

World Health Organisation fails at science and fails at propaganda - the sad case of WHO's anti-vaping Q&A



WHO's anti-vaping propaganda is so bad it discredits the whole organisation

On 20 January 2020, the World Health Organisation published a question and answer page on “ENDS” (Electronic Nicotine Delivery Systems) or e-cigarettes and vaping products for nicotine as they are more commonly known: [E-cigarettes: how risky are they?](#) (current live version)

Update (31 January 2019) - WHO's amended version: almost certainly in response to severe criticisms, WHO published an update to its Q & A some time on 29 January. The 20 January original version, ([archived](#)) which WHO heavily publicised (e.g. [see Twitter thread](#)) is the subject of this blog, not least because it allows debunking of some especially absurd anti-vaping statements. WHO has not notified readers of the changes or issued any acknowledgement of correction or error. So for comparison purposes, I have compared the original and updated versions side-by-side in the final section of this blog: go to [Update: what WHO has changed](#). Much of my original criticism applies to the amended version, which mainly removes some of the most blatantly false and misleading statements.

Update ends.

There are nine questions and every single answer provides false, misleading or simplistic information, *and this remains true of the 29 January update*. It is a disgraceful travesty of science communication and policymaking advice and again puts in question the competence of the WHO - if there is still any doubt about this. But it is *so bad* that it even fails as anti-vaping activist propaganda - and *that* is a low bar.

I will briefly set out the nine questions in the original Q&A and the World Health Organisation's answers in quote boxes, each followed by my assessment of the answer.

The questions (20 January version)

[1. Are e-cigarettes and other vaping products dangerous?](#)

[2. Do e-cigarettes \(ENDS\) cause lung injuries?](#)

[3. Are e-cigarettes more dangerous than regular cigarettes?](#)

[4. Are ENDS addictive?](#)

[5. Are secondhand ENDS emissions dangerous?](#)

[6. Should ENDS be banned?](#)

[7. Should ENDS be regulated?](#)

[8. Do ENDS help you quit smoking?](#)

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[Bonus question: what should WHO do now?](#)

1. Are e-cigarettes and other vaping products dangerous?

WHO responds to this question with a series of half-truths and non-sequiturs that

confuse relative and absolute risk and 'safe' and 'much safer'. The aims seem to be to confuse the reader about the comparison of smoking vaping risks.

There are many different types of e-cigarettes in use (also known as Electronic Nicotine Delivery Systems (ENDS), with varying amounts of nicotine and harmful emissions.

This statement contains no useful information. There is little evidence that the emissions are or are likely to be a cause of serious harm, and certainly nothing comparable to cigarettes. Though there are differences between ENDS products, these are clustered at the opposite end of the scale of harm caused by smoking. By way of hypothetical example, a product that has 5% of the risk of smoking is five times the risk of a product with 1% of the risk. But for all practical purposes, it is the 95-99% reduction compared to cigarettes that matters for policymakers and consumers. Exposure to nicotine itself is not especially harmful and mostly under the control of the user through 'titration' - smoking or vaping in a way that gets the nicotine dose they want.

ENDS emissions typically contain nicotine and other toxic substances that are harmful to both users and those exposed to the vapours secondhand. Some devices that claim to be nicotine-free have been found to contain nicotine.

This answer conveys a basic misunderstanding of nicotine - it is not the nicotine that causes serious harms, it is smoke. Electronic *Nicotine* Delivery Systems, as the name suggests, deliver nicotine intentionally and by design. Nicotine is a legal and relatively mild and innocuous recreational drug with perhaps 1.3 billion users worldwide. The purpose of 'ENDS' is to enable users to use nicotine with a tiny fraction of the risk associated with smoking tobacco. Smoking is by far the riskiest way of consuming nicotine and the cause of most of the tobacco-related non-communicable disease that WHO is supposed to be trying to reduce.

Smoking is especially risky because nicotine is delivered to the lungs in "smoke" which comprises hot toxic gases and thick, sticky particles comprised of the products of combustion of dried and cured tobacco leaf. ENDS do not involve uncontrolled combustion reactions or the creations the thousands of newly-formed chemicals, many toxic and carcinogenic, created in the burning tip of the cigarette. ENDS use electrical heat to create a liquid aerosol (a fine mist of liquid

droplets) from liquids with pure pharmaceutical grade nicotine, neutral excipients and flavourings. This basic difference in technology is why e-cigarettes are so much safer than tobacco cigarettes.

There is no doubt that they are harmful to health and are not safe, but it is too early to provide a clear answer on the long-term impact of using them or being exposed to them.

The answer starts by missing the point about harm *reduction* - the products may not be 100% safe, but they are an alternative to using combustible products that may be more than twenty times as risky, based on what we currently know of the toxicity. However, it is even an exaggeration to say that "*there is no doubt that they are harmful...*" There are plausible mechanisms that could conceivably cause harm, but it is far from established that ENDS will cause any material harm to the vast majority of users. So far, there is little sign of material harm to users and it is quite possible that when a long term evaluation the harms will be seen as negligible and there may even be benefits.

Above all, what matters is if there is any harm at all, it is certain to be very much less than from smoking - and is why by far the largest health impact is actually benefit, reducing the harm caused by smoking. That was completely ignored in the Q&A.

ENDS are particularly risky when used by adolescents. Nicotine is highly addictive and young people's brains develop up to their mid-twenties. Exposure to nicotine can have long-lasting, damaging effects.

These claims about effects on the brain are largely false and rely on a few experiments done on rodents. The effects of nicotine on the brain would be seen in the brains of generations of mature adults who started using nicotine as adolescents *by smoking*. No research supports this - and believe me, the research would be very well known if there was any evidence. There is no compelling evidence that a history of nicotine use causes recognisable cognitive or other brain-related impairment. This is not to argue that teen vaping is a good thing, just that the risk should not be exaggerated and should be placed in context with other teen risk behaviours - such as alcohol use, illicit drugs, reckless driving, underage sex, fighting and bullying and so on.

Young people who use ENDS are also more likely to use conventional cigarettes, cigars or hookahs.

This statement is true but highly misleading. The use of ENDS does not *cause* cigarette smoking (a “gateway effect”). Far more likely is those same influences that incline young people to smoke also incline them to use ENDS (these factors might include genetics, family circumstances, mental health, school environment, delinquency, risk-taking etc). This is known as ‘common liability’. It also means that ENDS are more likely to be beneficial to the young people who use them because they may be diverting them away from smoking.

ENDS increase the risk of heart disease and lung disorders. For pregnant women, ENDS pose significant risks as they can damage the growing fetus.

This argument is greatly over-stated. There is some evidence of *effects* on the body from ENDS use - but this is not surprising given that nicotine is a stimulant. Because nearly every adult ENDS user is a current or former smoker, it is nearly impossible to isolate the effects of ENDS use from the effects of prior smoking. Researchers claiming to “adjust for smoking history” never have the data to do that properly.

ENDS also expose non-smokers and bystanders to nicotine and other harmful chemicals.

The answer misunderstands basic toxicology, that “the dose makes the poison” and the quantity of exposure is what matters. Vaping in public places exposes users to vapour aerosol. Nicotine exposure is minimal because most is absorbed in the body of the ENDS user (there is no equivalent of the burning tip releasing sidestream smoke). Toxic exposure is much lower because vapour aerosol is much less toxic than cigarette smoke. Finally, vapour aerosol dissipates and breaks down much more rapidly than cigarette smoke. The result is that vapour exposure is unlikely to be more than a matter of nuisance and etiquette. For that reason, property owners and managers should define their own vaping policy, not have it imposed by law.

The liquid in ENDS can burn skin and rapidly cause nicotine poisoning if swallowed or absorbed through the skin. There is a risk of the devices leaking,

or of children swallowing the liquid, and ENDS have been known to cause serious injuries through fires and explosions.

The answer is pure nonsense. I don't know of any cases of skin being 'burnt' by the liquid or any reason why it would cause burns. So this claim is a complete mystery. Nicotine ingested in large doses can cause poisoning - but it is also an emetic (causes vomiting) and so severe incidents are rare and treatable. There are normal precautions for dealing with anything hazardous - medicines, cleaning agents, alcohol - that mitigate risks of accidental exposure: child-resistant containers, warning labels, and advice on what to do. There have been a few cases of battery explosions, but the numbers harmed in this way are a tiny fraction of those injured or killed in smoking-related fires.

I have written in greater detail about anti-vaping arguments here: [Ten perverse intellectual contortions: a guide to the sophistry of anti-vaping activists](#)

2. Do e-cigarettes (ENDS) cause lung injuries?

There is growing evidence to show that ENDS use could cause lung damage.

On 17 September 2019, the United States Centers for Disease Control and Prevention activated an emergency investigation into links between ENDS use and lung injuries and deaths.

By 10 December 2019, the USA reported more than 2409 hospitalized cases and 52 confirmed deaths.

At least five other countries have initiated investigations to identify cases of lung injuries related to ENDS use.

This is a shameful and outright falsehood.

There is not 'growing evidence' that ENDS could cause lung damage of the type seen in the United States between June and December 2019. On the contrary, since July 2019, there has been growing and now conclusive evidence that this outbreak has nothing at all to do with ENDS (i.e. nicotine delivery systems). It has been apparent since August 2019, that the cause of the severe lung injuries has been an additive, Vitamin E Acetate, used in cannabis (THC) oils to 'cut'

(dilute) the liquid without reducing its viscosity. This appeared primarily in the US illicit supply chain and was done for fraudulent economic reasons (to make more money from expensive THC oil by diluting it).

Some actual facts missing from WHO's Q&A fact sheet:

- Vitamin E acetate is the cause of the severe lung injuries seen so far: this substance *cannot* be added to nicotine e-liquids - it is not soluble in the excipients used in nicotine liquids.
- There is no economic rationale to even try to add Vitamin E acetate or other thickeners. A thickener serves no purpose in nicotine-based e-liquids which do not benefit from being 'cut' or thickened.
- No nicotine e-liquids tested following outbreaks of the lung injury have contained suspect ingredients.
- The supply chain for nicotine e-liquids in the United States is legal, regulated and does not substantially overlap with the THC vape supply chain. There is a vanishingly small chance that a completely independent problem with nicotine e-liquids would emerge at the same time, in the same place with the same symptoms as the cases caused by additives to THC vapes. Using the well-established epidemiological techniques used for, for example, isolating causes of food poisoning, it should have been possible to eliminate ENDS as a possible cause in August at the latest.
- The confusion was caused by, and perhaps promoted by, focussing on testimonies from lung injury victims claiming to have used only nicotine liquids and not THC. However, these accounts are *obviously* unreliable because of the legal status of THC and the user's risk of committing a crime or facing problems with employment, education or family. There has been no conclusive case where nicotine liquids were established as the cause of the injury.
- CDC now (January 2020) [focusses its advice](#) on avoiding THC vapes and Vitamin E acetate, not ENDS - it maintains its customary reserve about ENDS (but no more than that).
 - *CDC and FDA recommend that people not use THC-containing e-cigarette, or vaping, products, particularly from informal sources like friends, family, or in-person or online dealers.*
 - *Vitamin E acetate should not be added to any e-cigarette, or vaping, products. Additionally, people should not add any other*

substances not intended by the manufacturer to products, including products purchased through retail establishments.

- *Adults using nicotine-containing e-cigarettes or vaping products as an alternative to cigarettes should not go back to smoking; they should weigh all available information and consider using [FDA-approved cessation](#). They should contact their healthcare professional if they need help quitting tobacco products, including e-cigarettes, as well as if they have concerns about EVALI.*

So, this WHO position is not even consistent with the CDC's advice, which is the supposed source. CDC itself has been very slow to recognise that ENDS are not implicated in this outbreak.

For reliable and well-cited information grounded in actual expertise, please do not go to WHO, but consult:

1. The cannabis specialist publication, *Leafly*: [Vape pen lung injury: Here's what you need to know](#)
2. Also, for those wishing to examine CDC's highly deceptive approach to this outbreak in depth, please consult Dr. Michael Siegel's numerous post from August 2019 onwards on: [The Rest of the Story: Tobacco and Alcohol News Analysis and Commentary](#)

3. Are e-cigarettes more dangerous than regular cigarettes?

This depends on a range of factors, including the amount of nicotine and other toxicants in the heated liquids, but we know that ENDS pose clear health risks and are by no means safe.

The *question itself* is a scandal. No respectable scientist believes that ENDS are even close to the risk of smoking. So the question is designed to introduce "[anchoring bias](#)" - establishing the idea that the question on everyone's mind is whether ENDS are more dangerous than cigarettes or about the same, thus suggesting parity of risk is the best case for ENDS. Implying that is deeply unethical and could have serious health consequences if it causes people to abandon ENDS for cigarettes or not to switch.

The answer provided is a non-answer – a non-sequitur. The question is whether ENDS exceed 100% of the risk of cigarettes, the answer provided is that ENDS do not have zero risk. In my view, the dishonest framing of the question is the purpose and information payload here.

There is an active debate about the relative risk of ENDS and cigarettes, but the question is “*how much less risky are ENDS than cigarettes?*”. The National Academies of Science Engineering and Mathematics said in its 2018 report: The Public Health Consequences of E-cigarettes. . [[link](#)] Launch presentation summary (slide 44) [[link](#)][[link](#)]

While e-cigarettes are not without health risks, they are likely to be far less harmful than combustible tobacco cigarettes.

The Royal College of Physicians 2016 report, [Nicotine Without Smoke: tobacco harm reduction](#), reviewed the available science and concluded:

Although it is not possible to precisely quantify the long-term health risks associated with e-cigarettes, the available data suggest that they are unlikely to exceed 5% of those associated with smoked tobacco products, and may well be substantially lower than this figure”. (Section 5.5 page 87)

For more on the absurd and irresponsible activist claim that ENDS and cigarettes are equivalent in risk, see: [Vaping risk compared to smoking: challenging a false and dangerous claim by Professor Stanton Glantz](#)

4. Are ENDS addictive?

Yes. Nicotine is highly addictive, and ENDS involve the inhalation of a nicotine-infused aerosol.

The answer a gross over-simplification. First, “addiction” is a loaded and pejorative term. In professional communication, such language needs to be carefully defined. It usually means some sort of additional harm (disease, mental impairment, loss of employment, family breakdown) arises because of compulsive behaviour. In fact, WHO itself avoids the term “addiction” and uses the preferable term: [dependence syndrome](#). According to WHO itself, diagnosis of dependence depends on:

Persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually, or could be expected to be, aware of the nature and extent of the harm.

In the case of smoking, the harms are well documented – cancer, cardiovascular disease, respiratory illness etc. But what is the harm arising from vaping? In fact, for many it is the *harm reduction* that turns nicotine use from a compulsion back into a pleasure that they would not wish to forego: see, for example, the New Nicotine Alliance on the [Vaping and the Pleasure Principle](#).

Whether nicotine is dependence-forming depends also on *how it is delivered* – how quickly it reaches the brain and the peak level it reaches in the blood. This what experts refer to as the pharmacokinetics or “PK” and this is a function of the delivery system and in the case of tobacco smoke, possible other reinforcers. We do not see WHO warning about nicotine replacement therapy, for example. This is because NRT products (patches, gum etc) are designed not to have dependence forming characteristics, or to minimise what pharmaceutical regulators call “abuse liability”. The cigarette is the undisputed champion of nicotine PK (at least for now) and this remains the reason why smoking is so popular and smoking is so hard to quit.

But here’s the catch: this is why NRTs are not very effective at helping smokers quit smoking. Harm reduction supporters take a different approach. They recognise that nicotine is a legal drug and unlikely to be banned outright, but widely used in its most dangerous form (smoking). They are looking for the ‘reward’ provided by vaping to be equivalent to or at least competitive with smoking, so as to help users switch by choice. Trying to suppress this amounts to protection of cigarette trade from competition. But so much of what WHO says and does has exactly that effect.

5. Are secondhand ENDS emissions

dangerous?

Yes. The aerosols in ENDS typically contain toxic substances, including glycol which is used to make antifreeze. ENDS pose risks to users and non-users.

Oh dear, this is really is *so embarrassing*. Glycol is not a chemical itself, but a *class of chemicals*. The ethylene glycol used in anti-freeze is a completely different substance to the propylene glycol used in vaping liquids. Two minutes spent consulting the internet would have clarified this. Here is an extract from the Encyclopedia Britannica entry on [Glycol](#):

Ethylene glycol (also called 1,2-ethanediol, molecular formula HOCH₂CH₂OH) is a colourless, oily [liquid](#) possessing a sweet taste and mild odour. It is produced commercially from ethylene oxide, which is obtained from [ethylene](#). Ethylene glycol is widely used as [antifreeze](#) in automobile cooling systems and in the manufacture of human-made fibres, low-freezing [explosives](#), and brake fluid. Ethylene glycol and some of its derivatives are mildly toxic.

[Propylene glycol](#), also called 1,2-propanediol, resembles ethylene glycol in its physical properties. Unlike ethylene glycol, however, propylene glycol is not toxic and is used extensively in foods, cosmetics, and oral hygiene products as a solvent, preservative, and moisture-retaining agent. Propylene glycol is manufactured in large amounts from propylene oxide, which is obtained from [propylene](#).

But the presence (fact check = *absence*) of ethylene glycol, in any case, misses the point. Overall: bystanders are exposed to far lower levels of toxins and for much less time. There are three reasons why indoor emissions of vapour aerosol are far less risky than second-hand smoke.

1. *The quantity emitted.* Most of the inhaled vapour is absorbed by the user and only a small fraction is exhaled (15% or less, depending on the constituent). In contrast, about four times as much environmental tobacco smoke comes directly from the burning tip of the cigarette than is exhaled by the smoker. There is no equivalent of this “sidestream smoke” for vaping.

2. *The toxicity of the emissions.* Tobacco smoke contains hundreds of toxic products of combustion that are either not present or present at very low levels in vapour aerosol. Vapour emissions do not have toxins present at levels that pose a material risk to health.
3. *The time that the emissions remain in the atmosphere.* Environmental tobacco smoke persists for far longer in the environment (about 20-40 minutes per exhalation). The vapour aerosol droplets evaporate in less than a minute and the gas phase disperses in less than 2 minutes.

No case has so far been made that this amounts to a meaningful risk to bystanders, rather than a nuisance. It is not a reason for ENDS use to be allowed everywhere, but also not a reason to ban it everywhere by law. The correct balance of responsibilities is to allow property owners or managers to decide where their customers, clients, employees, visitors etc can use ENDS.

None of this factual and policy-relevant information is conveyed by WHO - rather, it is obscured by WHO's absurd generalisations and elementary errors.

6. Should ENDS be banned?

Countries can choose to ban ENDS. ENDS are currently banned in over 30 countries worldwide, with more and more countries considering bans to protect young people.

This answers the wrong question and conceals the problems of prohibition. The question is “*should* ENDS be banned?” not “*can* ENDS be banned?” Yes. Countries appear to free to ban ENDS, though this may be limited by WTO anti-discrimination law if such bans have the aim or effect of protecting the domestic cigarette trade: see [Policy study: E-vapor product bans could violate international trade rules, R Street Institute](#).

WHO does not provide an answer to its own question. To do so would mean discussing the likely unintended consequences of such a ban. These include:

- current vapers reverting to smoking
- current smokers not switching to vaping
- new users (adolescents) taking up smoking instead of vaping
- a boost for the cigarette trade

- the development of widespread home DIY mixing
- the development of a black market in vaping products - with issues of quality and consumer rights and loss of regulatory supervision
- the enrichment of criminals and increase in crime
- the exposure of more people to criminal suppliers who also supply illicit drugs and other illegal commodities
- ...and *above all...* the basic infringement of the liberty and autonomy of people to control their own risks and make their own decision and to take their own initiatives to protect their own health at their own expense

They would also have to compare these to the benefits:

- [to be completed by WHO]
- [etc.]
- [er...]

Once again, the answer provided is an empty *non-sequitur* that adds nothing. I suspect the point of the question is to normalise the idea of bans and to create a [default effect](#) - it certainly does nothing to justify banning ENDS.

7. Should ENDS be regulated?

Yes. ENDS are harmful to health and, where they are not banned, they must be regulated.

WHO recommends that countries implement regulatory measures that best fit their domestic context.

Regulation should:

- * *disrupt the promotion and uptake of ENDS products;*
- * *reduce the potential health risks to ENDS users and non-users;*
- * *prohibit false or unproven claims from being made about ENDS; and,*
- * *protect existing tobacco-control efforts.*

About 15 000 unique flavours are used in ENDS, including flavours designed to attract young people, like bubble gum and cotton candy.

Governments should restrict ENDS advertising, promotion and sponsorship so young people, other vulnerable groups and non-smokers are not targeted.

The use of ENDS in indoor public and work places should be banned, given the health risks posed to non-users.

Taxing ENDS in a similar way to tobacco products offers a win-win for

governments by protecting citizens through higher prices that deter consumption.

The answer entirely ignores the potential harmful unintended consequences of the proposed policies. There are very few pro-harm reduction advocates that argue for zero regulation, and much consumer protection regulation applies by default in every jurisdiction. *The question is what is the right form of regulation?* To understand this, a policymaker needs to consider not only what they are trying to achieve with regulation, but also what unintended harmful consequences that such regulation may have (see the example of a prohibition at Q6 above). For example, a ban on advertising ENDS has the effect of protecting the market incumbent (cigarettes) from the disruptive entrant (ENDS). A ban on flavours, especially if cast broadly, can make ENDS less appealing to adult smokers and mean that fewer switch. I have detailed the risks here: [Plausible unintended consequences of excessive regulation of low-risk nicotine products](#).

The Royal College of Physicians put it neatly in its [2016 report](#):

However, if [a risk-averse, precautionary approach to e-cigarette regulation] also makes e-cigarettes less easily accessible, less palatable or acceptable, more expensive, less consumer friendly or pharmacologically less effective, or inhibits innovation and development of new and improved products, then it causes harm by perpetuating smoking. Getting this balance right is difficult. (Section 12.10 page 187)

It is difficult to strike this balance. However, in doing so, the policymaker should recall that smoking is vastly riskier than ENDS use and therefore unintended effects that “cause harm by perpetuating smoking” should be uppermost in the appraisal of policy, which should be strongly weighted against to possibility of creating more smoking. WHO simply is not doing its job by gliding over the risks of harms caused by regulation and ignoring unintended consequence of badly designed or excessive policy interventions.

So what is the right approach to regulation?

Regulation of tobacco and nicotine products should be “risk-proportionate” - with more stringent controls placed on the highest risk products. This means, for example:

1. high taxes on cigarettes, but low or no taxes on e-cigarettes;
2. bans on cigarette advertising, but controls on content and placement of e-cigarette advertising to prevent marketing to teens;
3. bans on smoking in public places, but vaping policy should be a decision for the owners or managers of buildings;
4. large graphic health warnings on cigarettes, but messages encouraging switching to e-cigarettes either on or inside the packaging of both cigarettes and e-cigarettes;
5. plain-packaging for cigarettes, but not e-cigarettes;
6. regulation of product formulation that makes switching to vaping relatively more attractive than continuing to smoke;
7. regulation that addresses electrical, chemical, thermal and mechanical product risks where these benefit consumers;
8. regulation of containers to make them child-resistant;
9. differential age restrictions, for example, age 21 for cigarettes, but 18 for e-cigarettes;
10. bans on internet sales of cigarettes, but not on e-cigarettes;
11. vaping-friendly stop-smoking services;
12. campaigns to discourage smoking, but to encourage switching.

You can read more about this subject in the proposals we made for risk-proportionate regulation in New Zealand in August 2019: [A Surge Strategy for Smokefree Aotearoa 2025 The role and regulation of vaping and other low-risk smokefree nicotine products](#)

8. Do ENDS help you quit smoking?

There is not enough evidence to support the use of these products for smoking cessation. For tobacco users looking to quit, there are other proven, safer and licensed products, such as nicotine replacement therapies (such as patches and gums), as well as quit lines, mobile messaging and specialized tobacco dependence treatments.

In this answer WHO ignores or dismisses the actual evidence with a sweeping generalisation. The only way WHO could support a claim like this is if it ignores the extensive available evidence or sets an impossibly high standard for certainty that it doesn't apply to its preferred methods or to anything else.

There are now four strands of evidence that suggest e-cigarettes are effective in helping people to quit smoking:

1. evidence from randomised controlled trials, notably, [Hajek et al 2019](#), which showed vaping to be about twice as effective as NRT; *“E-cigarettes were more effective for smoking cessation than nicotine-replacement therapy, when both products were accompanied by behavioral support.”*
2. observational studies (watching what happens when people use e-cigarettes) for example, [Jackson et al 2019](#); *“Use of e-cigarettes and varenicline are associated with higher abstinence rates following a quit attempt in England.”*
3. population data (unusually rapid reductions in smoking prevalence and cigarette sales), for example, [Zhu S-H et al, 2018](#). *“The substantial increase in e-cigarette use among US adult smokers was associated with a statistically significant increase in the smoking cessation rate at the population level. These findings need to be weighed carefully in regulatory policy making regarding e-cigarettes and in planning tobacco control interventions.”*
4. the thousands of testimonials of users who have struggled to quit using other methods. See, for example, CASAA ([12,500 testimonials](#)) and, before dismissing ‘anecdotes’, make sure you read Carl V Phillips on why [Anecdotes ARE scientific data](#)

None are decisive in themselves. But all four sources, point towards e-cigarettes displacing smoking. You could also add “common sense”. An alternative way of taking nicotine with a fraction of the health risk and stigma, combined with other attractive features, should be *expected* to displace smoking in the normal ways that technology evolves. It would require strong evidence for the idea that ENDS somehow increases smoking or leaves it unaffected. No such evidence exists.

Also, the evidence for WHO’s preferred methods – as used in real life rather than in trials – is nothing like as conclusive as it implies.

9. What is WHO doing about ENDS?

WHO regularly monitors and reviews the evidence on ENDS and health and offers guidance to governments and the public. This includes the biennial WHO Report on the Global Tobacco Epidemic, which tracks the status of the tobacco

epidemic and interventions to combat it and other relevant resources. WHO strives to build a safer, healthier world for everyone, everywhere.

On the basis of this Q&A, there is no sign that WHO monitors or reviews the evidence in any sort of comprehensive or thoughtful way. Instead, it cherry-picks, distorts and fabricates evidence which it uses to mislead the public and government to pursue its “abstinence-only” prohibitionist agenda.

WHO mentions the report, [WHO Report on the Global Tobacco Epidemic](#). This publication is highly hostile to ENDS, the following passage is typical of the florid emotive language used:

These products are aggressively marketed or promoted as cleaner alternatives to conventional cigarettes, as smoking cessation aids, or as “reduced risk” products. They have proliferated in several markets around the globe and present a unique challenge to regulators. While some of these products have lower emissions than conventional cigarettes, they are not risk free, and the longterm impact on health and mortality is as-yet unknown.

WHO ignores a giant conflict of interest embedded in its operations. WHO’s work in this field is also built on a conflict of interest that should be a source of real concern to those involved in WHO governance. The report mentioned above was made possible by a grant from Bloomberg Philanthropies, it has a foreword by Michael Bloomberg and had input from Bloomberg funded staff.



WHO takes the Bloomberg

dollar for its anti-vaping report

In his foreword, Bloomberg highlights his role as WHO Global Ambassador for Noncommunicable Diseases and Injuries Founder, Bloomberg Philanthropies, and brags about his influence over the organisation:

The World Health Organization and Bloomberg Philanthropies are committed to accelerating the reduction of tobacco use worldwide. The challenges are daunting, but together, we are proving that this is a winnable fight.

Bloomberg Philanthropies works in close partnership with Director-General Tedros Ghebreyesus and WHO to combat NCDs and global support for effective policies is growing.

Though it claims the work is all WHO, substantial Bloomberg-funded staff contributions are acknowledged:

We thank Jennifer Ellis, Kelly Henning and Adrienne Pizatella of the Bloomberg Initiative to Reduce Tobacco Use for their collaboration. [...]. Our thanks also go to the Institute for Global Tobacco Control at the Johns Hopkins Bloomberg School of Public Health, specifically Joanna Cohen and Kevin Welding. We would also like to thank [Bloomberg funded] Vital Strategies for their collaboration in collecting and reviewing the data on tobacco control mass media campaigns, specifically Therese Buendia, Christina Curell and Alexey Kotov, as well as: Luiza Amorim, Ilona van de Braak, Tom Carroll, Tuba Durgut, Carlos Garcia, Shafiqul Islam, Ziauddin Islam, Vaishakhi Mallik, Irina Morozova, Sandra Mullin, Nandita Murukutla, Nguyen Nhung, Rebecca Perl, Ancha Rachfiansyah, Benjamin Gonzalez Rubio, Md. Nasir Uddin and Winnie Chen Yu. Special thanks also to the [Bloomberg-funded] Campaign for Tobacco Free Kids, especially Maria Carmona, Kaitlin Donley and Monique Muggli for their constructive exchange of tobacco control information and legislation. (emphasis added).

The involvement of the Bloomberg (and Gates) foundations in the tobacco control programmes of the WHO and the World Bank is described in more disturbing academic detail here: [Mukaigawara et al. 2018, Balancing science and political economy: Tobacco control and global health \[PDF\]](#), which includes the following figure, showing how Bloomberg also funds NGOs that interact with WHO - many

of which have observer status at the FCTC meetings.

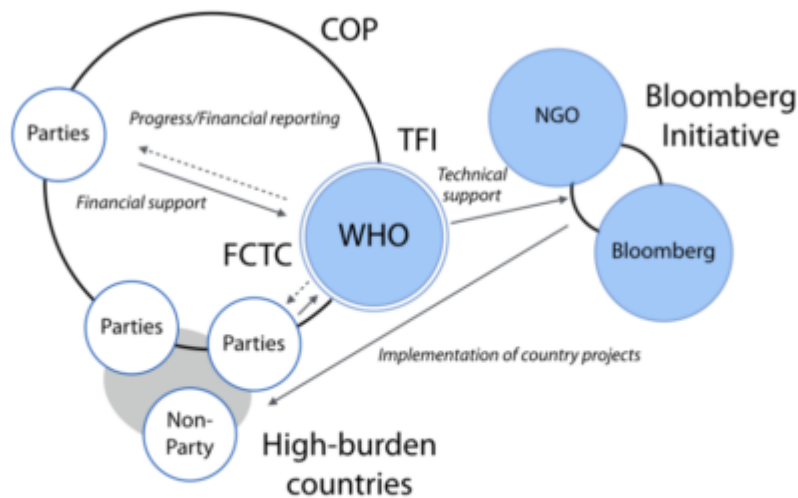


Figure 4. Governance structure of the World Health Organization's (WHO) tobacco control programme. The WHO functions as the secretariat of the FCTC and the TFI. The FCTC is funded by the voluntary assessed contributions and extra-budgetary funding, the former from the Parties of the FCTC. The WHO is accountable to the Parties, and documents are available on its public website. The TFI produces technical reports, but its country projects are implemented as the Bloomberg Initiative to Reduce Tobacco Use. The WHO is a part of this initiative, but has no authority in the selection of funded projects. Abbreviations: Bloomberg = Bloomberg Philanthropies; COP = Conference of Parties; FCTC = Framework Convention on Tobacco Control; NGO = Non-governmental organisations; TFI = Tobacco Free Initiative. Sources: <http://www.who.int/fctc/en/>, <http://www.who.int/tobacco/about/partners/bloomberg/en/>.

Why should we care about Bloomberg money propping up WHO?

In a January 2020 [interview with the New York Times](#), Mr Bloomberg declared himself in favour of prohibiting vaping products.

Interviewer: Would you ban vaping products entirely?

Bloomberg (answering as a US presidential candidate): I think you can make a very good case to do so. It would be great if the President did that.

In other words, he takes the most hostile possible position against ENDS – an outlier. Bloomberg is a financial services billionaire with no special expertise on public health and no experiences of the lives directly affected by these policies. Undaunted by his inexperience, he nevertheless holds very strong views on ENDS and other tobacco-related issues. He is entitled to his poorly-informed opinions, but the WHO shareholders (i.e. governments) should be wary of the Bloomberg empire's strong policy preferences – it is not a neutral funder. Bloomberg has, for example, provided \$160m to ban flavoured e-cigarettes: [Bloomberg to spend \\$160 million to ban flavored e-cigarettes](#) (Washington Post, September 2019), yet it is very likely that such a prohibitionist move would cause far more harm than good:

see [The US vaping flavour ban: twenty things you should know](#).

Bonus question: what should the WHO Executive Board do now?

This question is posed by me to suggest how WHO could be better. It was not part of WHO's Q&A. But this is what I think WHO should do (and its board shareholders should insist on).

1. The [anti-vaping Q & A](#) is obviously a fiasco and the page should be taken down and the content should be withdrawn and no longer endorsed as a WHO view. But it is better to see this as a symptom, a manifestation of deeper causes, rather than the underlying problem. The fact that there have since been updates does not change the underlying conditions that allowed the original to be published. The remaining recommendations address the underlying cause.
2. Stop the evidence-free anti-ENDS and anti-harm-reduction activism within WHO and listen to the wiser if quieter voices in the expert community and pay attention to the many consumers with real insights and direct experience. Then rethink the organisation's approach to innovation and tobacco harm reduction. Please consult, for example, this letter from 72 experts in nicotine policy and science to the WHO Director-General Dr Tedros Adhanom Ghebreyesus, [Innovation in tobacco control: developing the FCTC to embrace tobacco harm reduction](#) in October 2018. Or read Professor Robert Beaglehole and others (including me) in *The Lancet*, [Nicotine without smoke: fighting the tobacco epidemic with harm reduction](#) August 2019 making the case for a more constructive approach by WHO.
3. Restore scientific credibility to the organisation by reconstituting its [advisory committee TobReg](#) and relying more heavily on expert advice for evidence-based policy-making rather than using hand-picked consultants to provide policy-based evidence-making service to bolster the organisation's otherwise unsupportable positions. There are strong reasons not to allow public trust to haemorrhage from one part of the organisation to the detriment of the credibility of whole of WHO.
4. By appointment, training or secondment, raise the quality of science

capabilities in the Tobacco Free Initiative and FCTC Secretariat and improve the quality and importance of scientific challenge within WHO tobacco control functions.

5. *Do not fire* the person or persons who wrote this false and misleading Q & A. This is a problem of *governance and quality control* - the question is who signed it off and who takes responsibility for the scientific integrity of WHO's public communications? If the accountability is unclear, then that is the problem and WHO's Executive Board should investigate.
6. Stop taking money from external organisations that create obvious conflicts of interest because of these organisation's very pronounced advocacy and policy agendas. In the case of ENDS and tobacco harm reduction, the excessively intimate involvement of Bloomberg-funded activist entities like Bloomberg Philanthropies, Campaign for Tobacco-Free Kids and Vital Strategies is corrosive to the independence and objectivity of the WHO and should stop.
7. Refine the WHO guidance on [Engagement with non-state actors](#) to protect tobacco and nicotine policy from interference from the ideological and other vested interests of wealthy activists.
8. WHO shareholders - especially the UK - should withhold funding for the tobacco control operations of WHO until the executive can show that it is acting responsibly and that there is acceptable scientific and communications governance in the organisation. This should not affect emergency infectious disease capabilities.

Update: what WHO has changed

On 29 January 2019 WHO made substantial changes to its Q & A. It did not announce this or place any kind of notification on its web site nor did it correct any errors or withdraw its earlier statements. Yet it had promoted the Q & A quite heavily on the day of publication.

In this table, the two versions are presented side-by-side.

20 January 2020: the original version	29 January 2020: the amended version
E-cigarettes: how risky are they?	E-cigarettes

Are e-cigarettes and other vaping products dangerous?

There are many different types of e-cigarettes in use (also known as Electronic Nicotine Delivery Systems (ENDS)), with varying amounts of nicotine and harmful emissions.

ENDS emissions typically contain nicotine and other toxic substances that are harmful to both users and those exposed to the vapours secondhand. Some devices that claim to be nicotine-free have been found to contain nicotine.

There is no doubt that they are harmful to health and are not safe, but it is too early to provide a clear answer on the long-term impact of using them or being exposed to them.

ENDS are particularly risky when used by adolescents. Nicotine is highly addictive and young people's brains develop up to their mid-twenties.

Exposure to nicotine can have long-lasting, damaging effects.

Young people who use ENDS are also more likely to use conventional cigarettes, cigars or hookahs.

ENDS increase the risk of heart disease and lung disorders. For pregnant women, ENDS pose significant risks as they can damage the growing fetus.

ENDS also expose non-smokers and bystanders to nicotine and other harmful chemicals.

The liquid in ENDS can burn skin and rapidly cause nicotine poisoning if swallowed or absorbed through the skin. There is a risk of the devices leaking, or of children swallowing the liquid, and ENDS have been known to cause serious injuries through fires and explosions.

Are e-cigarettes and other vaping products dangerous?

There are many different types of e-cigarettes. E-cigarettes are the most common form of electronic nicotine delivery systems (ENDS) and electronic non-nicotine delivery systems (ENNDS) but there are others, such as e-cigars, e-pipes, etc. ENDS contain varying amounts of nicotine and harmful emissions.

E-cigarette emissions typically contain nicotine and other toxic substances that are harmful to both users, and non-users who are exposed to the aerosols secondhand.

Some products claiming to be nicotine-free have been found to contain nicotine. Evidence reveals that these products are harmful to health and are not safe. However, it is too early to provide a clear answer on the long-term impact of using them or being exposed to them.

They are particularly risky when used by children and adolescents. Nicotine is highly addictive and young people's brains develop up to their mid-twenties. Exposure to nicotine of children and adolescents can have long-lasting, damaging effects on brain development and there is risk of nicotine addiction.

Furthermore, there is a growing body of evidence in some settings that never-smoker minors who use ENDS at least double their chance of starting to smoke conventional tobacco cigarettes later in life.

ENDS use increases the risk of heart disease and lung disorders. They also pose significant risks to pregnant women who use them, as they can damage the growing fetus.

ENDS also expose non-smokers and bystanders to nicotine and other harmful chemicals.

Exposure of children to ENDS liquid continues to pose serious risks. There is a risk of the devices leaking, or of children swallowing the liquid, and ENDS have been known to cause serious injuries, including burns, through fires and explosions.

<p>Do e-cigarettes (ENDS) cause lung injuries?</p> <p>There is growing evidence to show that ENDS use could cause lung damage.</p> <p>On 17 September 2019, the United States Centers for Disease Control and Prevention activated an emergency investigation into links between ENDS use and lung injuries and deaths.</p> <p>By 10 December 2019, the USA reported more than 2409 hospitalized cases and 52 confirmed deaths.</p> <p>At least five other countries have initiated investigations to identify cases of lung injuries related to ENDS use.</p>	<p>Do e-cigarettes (ENDS) cause lung injuries?</p> <p>There is growing evidence that ENDS could be associated with lung injuries and in recent times e-cigarette and vaping have been linked to an outbreak of lung injury in the USA. This is described by the United States Centers for Disease Control and Prevention (CDC) as ‘e-cigarette or vaping associated lung injury’ (EVALI), which led the CDC to activate an emergency investigation into EVALI on 17 September 2019. The CDC says “as of 14 January 2020, there have been a total of 2,668 cases of EVALI reported from all 50 states, the District of Columbia, Puerto Rico, and the US Virgin Islands, including 60 deaths confirmed in 27 states and the District of Columbia. Among 2,022 hospitalized cases with information on substances used, 1,650 (82%) reported using any THC-containing product, and 1,162 (57%) reported using any nicotine-containing product; 669 (33%) reported exclusive THC-containing product use, and 274 (14%) reported exclusive nicotine-containing product use.” Further information on this incident, including a strong link of the EVALI outbreak to Vitamin E Acetate and the latest report, is available at https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html, which is updated every week, as the evidence is not sufficient to exclude the contribution of other chemicals.</p> <p>At least five other countries have initiated investigations to identify cases of lung injuries related to the EVALI cases reported in the US.</p>
<p>Are e-cigarettes more dangerous than regular cigarettes?</p> <p>This depends on a range of factors, including the amount of nicotine and other toxicants in the heated liquids, but we know that ENDS pose clear health risks and are by no means safe.</p>	<p>Are e-cigarettes more or less dangerous than conventional tobacco cigarettes?</p> <p>It is difficult to generalize on the risk to health of ENDS as compared with cigarettes or other tobacco products, as this is contingent on a range of factors.</p> <p>Both tobacco products and ENDS pose risks to health. The safest approach is not to use either.</p> <p>The levels of risk associated with using ENDS and/or tobacco products are likely to depend on a range of factors, some relating to the products used and some to the individual user. Factors include: product type and characteristics, how the products are used, including frequency of use, how the products are manufactured, who is using the product, and whether product characteristics are manipulated post-sale.</p> <p>Toxicity is not the only factor in considering risk to an individual or a population from exposure to ENDS emissions. These factors may include the potential for abusing or manipulating the product, use by children and adolescents who otherwise would not have used cigarettes, simultaneous use with other tobacco products (dual or poly use) and children and adolescents going on to use smoked products following experimentation with ENDS. Further, not all ENDS are the same and the risks to health may differ from one product to another, and from user to user.</p>
<p>Are ENDS addictive?</p> <p>Yes. Nicotine is highly addictive, and ENDS involve the inhalation of a nicotine-infused aerosol.</p>	<p>Are ENDS addictive?</p> <p>ENDS contain nicotine, which is highly addictive, and ENDS use involves the inhalation of a nicotine-infused aerosol.</p>
<p>Are secondhand ENDS emissions dangerous?</p> <p>Yes. The aerosols in ENDS typically contain toxic substances, including glycol which is used to make antifreeze. ENDS pose risks to users and non-users.</p>	<p>Are secondhand ENDS emissions dangerous?</p> <p>The aerosols generated by ENDS typically contain toxic substances. ENDS pose risks to both users and non-users.</p>

<p>Should ENDS be banned?</p> <p>Countries can choose to ban ENDS. ENDS are currently banned in over 30 countries worldwide, with more and more countries considering bans to protect young people.</p>	<p>[Deleted and incorporated in the next question]</p>
<p>Should ENDS be regulated?</p> <p>ENDS are currently banned in over 30 countries worldwide, with more and more countries considering bans to protect young people. Yes. ENDS are harmful to health and, where they are not banned, they must be regulated. WHO recommends that countries implement regulatory measures that best fit their domestic context.</p> <p>Regulation should:</p> <ul style="list-style-type: none"> • disrupt the promotion and uptake of ENDS products; • reduce the potential health risks to ENDS users and non-users; • prohibit false or unproven claims from being made about ENDS; and, <ul style="list-style-type: none"> • protect existing tobacco-control efforts. <p>About 15 000 unique flavours are used in ENDS, including flavours designed to attract young people, like bubble gum and cotton candy.</p> <ul style="list-style-type: none"> • Governments should restrict ENDS advertising, promotion and sponsorship so young people, other vulnerable groups and non-smokers are not targeted. <p>The use of ENDS in indoor public and work places should be banned, given the health risks posed to non-users.</p> <p>Taxing ENDS in a similar way to tobacco products offers a win-win for governments by protecting citizens through higher prices that deter consumption.</p>	<p>What are the policy options for regulating ENDS?</p> <p>How a country approaches ENDS will depend on factors particular to its situation. ENDS are currently banned in over 30 countries worldwide. In others they are regulated as consumer products, as pharmaceutical products, as tobacco products, other categories or totally unregulated.</p> <p>Where they are not banned, WHO recommends that ENDS be regulated.</p> <p>Regulatory objectives include:</p> <ul style="list-style-type: none"> • Preventing initiation of ENDS use by non-smokers and children, such as by preventing or restricting advertising, promotion and sponsorship, and restricting flavours that appeal to children • Minimizing as far as possible potential health and/or risks to ENDS users, such as by regulating product characteristics • Protecting non-users from exposure to their emissions, such as by prohibiting ENDS use in indoor spaces where smoking is not permitted <ul style="list-style-type: none"> • Preventing unproven health claims • Protecting public health policies from commercial and other vested interests
<p>Do ENDS help you quit smoking?</p> <p>There is not enough evidence to support the use of these products for smoking cessation.</p> <p>For tobacco users looking to quit, there are other proven, safer and licensed products, such as nicotine replacement therapies (such as patches and gums), as well as quit lines, mobile messaging and specialized tobacco dependence treatments.</p>	<p>What role do ENDS play in smoking cessation?</p> <p>The scientific evidence regarding the effectiveness of ENDS as a smoking cessation aid is still being debated. To date, in part due to the diversity of ENDS products and the low certainty surrounding many studies, the potential for ENDS to play a role as a population-level tobacco cessation intervention is unclear.</p> <p>To truly help tobacco users quit and to strengthen global tobacco control, governments need to scale up policies and interventions that we know work. Tried and tested interventions, such as brief advice from health professionals, national toll free quit lines and cessation interventions delivered via mobile text messaging is recommended.</p> <p>Where economically feasible, governments should also consider promoting nicotine replacement therapies and non-nicotine pharmacotherapies for cessation.</p>

<p>What is WHO doing about ENDS?</p> <p>WHO regularly monitors and reviews the evidence on ENDS and health and offers guidance to governments and the public.</p> <p>This includes the biennial <i>WHO Report on the Global Tobacco Epidemic</i>, which tracks the status of the tobacco epidemic and interventions to combat it and other relevant resources.</p> <p>WHO strives to build a safer, healthier world for everyone, everywhere.</p>	<p>What is WHO doing about ENDS?</p> <p>WHO regularly monitors and reviews the evidence on ENDS and health and offers guidance to governments.</p> <p>This includes the biennial <i>WHO Report on the Global Tobacco Epidemic</i>, which tracks the status of the tobacco epidemic and interventions to combat it and other relevant resources.</p> <p>WHO strives to build a safer, healthier world for everyone, everywhere.</p>
	<p>What further information is available?</p> <p>Links to WHO reports with further information on e-cigarettes or ENDS to which the reader can refer are provided below:</p> <ul style="list-style-type: none"> • WHO report on the global tobacco epidemic, 2019. Geneva: World Health Organization, 2019. • Ghebreyesus TA. (2019). Progress in beating the tobacco epidemic. Lancet. (published online July 26) • WHO Study Group on Tobacco Product Regulation. Report on the scientific basis of tobacco product regulation: seventh report of a WHO study group. Geneva: World Health Organization; 2019 (WHO Technical Report Series, No. 1015). Licence: CC BY-NC-SA 3.0 IGO