Electronic cigarettes: reasons to be cautious

Andrew Furber

Tobacco remains the leading cause of preventable mortality, morbidity and of health inequalities in many countries, including the UK. Eighty thousand people die every year in England from smoking.[1] Many more suffer terrible disability. Tobacco control remains a public health priority.[2] Smoking still kills.

In this context anything which could reduce this toll deserves serious consideration, just as any risks of undermining recent tobacco control successes need to be properly understood.

It is disappointing then that the debate on electronic cigarettes (also known as electronic nicotine delivery systems (ENDS) or nicotine vapourisers) has become characterised more by heat than light. There has been so much focus on these devices that we risk losing our focus on what we know works—a comprehensive strategy to reduce smoking prevalence.[3] We must not lose, through neglect, the debate on standardised tobacco packaging or the need to further increase the price of tobacco. We need to move away from fixed positions to some key principles against which we can debate the evidence.

The first principle must be to ask whether electronic cigarettes are safe. First do no harm. Compared with smoking tobacco it is very clear that electronic cigarettes are much safer. Even though it is not difficult to be safer than a product which will kill half of its regular users, this message must not be lost. However, it is equally true to say that electronic cigarettes are not without harm.[4] The vapour from some of these devices has been shown to contain ultrafine particles and carcinogens. There is little doubt that there is a risk of harm to non-smokers who use these products. Quantifying the level of harm is difficult given the paucity of evidence and variability and unregulated nature of the devices. There have also been cases of nicotine poisoning from ingestion by children of the liquid used in refillable devices.[5]

Correspondence to Dr Andrew Furber, Department of Public Health, Wakefield Council, Wakefield One, PO Box 700, Wakefield WF1 2EB, UK; afurber@wakefield.gov.uk

The second principle is to know whether electronic cigarettes are effective in reducing tobacco harm. For the individual smoker the evidence suggests they are likely to be as effective as standard nicotine replacement therapy (NRT).[6] NRT is better than nothing, but is not particularly good in supporting an individual to quit without behavioural support.[7] The effectiveness of electronic cigarettes may improve and in theory they have pharmacokinetic and behavioural advantages over NRT but this has yet to be proved. The recent Cochrane Review of the effectiveness of electronic cigarettes suggested there may be some benefits over NRT but acknowledged that the quality of the evidence overall is low because it is based on only a small number of studies.[8] The ideal for someone wanting to stop smoking should be referral for intensive support as provided through NHS Stop Smoking Services.[9]

The third principle is to know whether electronic cigarettes reduce tobacco harm at a population level. Suggestions that the recent rapid increase in electronic cigarette use correlates with a reduction in adult smoking prevalence in England are yet to be proven. Correlation is not causation and other factors such as the economic downturn may have played a part. Seventy percent of electronic cigarette users are dual users and continue to smoke tobacco.[10] Such is the harmful nature of tobacco there is unlikely to be any health benefit for this group. The involvement of the tobacco industry in the electronic cigarette market raises concern for many reasons, not least the prospect of a cohort of smokers who remain addicted to nicotine rather than quitting.

There has been much debate about the possibility of a gateway effect. Young people might become smokers via experimentation with electronic cigarettes. Certainly there are frequently surveys (eg, the recent Childhood Exposure to Environmental Tobacco Smoke (CHETS) Wales study[11]) which raise concerns about the prevalence of electronic cigarette use amongst young people. These surveys need to be properly appraised for their methodology and conclusions. Whilst the existence of a gateway effect is difficult to prove through these surveys, it remains clear that we need to ensure these products are not available or promoted to those under 18 years old.

So how should these principles and the incomplete nature of the evidence help us develop policy? There is a science behind the development of policy in the context of incomplete and uncertain evidence.[12] This is perhaps best developed in the field of environmental science and its consideration of issues such as climate change. We need to learn from these disciplines and apply them to public health challenges where the evidence is uncertain. This will include the behavioural science of policy making and attitudes towards risk. But the key lesson is that clear and effective communication is crucial. We have largely failed in this regard which is why many people are confused about electronic cigarettes and some smokers still think they are more harmful than tobacco.

There are a number of important policy questions we need to address. First, given the potential harm as well as benefit of these devices it is essential that we have a strong regulatory framework. Some countries and administrations have decided to ban their use completely. Whilst this does much to control the harm it precludes the potential benefit. The UK has ended up with regulation through two routes. Electronic cigarettes as consumer devices will be regulated under the EU Tobacco Products Directive. Those making health claims will be regulated under the stricter regime of the Medicines and Healthcare Products Regulatory Agency (MHRA), as is the case for NRT. The BMA has called for all products to be licensed via the MHRA.[13] The risk in doing so is that products become more expensive and less widely available, which potentially reduces the benefit for adult smokers.

The second question is about use in enclosed public places. Although toxins have been shown to be contained within the vapour from electronic cigarettes, the risks from second-hand vapour is likely to be low. There have been reports of asthma attacks secondary to exposure to vapour but these will be rare. Of greater importance is the denormalisation of smokefree environments. Ex-smokers may find the sight of smoking behaviour difficult and a challenge to their continued abstinence.

The third policy area to be considered is that of advertising. Whilst the responsible advertising of electronic cigarettes has the potential to denormalise smoking, such as the 'friends don't let friends smoke' campaign, we are seeing the opposite too often. There are examples of glamourising smoking behaviour and of

celebrity endorsements that are reminiscent of tobacco advertising which is no longer permitted. This should not be a problem for discerning adults who can easily differentiate this from tobacco products, but it may influence young people to have a more positive view of tobacco. A ban on advertising would avoid this.

Finally, what is the role of electronic cigarettes in smoking cessation? Here the National Institute of Health and Care Excellence (NICE) guidance[14] on tobacco harm reduction is helpful and should be followed. The use of particular licensed nicotine replacement products should be subject to the normal local processes for deciding which medicines are used within local formularies/services. This will ensure consistency, allow prescribing budgets to be managed and ensure the most cost-effective products are prescribed. Medical advice to use unlicensed products would seem unwise, although if asked advice can be given that they are safer than smoking.

In summary, electronic cigarettes have the potential to reduce the terrible toll of tobacco harm, but also risk undermining our progress in tobacco control. Effective regulation is vital if these risks are to be managed. Areas that are currently covered by smokefree legislation ought to also be areas where vaping is not permitted. Advertising needs to be carefully controlled if not banned. The use of electronic cigarettes in clinical settings ought to comply with NICE guidance. Above all we should not let electronic cigarettes divide the tobacco control community, or distract us from the comprehensive approach to delivering a smokefree future.

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