither trial validated smoking status.⁽¹⁰⁾

If we can train all professionals in primary care to deliver SC treatment, then even a small effect would have an impact on public health as a lot of our population see some health care provider (HCP) every year. Eight out of 10 studies (involving over 10,000 patients) randomizing HCPs to be trained on SC or nothing - showed significant increases in SC activity (more advice and NRT prescribing). However, only 2 of these 8 studies showed any decrease in actual patient smoking.⁽¹¹⁾ This is surprising and disappointing but all of these studies were based entirely in primary care (doctors, dentists and pharmacists) and only the study by Wilson et al. in Canada offered any follow-up at all. This study showed the biggest improvement with a doubling of the sustained, validated quit rate at 1 year (8.8% versus 4.4%).⁽¹²⁾ It seems that well-designed training of HCPs will work, if the service is comprehensive. Other studies have had limited success in even changing HCPs actions beyond offering simple advice⁽¹³⁾ and had even less effect in reducing smoking. In summary, SC service can be delivered by any HCP but the strongest evidence is for any motivated doctor or nurse specialist offering tailored advice with follow-up.

What exactly should the smoking cessation service consist of?

In Western Countries, group therapy in theory could be more cost-effective than individual counseling and smokers could provide each other with mutual support. RCTs confirm group

programmes are better than no intervention (OR 2.17, 95% CI 1.37–3.45) but there was not enough evidence to show that groups are more effective, or cost-effective, than intensive individual counseling. Moreover, there is little evidence supporting specific psychological components beyond generic support and skills training normally included.⁽¹⁴⁾

Individual counseling from a SC specialist, not involved in other aspects of patient care has been attempted since 1972. Meta-analysis of 18 trials confirms individual counseling is more effective than control (OR of quitting 1.56, 95% CI 1.32–1.84). The authors concluded that SC counseling could assist smokers to quit but were still unclear on definitions of intense versus brief counselling.⁽¹⁵⁾

There is no evidence that training partners to enhance support either changes partner behavior or (self-reported) quit rates.⁽¹⁶⁾ Better-designed projects, quantifying the intervention and validating SC need to be performed.

Does aversion therapy, e.g. rapid smoking help stop smoking? A meta-analysis⁽¹⁷⁾ of 12 RCTs of rapid smoking suggests an OR of quitting of 1.98 (95% CI 1.36–2.90). Nine RCTs showed other aversion methods were not as effective (OR 1.66, 95% CI 1.00–2.78). Most of these trials have serious flaws and the only one using biochemical validation gave a non-significant result. A funnel plot also suggests publication bias with small negative studies being excluded. Aversive smoking is not recommended without a better evidence base.

What is the evidence behind pharmacotherapy?

NRT has been shown to increase cessation rates among healthy volunteers. Nicotine gum was first licensed as far back as 1982 with inhalators, microtabs, lozenges and patches all being used today. There were some doubts to NRT's effectiveness in hospitalised patients. Hand et al.⁽¹⁸⁾ randomized 245 patients, referred by their hospital doctor to the SC counselor to receive either NRT given as a nicotine patch daily and a

nicotine inhalator prn plus advice and support or to receive just advice and support. At 1 year, there was no difference in validated quit-rates (15% and 14%, $p = 0.86$) despite NRT significantly increasing the cessation rate at 1 week. A recent meta-analysis of all 12 well-designed RCTs of NRT with final follow-up at more than 1 year comprising over 4700 patients in primary and secondary care yielded an OR in favor of NRT over placebo of 1.99 (95% CI 1.50–2.64). The effectiveness of NRT was maintained (over 2–8 years) and interestingly did not depend on duration of initial treatment. However, after 1 year, 30% of quitters in both the NRT and control groups still relapsed but hardly any relapsed after the second year.⁽¹⁹⁾ These studies together suggest that NRT has a permanent effect on SC but the long-term benefit of NRT is modest and tobacco dependence treatment might better be viewed as a chronic disorder, probably requiring repeated treatments. The Cochrane database consisting of over 34,000 subjects was re-analysed in 2007 to see if the source of funding has affected results of NRT trials. Industry sponsored trials were larger ($n = 479$ versus 268, $p = 0.04$) but were more likely to find statistically positive results favouring NRT. This difference was not explained by trial characteristics but better funding may have led to higher treatment compliance and therefore greater efficacy in industry-supported trials. Importantly, there was evidence of funnel-plot asymmetry among industry trials ($t=4.35$, $p<0.001$), but not among other trials, indicating that several small null-effect industry trials may not have reached publication. However, even after adjustment for this possible bias, the authors still concluded the "net effect for these products remains of considerable public health benefit".⁽²⁰⁾ Moreover, compulsory registration of all trials since should reduce publication bias in future.

Irvin et al. looked at the success rates of 59 US, NRT/placebo studies, published between 1983 and 2000. Comparing "like with like", negative correlations between publication year and abstinence rates from gum, patch and even placebo were found. They could identify no methodological or subject variable that could

explain the declining success rates⁽²¹⁾ and proposed that the population of remaining smokers is becoming selected and is becoming progressively more dependent and difficult to treat, i.e. they are far more likely to have already received advice and treatment before seeing a specialist in 2007 than they would have in 1983.⁽²¹⁾ If success rates for smoking cessation (at least in developed countries) are indeed falling over time as “resistant” smokers are left, it is fortunate that new treatments for tobacco dependence exist. Varenicline is an orally administered drug with a novel mechanism of action, targeting the specific nicotinic acetylcholine receptor associated with nicotine-induced behaviors (alpha4beta2 nAChR). It has both agonistic and antagonistic properties that together are believed to account for reduction of craving and withdrawal as well as simultaneously blocking the rewarding effects of smoking. It appears an effective and generally well-tolerated treatment for use in smokers who want to quit. In 2 multicenter, randomised, double-blind, placebo-controlled, phase III trials, involving more than 2000 (healthy) smokers, 12 weeks’ treatment with varenicline was associated with significantly higher continuous abstinence rates at weeks 9-12 than placebo or bupropion. In the longer term, continuous abstinence rates up to 1 year were significantly higher if they had previously had varenicline. Moreover, varenicline appeared to reduce the urge to smoke and alleviate withdrawal symptoms.^(22,23)

Among those achieving abstinence at 12 weeks, a further 12 weeks of varenicline therapy increased abstinence over placebo further.⁽²⁴⁾

These studies were industry funded, using healthy (motivated) volunteers. They may not be applicable to the general population of smokers, especially to hospitalised smokers, as excluded groups were those with cardiovascular disease, alcohol abuse, major depression, panic disorder, systolic blood pressure greater than 150mmHg or diastolic pressure greater than 95mmHg, a history of cancer, a body mass index of less than 15 kg/m² or higher than 38 kg/m², weight less than 45 kg, those with a “clinically significant medical

disease,” those over age 75 or younger than 18 years, those smoking fewer than 10 cigarettes per day, and those known to have recently relapsed during NRT or bupropion quitting attempts. There was a significant dropout rate in both the placebo and treatment arms. Perhaps most importantly, varenicline’s safety and efficacy against or with co-administration of NRT products has not been established. Despite these caveats, varenicline has been licensed by the FDA and recommended by the UK National Institute for Clinical Excellence.

Antidepressants, either by relieving depressive symptoms associated with nicotine withdrawal or by having a specific effect on neural pathways underlying nicotine addiction (e.g. blocking nicotine receptors), have been assessed in long-term SC. By 2007, there were 40 trials of bupropion and eight trials of nortriptyline. When used as the sole pharmacotherapy, bupropion (OR 1.94) and nortriptyline (OR 2.34) both doubled the odds of cessation, i.e. similar in efficacy to NRT.⁽²⁴⁾ There is insufficient evidence that adding bupropion or nortriptyline to NRT provides an additional long-term benefit. Three trials of extended therapy with bupropion did not prevent relapse after initial cessation. There is a risk of about 1 in 1000 of seizures associated with bupropion use but concerns that bupropion may increase suicide risk are currently unproven. It is much more widely used in SC in the US and in Europe than in the UK probably because of adverse publicity.

Nortriptyline has the potential for serious side effects, but none were seen in the few small trials for SC. None of the trials looking at serotonin uptake inhibitors, monoamine oxidase inhibitor (moclobemide) or venlafaxine showed any benefit suggesting that the mode of action of bupropion and nortriptyline is independent of their antidepressant effect.⁽²⁵⁾

There is no consistent evidence that anxiolytics (diazepam, beta-blockers) aid SC, but studies are limited and confidence intervals are wide⁽²⁶⁾ so we cannot rule out a possible effect.

The success claimed by practitioners of alternative therapies such as acupuncture and hypnotherapy

have not been shown to be superior to placebo or sham treatments in pooled analysis of RCTs.^(27,28) Smokers should be told this before spending their money!

Other new pharmacological treatments:

Methoxsalen, tranylcypromine and tryptamine are specific and selective inhibitors of the enzyme CYP2A6 that principally metabolises nicotine. In vitro and animal studies show them to be effective in reducing nicotine self-administration.⁽²⁹⁾ Methoxsalen has been shown to be safe and not only reduces nicotine metabolism but also reduces smoking intake in healthy volunteers in phase II and III trials.⁽³⁰⁾ Nicotine specific antibodies can bind nicotine in serum, resulting in a decrease in nicotine distribution to the brain and an increase in nicotine's elimination half-life. Studies using various vaccines and nicotine-specific antibodies in rodents show that immunisation can significantly reduce the behavioural effects of nicotine that are relevant to tobacco dependence (e.g. nicotine self-administration). Phase I clinical trials of nicotine vaccines have not produced any serious adverse events in humans and have produced dose-dependent increases in serum antibody levels. Phase II clinical trials are nearing completion. The review by LeSage et al.⁽³¹⁾ concludes, "immunologic interventions could play an important role in future treatment strategies for tobacco dependence."

Who should we offer smoking cessation treatment to?

Hospitalised smokers likely have target organ damage from smoking represent a particularly at-risk group. Admission to hospital provides an opportunity to help people stop smoking as individuals may be more open to help at a time of perceived vulnerability, may find it easier to quit in an environment where smoking is restricted or prohibited and where pharmacotherapy is readily available. Analysis of 17 well-designed trials (excluding psychiatric or substance misuse patients) confirms that intensive intervention (inpatient contact plus follow-up for at least 1 month) was associated with a significantly higher quit rate compared to control (OR 1.82, 95% CI

1.49–2.22). Interventions with less than a month of follow-up did not show evidence of significant benefit and interventions for more than 1 month initially did not improve outcomes. There was no strong evidence that clinical diagnosis affected the likelihood of quitting.⁽³²⁾

Smokers have a substantially increased risk of intra- and postoperative complications. At least 4 trials showed interventions significantly reduced preoperative smoking but direct evidence from RCTs that reducing or stopping smoking reduces the risk of complications is less clear. Current guidelines are based on two small trials with differing results.⁽³³⁾ The impact on complications may well depend on how long before surgery the smoking behavior is changed, whether smoking is reduced or stopped completely as well as the type of surgery. These areas need urgent research. A review of 51 RCTs (involving 20,931 pregnant women) shows a significant reduction in smoking in the intervention groups with reductions in low birthweight and preterm birth. The pooled trials had inadequate power to detect reductions in perinatal mortality or very low birthweight.⁽³⁴⁾ Bupropion is contraindicated in pregnancy and as nicotine is potentially teratogenic—manufacturers advise caution. Little is known about varenicline in pregnancy. The potential risks of these medications need to be weighed against the proven benefits of stopping smoking.

Teenage smoking prevalence is around 26% in the UK. RCTs of a range of cessation programmes for established smokers (n = 3605) under 20 years old have achieved moderate long-term biochemically validated success, (OR quitting at 1 year = 1.70, 95% CI 1.25–2.33). Pharmacological aids did not achieve statistically significant results, but both studies were small-scale, with low power to detect an effect.⁽³⁵⁾ Attrition and losses to follow-up are particularly problematic in trials for young smokers. There is a need for well-designed adequately powered studies for teenage smokers. SC is particularly relevant for cardiac patients. In 1983, a report of the Surgeon General cited smoking as a major cause of coronary heart disease 2 and the importance of smoking as a risk

factor for coronary heart disease is now beyond doubt. However, the speed and magnitude of risk reduction when a smoker with coronary heart disease quits are still subjects of debate. Twenty large RCTs show a 36% reduction in crude relative risk (RR) of mortality for those who quit smoking compared with those who continued to smoke (RR 0.64, 95% CI 0.58–0.71), which compares very well with other secondary prevention measures such as cholesterol lowering that have received far more attention and funding. However, the review was not able to assess how quickly the risk of mortality was reduced and relatively few studies have included large numbers of older people, women, or people of non-European descent.⁽³⁶⁾

Current best treatment—putting it all together: In the UK, national guidelines recommend “everyone who smokes should be advised to quit, unless there are exceptional circumstances” and “SC advice and support should be available in community, primary and secondary care settings for everyone who smokes”. They further recommend that Primary Care doctors, community workers, nurses, dentists, pharmacists and hospital clinicians should all offer brief (opportunistic) advice. If the smoker expresses a desire to quit, they should be referred to a specialist service and if not they should be offered pharmacotherapy anyway.⁽³⁷⁾ International COPD Guidelines emphasize that advice should be tailored to the individual rather than be generic.⁽³⁷⁻³⁹⁾ Within a specialist setting, combination pharmacotherapy (rather than a single agent) should be offered.^(19,32,38–41)

Just as we do not treat patients with asthma with a single drug but tailor treatment to symptoms, severity, side effects and previous drug exposure—we now have the evidence to tailor treatments and advice to this other chronic relapsing medical condition.

For specialist services in community and hospitalised smokers, all guidelines are again very consistent, recommending intensive support (at least weekly sessions) for the first month or so with less intensive follow-up, e.g. once more at 6

months but preferably again at 1 year and validating smoking status biochemically.^(38–40,42)

Most smokers who quit do relapse and this area of smoking research has been neglected. RCTs specifically on relapse prevention neither support skills training (which is what is usually offered) nor do they support extended service contact.⁽⁴³⁾ Again, this may be because we are treating all smokers in the same way. More research is needed to first identify those at highest risk of relapse and try different tailored interventions including prolonged pharmacotherapy to prevent relapse in these sub-groups.

These models combining intensive early and tailored counseling with combination pharmacotherapy and longer term, less intensive follow-up (with validation) are extremely cost-effective. The cost per life-year saved by employing a hospital SC specialist is between 340 and 426 English pounds.⁽⁴⁴⁾ Early works suggested that community services were also extremely cost-effective at about £650 per life-year saved.⁽⁴⁵⁾ More detailed analysis of the English SC Services used routine data sources to look at their whole service and estimated a very similar cost per life gained of £684, falling to £438 when savings in future health-care costs were counted and well below the benchmark of £30,000 per quality-adjusted life-year saved that is used by the National Institute for Clinical Excellence in the United Kingdom to justify treatment on the NHS.⁽⁴⁶⁾ An attempt to standardise these different economic models in different populations across every country studied has still shown that all programmes are cost-effective and so similar programs are likely to have a real benefit in Egypt.⁽⁴⁷⁾

This article has listed some important historical events in man’s use, abuse and attempts to limit tobacco. Important steps are being taken at international and national levels to control tobacco use and a good evidence base now exist for us to help individual smokers quit. Brief counseling is important, has very few (no) adverse effects and should be performed by all health professionals. Intensive counseling over about 1 month, by a specialist, as a part of a group or one-to-one, in

conjunction with combination pharmacotherapy and then longer-term support with validation is one of the most cost-effective treatments we can possibly offer. It is a shame that many health care professionals are content just to treat the diseases tobacco causes. With new treatments, a better evidence base about what works, increasing legislation and international co-operation, the future of smoking cessation looks very promising.

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