My name is Dr. Riccardo Polosa; I am Full Tenure Professor of Internal Medicine at the University of Catania (Italy) and Head of the Department of Internal and Emergency Medicine at the Teaching Hospital of the same University. I also lead the University’s Centre for Tobacco Research, which I founded in 2001. I am also Honorary Professor of Medicine at the University of Southampton (UK). My research interests focus on respiratory medicine, clinical immunology, and tobacco-related research. I have published more than 350 scholarly articles and university-press books on these topics. More recently, I have also led several clinical trials on e-cigarettes including the first randomized controlled trial on electronic cigarettes (1). According to a recent bibliometric analysis published in BMC Public Health (2), I am the most prolific author in the field of electronic cigarettes. On top of my academic work, I serve as Scientific Advisor for Lega Italiana Anti Fumo (LIAF; Italian acronym for Italian Anti Smoking League) and as Chair for the Working Group on “Requirements and test methods for emissions of electronic cigarettes” of the European Committee for Standardization (CEN/TC 437).

I am writing you in relation to your e-cigarette enquiry, which requires to examine the impact of electronic cigarettes on human health (including their effectiveness as a stop-smoking tool), the suitability of regulations guiding their use, and the financial implications of a growing market on both business and the NHS.

Please note that the focus of my submission will be about the impact of electronic cigarettes on human health (my area of expertise).

Without a doubt, complete cessation of all tobacco and nicotine is always the preferred goal. However, the large majority of smokers are unable or unwilling to quit (3). They will keep smoking because, when given only the options of smoking or completely giving up nicotine, many will not give it up. Bearing in mind that nicotine per se does not cause much harm when separated from inhaling cigarette smoke, it is possible to reduce the burden of smoking-related diseases by taking nicotine in a low-risk form. Tobacco harm reduction (THR), the substitution of cigarette smoking for non-combustible low-risk nicotine products, is likely to improve individual as well as public health. Moreover, the WHO’s Framework Convention on Tobacco Control (FCTC) recognizes harm reduction as an integral part of tobacco control.

Electronic cigarettes (EC) are becoming the most promising product for THR to date (4). This is due to their efficiency in reducing tobacco consumption, competitive price, the perception of being a much less harmful smoking alternative, and because they allow the smoker to continue having a “smoking experience without smoking” (5,6).

Because vaping is almost exclusively confined to those who already smoke, regular EC use is now displacing tobacco smoking with millions of people giving up their own tobacco brands by switching to ECs. For example, in the European Union over 6 million smokers reported having quit using an e-cigarette in 2014 (7). In the UK, 1.5 million former smokers are now vaping (8). Another 650,000 ex-smokers have quit smoking and vaping altogether (9).

The scientific consensus is that EC use is regarded as having much lower levels of risks than smoking (10-12). There is growing evidence to support the relative safety of EC emission
aerosols compared to tobacco smoke having a simpler aerosol composition (10). Public Health England estimated, on the basis of a review of 185 studies, that vaping an e-cigarette is likely to be at least 95% less harmful than smoking a regular cigarette (11). In 2016, the Royal College of Physicians affirmed this figure, estimating the risk of long-term inhalation of e-cigarette vapour to be unlikely to exceed 5% of the risk associated with long-term cigarette smoking (12).

Nonetheless, there is genuine concern that long-term exposure to EC aerosol emissions might carry significant health risk. I would like to share with you our approach at addressing the concern about health effects of ECs under normal conditions of use. Our clinical research programme has shown transient throat irritation, dry cough, and other symptoms of respiratory irritation in some smokers when switching from cigarettes to ECs, but the symptoms are mild and usually transient (13). Most importantly, we have shown that ECs are unlikely to raise significant health concerns for the respiratory tract even in smokers with pre-existing lung disease. For example, reducing cigarette consumption by switching to EC use may yield considerable and clinically relevant respiratory benefits in COPD as well as in asthma (14,15).

While smoking cessation may be the most desirable final outcome from a health point of view, it may be the wrong goal if it leads to failure or relapse. Physicians should consider all the pathways available to a smoking patient – including ECs - and select the ones that give the greatest probability of eliminating exposure to tobacco smoking (16). Our research is showing that—for many smokers—the best outcome may be a long-term switch to vaping, tolerating the small residual risk in return for a higher likelihood of success. The medical community is now starting recommending vaping products to patients as quit smoking aids (17).

More recently my research team had an important scientific study published in Nature Scientific Reports titled “Health impact of E-cigarettes: a prospective 3.5-year study of regular daily users who have never smoked” (18). This study, the first examining long-term health effects of E-cigarettes use, shows no health concerns and may be very relevant to the work of the Science and Technology Committee.

Of course, vaping products must comply with safety and quality standards to safeguard consumers; currently the European Union CEN/Technical Committee 437 (19) and the International Organization for Standardization (ISO) (20) are together developing standards for thermal, electrical and chemical safety and e-liquids standards, as well as analytical methods for aerosol emissions. Promoting legal access to safety and quality approved nicotine vaping is a unique opportunity to reduce or prevent some of the otherwise inevitable burden of disease morbidity and mortality caused by tobacco smoking.

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REFERENCES
Written evidence submitted by Professor Riccardo Polosa (ECG0034)


