

Subject: Inquiry into the Use of E-Cigarettes and Personal Vaporisers in Australia.

Submission by

Riccardo Polosa MD, PhD

Professor of Internal Medicine

University of Catania (Italy)

e-mail: [REDACTED]

House of Representatives Standing Committee on Health, Aged Care and Sport

Dear Sir or Madam,

My name is 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).

Recently, I had the pleasure of attending the Annual Scientific Meeting of The Australia and New Zealand Society of Respiratory Science, which took place in Canberra earlier this year. On that occasion I have learned that the progress made by Australia in term of tobacco control has

recently slowed down, with no evidence of decline in smoking rates being reported over the last 3 yrs (3). Moreover, smoking kills about 15,000 Australians per year and it is still the leading preventable cause of death and illness in your Country (4,5). With nearly 3 million Australians still smoking (3), smoking is, and for the foreseeable future will continue to be, a major threat to life.

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 (6). 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. As a signatory of the FCTC treaty, Australia is obliged to introduce THR strategies along with other tobacco control measures (7).

Electronic cigarettes (EC) are becoming the most promising product for THR to date (8). 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" (9,10). According the 2016 National Drug Strategy Household Survey, 1.2% of Australians are currently "vaping" (the process of inhaling the aerosol generated by an EC) (3).

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 (11). In the UK, 1.5 million former smokers are now vaping (12). Another 650,000 ex-smokers have quit smoking and vaping altogether (13).

Use of ECs by the adolescent population has been one of the most important topics of discussion in public health, but concern that EC use is growing among minors and young adults is unsubstantiated. By including many infrequent users (mostly experimenters unlikely to use ECs regularly) in the definition of EC use would abnormally inflate these statistics (15). Notably, increase in experimentation with ECs among young people is now associated with an accelerated rate of decline in smoking among youths (16,17).

The scientific consensus is that EC use is regarded as having much lower levels of risks than smoking (18-20). There is growing evidence to support the relative safety of EC emission aerosols compared to tobacco smoke having a simpler aerosol composition (18). 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 (19). 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 (20).

Nonetheless, from initial conversations I had with opinion leaders from Thoracic Society of Australia and New Zealand, National Asthma Council, and Lung Foundation Australia it was apparent that there is genuine concern that long-term exposure to EC aerosol emissions might carry significant health risk. The congress in Canberra was a great opportunity to share with these experts 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 (21). 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 (22,23). 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, and select the ones that give the greatest probability of eliminating exposure to tobacco smoking, including ECs (24). We have shown 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. We now recommend vaping products to patients as quit smoking aids.

In conclusion, the current ban on nicotine-containing ECs in Australia does not seem to be a sensible anti-smoking policy and it is likely to have the unintended effect of perpetuating tobacco smoking. Anything that makes vaping less available or less attractive increases the demand for combustible cigarettes. Allowing nicotine in vaporized form in a wide palette of flavors makes vaping a stronger competitor with smoking. Of course, vaping products must comply with safety and quality standards to safeguard consumers; currently the European Union CEN/Technical Committee 437 (25) and the International Organization for Standardization (ISO) (26) 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 even in countries with low smoking prevalence, such as Australia.

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