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The Global State of Tobacco Harm Reduction 2022: The Right Side of History

This Briefing Paper, drawn from *The Global State of Tobacco Harm Reduction 2022: The Right Side of History*, considers when, how and why the approach now known as tobacco harm reduction really began. When was it established that smoking-related diseases were not caused by nicotine, but by the thousands of chemicals released when tobacco burns? Who began looking for safer ways to use nicotine – and why were there so many false starts? How did nicotine consumers themselves influence the development both of safer products, and of tobacco harm reduction itself? What has been the response of public health and tobacco control organisations to these changes in nicotine use?

And are we now going to see the opportunity to end smoking slip away – leaving the tobacco industry to continue profiting from the sale of combustible cigarettes?

The disruptive potential of tobacco harm reduction using safer nicotine products

The global public health crisis caused by smoking sees eight million deaths each year, more than from HIV/AIDS, tuberculosis and malaria combined. The populations of many low- and middle-income countries, and vulnerable and disadvantaged groups in high-income countries, are disproportionately impacted.^{i, ii} Despite considerable investment and effort over decades, international tobacco control measures have stalled: the total number of smokers worldwide has remained static at 1.1 billion for the past two decades.ⁱ

Until the turn of the 21st century, most smokers had little choice: quit, or face a high chance of illness or early death. But new options now exist that were unavailable before. **Tobacco harm reduction** encourages people who smoke and who either cannot, or do not want to stop using nicotine, to switch to significantly safer nicotine products, including nicotine vapes, tobacco-free nicotine pouches, Swedish-style snus and heated tobacco products.

It is only in the last two decades that many safer nicotine products have become both available and their relative safety in comparison to continued smoking confirmed.ⁱⁱⁱ GSTHR estimates show that over 112 million people already use them worldwide.^{iv} This is despite these significantly safer products facing prohibitive regulation in many countries, while the sale of deadly combustible cigarettes is universally legal. The disruptive potential of safer nicotine products – to public health, to governments and regulators, and to commercial interests – has been significant and is not yet fully realised. But how, when and why did the disruptive force of tobacco harm reduction emerge?

The genesis of tobacco harm reduction

While humans have smoked tobacco for thousands of years, the mass consumerisation of tobacco smoking followed the invention of the cigarette rolling machine in the 1880s.^v By the 1950s, the severe health risks of smoking became evident and since the 1960s, efforts began to encourage smokers to

quit.^{vi, vii} Between 1971 and 1998, the World Health Assembly, the governing body of the World Health Organization, passed 17 resolutions on different aspects of tobacco control.^{viii} In 1996, a process began that eventually culminated in the enactment of the Framework Convention on Tobacco Control in 2003, the first international treaty under the auspices of the WHO.^{ix}

As early as the 1970s, health researchers had clearly shown that the use of nicotine was the primary motivation for smoking tobacco, and that nicotine was not the cause of the most severe smoking-related harms.^x Academics in the UK, such as Michael Russell and Martin Jarvis, and clinician Brad Rodu in the US, noted that some forms of nicotine delivery such as snuff, snus and smokeless tobacco were both less harmful to health than smoking and palatable to consumers, leading them to consider the potential benefits of encouraging people who smoked to switch.^{xi-xiv}

The Swedish experience, which saw the substitution of cigarettes with pasteurised snus from the 1980s onwards, began to provide large-scale epidemiological evidence of the population-level health benefits of a switch away from combustible tobacco to less harmful nicotine products.^{xv, xvi, xvii} 'Harm reduction' was a term coined in the 1980s to refer to pragmatic interventions that reduced health risks associated with substance use and sexual activity at the height of the HIV/AIDS crisis.^{xviii} By 1997, tobacco researchers began to reference 'harm reduction' in the literature on smoking and tobacco-related risk.^{xix}

In response to growing health concerns and reduced consumer confidence, tobacco companies repeatedly made attempts to create and heavily promote 'safer' cigarettes throughout the 20th century. But the products remained deadly, and the tobacco companies knew it; the manifold deceptions practised by the industry were laid bare in the 1990s, leading to significant legal and financial consequences. Ultimately, tobacco industry efforts to significantly reduce the harms of combustible tobacco ended in failure. With no viable safer products to offer, a huge and still growing consumer base meant the commercial imperative was still weighted in favour of combustible cigarettes.

The work of individual innovators kickstarts the journey to modern safer nicotine products

Many of the innovations that began the journey to today's safer nicotine products actually started life beyond either public health-focused academic research or the profit-driven world of the tobacco industry. A small number of individuals, motivated by their own desire to quit smoking, pursued a range of innovations which would eventually lead to the development of modern vaping products.

Back in 1963, Herbert Gilbert, a Pennsylvanian business studies graduate, former serviceman and 40-a-day smoker, filed a patent for a 'Smokeless Non-Tobacco Cigarette'.^{xx} Battery-powered, it contained a flavour cartridge and no tobacco, but the product never made it to market. In the late 1970s, American physician Dr Norman Jacobson worked with one of his patients, Phil Ray, a NASA space engineer and heavy smoker, to find a way of inhaling nicotine without smoke. Jacobson and Ray successfully trialed their plastic device containing nicotine-soaked paper for inhalation – a process they described as 'vaping'. Launched in 1985 under the brand name 'Favor', issues with storage requirements reduced its marketability, and in 1987, the product was banned by the FDA.^{xxi}

Eventually, the solution came from China. In the early 2000s, pharmacist Hon Lik, a heavy smoker, was motivated to find a safer way to consume nicotine when his father, also a smoker, was diagnosed with lung cancer. In 2003, he experimented with a high-frequency piezoelectric ultrasound-emitting element to vaporise a liquid containing nicotine. Ultimately, design iterations led Hon Lik to perfect a cigarette-

sized device containing a small battery-powered heating element. This vapourised a liquid containing nicotine and flavourings, giving off vapour that users could inhale.

Hon Lik's e-cigarette began a quiet revolution in safer nicotine consumption. The company Hon Lik worked for, Beijing Saybolt Ruyan Technologies, launched the first vaping products in China in 2004, having been approved by the Chinese Smoking and Health Association. They proved popular with consumers, earning the company \$13m in 2005 alone.^{xxiii} Building on Hon Lik's technology, a new industry began to spring up in the city of Shenzhen in China from the mid 2000s. An export market developed, and gradually, people around the world began to adopt the products.

Nicotine consumers are the key players in the development of tobacco harm reduction

During the first decade of the 21st century, thousands of people began sharing their personal experiences of switching from smoking to vaping products in online forums. Supportive vaping communities sprang up, both on the internet and in person. Some consumers took an active role, improving on the vaping devices they were buying, and sharing their 'mods' (modifications) with others. Many of these new innovations in vaping technology were subsequently commercialised by agile manufacturers based in China, who were paying close attention to the demands of their growing consumer base. Vaping companies began to spring up in other countries as well.

Health and regulatory authorities began to take note of the use of e-cigarettes and consider how to respond appropriately. When it looked as though regulation may lead to reduced access to safer products while leaving combustible cigarettes on sale, consumers began to advocate for their right to use the products that had helped them quit smoking. Key moments that saw vaping communities coalesce around their right to switch included the Medicines and Healthcare products Regulatory Agency consultation in the UK in 2010 and the draft European Union Tobacco Products Directive in 2013.^{xxiii, xxiv}

The views of thousands of individuals who had personally benefited from switching from smoking did have an impact on the policy outcomes in both 2010 and 2013. These early successes proved to the vaping community that the collective power of many individual voices should not be underestimated. This grassroots campaigning may have helped encourage the development of the current, more structured global consumer advocacy movement.

Late to the game, the tobacco industry entered the market and seeded mistrust

Public health and traditional tobacco control organisations were wrongfooted by the disruption of the vaping revolution. So too was the tobacco industry. In the 2010s, some tobacco industry players recognised the threat safer nicotine products posed to their existing consumer base and entered the market. Given the industry's past behaviour, this has reasonably led to concerns.

The fact is that safer nicotine products now exist and they are being adopted by millions of consumers who want to improve their own health. This means that if the global regulatory environment supports it, there is profit to be made for the tobacco industry in a transition towards safer products. For the first time, a commercial interest exists for these companies and their shareholders that works in tandem with

the public health goal of reducing smoking-related harms. There are also many other manufacturers working in the production of safer nicotine products that have no basis in the legacy tobacco industry.

Disruption to public health and the tobacco control establishment

A significant and independent evidence base in favour of the role of safer nicotine products in tobacco harm reduction has been developing at pace. Yet many in public health have so far failed to adapt to the new landscape. Worse still, some health organisations have deployed the same tactics of ‘fear, uncertainty and doubt’ that the tobacco industry was once, rightly, criticised for. This includes a refusal to engage with emerging scientific evidence, which has, in many instances, drifted into outright disinformation.

It is unarguable that scrutiny and debate about new products and nicotine-using behaviours is essential. Yet kneejerk opposition, without regard to evidence, or a willingness to discuss the role of effective tobacco harm reduction in reducing smoking-related death and disease, has led to facts falling victim to dogma, including from the highest levels of global tobacco control policymaking.

The foundations for this can be traced to the financial dependency of the World Health Organization’s global tobacco control interventions – and related organisations and campaigns – on funding from individual philanthropists. Financial services billionaire and WHO Ambassador for Non-Communicable Diseases Michael Bloomberg advocates an abstinence-focused approach to nicotine. While funding harm reduction interventions in other areas of substance use, hundreds of millions of Bloomberg Philanthropies’ dollars are supporting the prohibition of safer nicotine products for tobacco harm reduction. This individual, privately-run foundation holds a dominant role in international tobacco control.^{xxv}

Appropriate regulation of safer nicotine products acts in support of public health

State and public health bodies have a duty to help ensure safer nicotine products are properly tested, assessed, regulated, and controlled – for example, by preventing their sale to children. But the use of the law to influence individual behaviours involves consideration of key human rights. Balancing individual rights against centrally determined benefits is essentially fraught.

When the state or international organisations legislate and enforce, the intention is to reduce harms and risks. Yet in many countries in 2022, significantly safer nicotine products are banned or restricted, while cigarettes, the most dangerous means of using nicotine, remain universally legal. In many cases, cigarettes are even being produced by state-owned or state-benefiting enterprises.

People who smoke should have the right to access lower risk products that evidence shows are among the most effective tools for cessation. To this end, consumer advocacy organisations have formed worldwide, and have had some notable successes in retaining that right in some countries and regions. Yet at the highest levels of international policymaking, these people are barred from participation in decisions that directly affect their health. The Framework Convention on Tobacco Control includes harm reduction, but the approach has been ignored in its implementation to date. In light of new developments in nicotine consumption, and in consideration of the fundamental human right to health, harm reduction now can and should be incorporated into international and national tobacco control efforts.^{xxvi}

The opportunity to end smoking is within our grasp: it must not be allowed to slip away

Tobacco harm reduction can end smoking. But the approach is mistrusted by many. This is largely due to suspicions about tobacco industry involvement in the manufacture of some safer nicotine products. Mistrust has been spread further through the proliferation of mis- and disinformation from well-funded tobacco control institutions that are increasingly shifting their focus onto nicotine use as well as smoking.

The divide is extreme, with public health and policymakers split over tobacco harm reduction's role in smoking cessation, adult consumers' continued nicotine use, and concerns that safer nicotine products pose a risk to young people. As the debate rolls on, every day over a billion adults continue being harmed by the universally legal and deadliest nicotine delivery system: the tobacco cigarette.

The truth is that the genie is out of the bottle: a major disruptive force is at play. A range of safer nicotine products have established both an evidence base for reduced harm in comparison to smoking cigarettes and consumer popularity. But divisions within both the public health and political worlds are blocking progress.

Prohibition of safer nicotine products, while deadly combustibles remain on sale, is illogical. It will ultimately fail, bringing with it the same unintended consequences of alcohol prohibition and the war on drugs. With over a billion customers for cigarettes, the tobacco industry's core business is rock solid. It can afford to watch the battle over tobacco harm reduction play out.

Effective harm reduction interventions, at minimal cost to governments and health agencies, can end smoking within a generation. The alternative is a continuation of approaches that will continue to fail those most in need and the price will be counted in the millions of lives that could have otherwise been saved.

This GSTHR Briefing Paper summarises the key messages of [The Global State of Tobacco Harm Reduction 2022: The Right Side of History](#). It is the third biennial Global State of Tobacco Harm Reduction (GSTHR) report and it was published on 16 November 2022. For further information about the Global State of Tobacco Harm Reduction's work, or the points raised in this Briefing Paper, please contact info@gsthr.org

*About us: **Knowledge•Action•Change** (K•A•C) promotes harm reduction as a key public health strategy grounded in human rights. The team has over forty years of experience of harm reduction work in drug use, HIV, smoking, sexual health, and prisons. K•A•C runs the [Global State of Tobacco Harm Reduction](#) (GSTHR) which maps the development of tobacco harm reduction and the use, availability and regulatory responses to safer nicotine products, as well as smoking prevalence and related mortality, in over 200 countries and regions around the world. For all publications and live data, visit <https://gsthr.org>*

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This Briefing Paper is drawn from [The Global State of Tobacco Harm Reduction 2022: The Right Side of History](#) report. References to a number of external sources cited in the main report are provided below, but for full details, all references and further information on the points raised in this Briefing Paper, please access the full report at <https://gsthr.org/resources/thr-reports/the-right-side-of-history/>

- ⁱ WHO. Tobacco. Key facts [Internet]. World Health Organization. 2022 [cited 2022 Sep 27]. Available from: <https://www.who.int/news-room/fact-sheets/detail/tobacco>
- ⁱⁱ England: Smoking responsible for twice as many cancers in lower income groups [Internet]. Cancer Research UK - Cancer News. 2021 [cited 2022 Sep 27]. Available from: <https://news.cancerresearchuk.org/2021/08/03/england-smoking-responsible-for-twice-as-many-cancers-in-most-deprived-groups/>
- ⁱⁱⁱ Shapiro H. Burning Issues: Global State of Tobacco Harm Reduction 2020. Chapter 4 [Internet]. London: Knowledge-Action-Change; 2020 [cited 2021 Feb 18]. Available from: <https://gsth.org/resources/item/burning-issues-global-state-tobacco-harm-reduction-2020>
- ^{iv} GSTHR. 82 million vapers worldwide in 2021: the GSTHR estimate [Internet]. 2022 Feb [cited 2022 May 31]. (GSTHR Briefing Papers). Available from: <https://gsth.org/briefing-papers/82-million-vapers-worldwide-in-2021-the-gsth-estimate/>
- ^v Kluger R. Ashes to Ashes: America's Hundred-Year Cigarette War, the Public Health, and the Unabashed Triumph of Philip Morris. 1st Vintage Books ed edition. New York: Vintage; 1997. 832 p.
- ^{vi} Smoking and health: A report of the Royal College of Physicians on smoking in relation to cancer of the lung and other diseases [Internet]. UK: Royal College of Physicians; 1962 [cited 2022 Sep 26]. Available from: <https://www.rcplondon.ac.uk/projects/outputs/smoking-and-health-1962>
- ^{vii} Smoking and Health [Internet]. US: Public Health Service. Office of the Surgeon General; 1964 [cited 2022 Sep 26]. Available from: <https://profiles.nlm.nih.gov/spotlight/nn/catalog/nlm:nlmuid-101584932X202-doc>
- ^{viii} Wipfli H. The Global War on Tobacco: Mapping the World's First Public Health Treaty [Internet]. Johns Hopkins University Press; 2015. Available from: <https://books.google.pl/books?id=fwPHCQAAQBAJ>
- ^{ix} World Health Organization. WHO Framework Convention on Tobacco Control. Updated reprint 2004, 2005 [Internet]. May 25, 2003. Available from: <https://fctc.who.int/who-fctc/overview>
- ^x Graham JDP. Nicotine and Smoking. Br Med J. 1970 Oct 24;4(5729):244.
- ^{xi} Russell MA, Jarvis MJ, Feyerabend C. A new age for snuff? Lancet. 1980 Mar 1;1(8166):474-5.
- ^{xii} Rodu B, Jansson C. Smokeless tobacco and oral cancer: a review of the risks and determinants. Crit Rev Oral Biol Med. 2004 Sep 1;15(5):252-63.
- ^{xiii} Kozlowski LT. Origins in the USA in the 1980s of the warning that smokeless tobacco is not a safe alternative to cigarettes: a historical, documents-based assessment with implications for comparative warnings on less harmful tobacco/nicotine products. Harm Reduction Journal. 2018 Apr 16;15(1):21.
- ^{xiv} Rodu B, Godshall WT. Tobacco harm reduction: an alternative cessation strategy for inveterate smokers. Harm Reduction Journal. 2006 Dec 21;3(1):37.
- ^{xv} Statistics Sweden. Tobacco habits by indicator, study domain and sex. Percentage and estimated numbers in thousands. Year 2008-2009 - 2021-2021 [Internet]. Statistikdatabasen. [cited 2022 Sep 27]. Available from: http://www.statistikdatabasen.scb.se/pxweb/en/ssd/START__LE__LE0101__LE0101H/LE01012021H06/
- ^{xvi} Lee P, Ramström L. New data reveals potential of snus in reducing impact of tobacco-related diseases [Internet]. News-Medical.net. 2017 [cited 2022 Nov 9]. Available from: <https://www.news-medical.net/news/20170616/New-data-reveals-potential-of-snus-in-reducing-impact-of-tobacco-related-diseases.aspx>
- ^{xvii} GSTHR. An introduction to snus [Internet]. Global State of Tobacco Harm Reduction; 2022 Sep [cited 2022 Oct 17]. (GSTHR Briefing Papers). Available from: <https://gsth.org/briefing-papers/an-introduction-to-snus/>
- ^{xviii} Newcombe R. High Time For Harm Reduction. Druglink. 1987 Jan 1;2:10-1.
- ^{xix} Warner KE, Slade J, Sweanor DT. The Emerging Market for Long-term Nicotine Maintenance. JAMA. 1997 Oct 1;278(13):1087-92.
- ^{xx} Dunworth J. An Interview with The Inventor of the Electronic Cigarette [Internet]. Ashtray Blog. 2013 [cited 2022 Sep 27]. Available from: <https://www.ecigarettedirect.co.uk/ashtray-blog/2013/10/interview-inventor-e-cigarette-herbert-a-gilbert.html>
- ^{xxi} Michels DL. Regulatory Letter [Internet]. Truth Tobacco Industry Documents. 1987 [cited 2022 Sep 27]. Available from: <https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=xggy0038>
- ^{xxii} Ducharme J. Big Vape. London: Hodder & Stoughton; 2022. 336 p.
- ^{xxiii} Directive 2014/40/EU of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC. Apr 3, 2014.
- ^{xxiv} Electronic Cigarettes. Volume 508: debated on Wednesday 7 April 2010 [Internet]. Hansard - UK Parliament. 2010 [cited 2022 Oct 4]. Available from: <https://hansard.parliament.uk/commons/2010-04-07/debates/10040762000014/ElectronicCigarettes>
- ^{xxv} Shapiro H. Burning Issues: Global State of Tobacco Harm Reduction 2020. Chapter 5 - Project fear: the war against nicotine. [Internet]. London: Knowledge-Action-Change; 2020 [cited 2021 Feb 18]. Available from: <https://gsth.org/reports/burning-issues-2020/chapter-5/>
- ^{xxvi} GSTHR. The right to health and the right to tobacco harm reduction [Internet]. London: Global State of Tobacco Harm Reduction; 2022 Jun [cited 2022 Sep 27]. (GSTHR Briefing Papers). Available from: <https://gsth.org/briefing-papers/the-right-to-health-and-the-right-to-tobacco-harm-reduction/>